DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 175, 176, 178 and 180

[Docket No. RSPA–04–17036 (HM–215G)]

RIN 2137–AD92

Harmonization With the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule.

SUMMARY: RSPA is amending the Hazardous Materials Regulations (HMR) to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. Because of recent changes to the International Maritime Dangerous Goods Code (IMDG Code), the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), and the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations), these revisions are necessary to facilitate the transport of hazardous materials in international commerce.

DATES: The effective date of these amendments is January 1, 2005

Delayed Compliance Date: Unless otherwise specified, compliance with the amendments adopted in this final rule is required beginning January 1, 2006.

Incorporation by Reference Date: The incorporation by reference of the publications adopted in § 171.7 of this final rule have been approved by the Director of the Federal Register as of January 1, 2005.

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I. Background

On December 21, 1990, RSPA (we) published a final rule (Docket HM–181; 55 FR 52402) based on the UN Recommendations, which comprehensively revised the Hazardous Materials Regulations (HMR), 49 CFR Parts 171 to 180, for harmonization with international standards. Since publication of the 1990 final rule we have issued five additional international harmonization final rules (Dockets HM–215A, 59 FR 67390; HM–215B, 62 FR 24690; HM–215C, 64 FR 10742; HM–215D, 66 FR 33316; and HM–215E, 68 FR 44992). The rules provided additional harmonization with international transportation requirements by more fully aligning the HMR with the corresponding biennial updates of the UN Recommendations, the IMDG Code and the ICAO Technical Instructions.

The UN Recommendations are not regulations, but rather are recommendations issued by the UN Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labeling (GHS). These recommendations are amended and updated biennially by the UN Committee of Experts. They serve as the basis for National, regional, and international modal regulations; specifically, the IMDG Code issued by the International Maritime Organization (IMO), and the ICAO Technical Instructions issued by the ICAO. In 49 CFR 171.12, the HMR authorize domestic transportation of hazardous materials shipments prepared in accordance with the IMDG Code if all or part of the transportation is by vessel, subject to certain conditions and limitations. In § 171.11, subject to certain conditions and limitations, the HMR authorize the offering, acceptance and transport of hazardous materials by aircraft, and by motor vehicle either before or after being transported by aircraft, provided the shipment is in accordance with the ICAO Technical Instructions.

The continually increasing amount of hazardous materials transported in international commerce warrants the harmonization of domestic and international requirements to the greatest extent possible. Harmonization serves to facilitate international transportation and at the same time ensures the safety of people, property and the environment. While the intent of the harmonization rulemakings is to align the HMR with international standards, we review and consider each amendment on its own merit. Each amendment is considered on the basis of the overall impact on transportation safety and the economic implications associated with its adoption into the HMR. Our goal is to harmonize without diminishing the level of safety currently provided by the HMR and without imposing undue burdens on the regulated public. In our efforts to continue to align the HMR with international requirements, this final rule incorporates changes into the HMR based on the Thirteenth Revised Edition of the UN Recommendations, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. Petitions for rulemaking concerning harmonization with international standards and additional measures concerning facilitation of international transportation are also addressed in this final rule and serve as the basis of certain amendments. Other amendments are based on feedback from the regulated industry, other DOT modal administrations and our initiative. Also included are various editorial clarifications. Unless otherwise stated, the revisions are for harmonization with international standards.

II. Overview of Changes in This Final Rule

Amendments to the HMR in this final rule include, but are not limited to the following:

—Amendments to the Hazardous Materials Table (HMT) which add, revise or remove certain proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, bulk packaging requirements, passenger and cargo aircraft maximum quantity limitations and vessel stowage provisions.

—Amendments to the List of Marine Pollutants.
—Revisions and additions of special provisions.
—Removal of the air eligibility marking requirement.
—Addition of a ''KEEP AWAY FROM HEAT'' marking requirement for packages offered for transportation by air.
—Amendment to require that aerosols that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means.
—A grandfather provision to allow the shipment of materials classified as corrosive to steel or aluminum under ASTM G 31–72.
— A provision to require that the word ''overpack'' be marked on overpacks to indicate that inside packages comply with prescribed specifications.
—An amendment to the criteria for classification of materials that are corrosive to metals.
—Revision of the limited quantity provisions for Class 6.1, PG II materials and for materials with a subsidiary hazard of 6.1, PG II.
—Amendments to the packaging requirements for materials classified as Division 6.1, Packing Group I, Hazard Zone A or Hazard Zone B.
—Revision of the organic peroxide packaging requirements in order to have one consolidated packaging section for organic peroxides. The revised section will include three separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs, respectively. Additionally, the packaging tables will be updated through the amendments to the organic peroxide requirements that will add, revise, or delete certain entries in the organic peroxide tables.

III. Overview of Amendments Not Being Considered for Adoption in This Final Rule

This final rule makes changes to the HMR based on amendments to the Thirteenth Revised Edition of the UN Recommendations, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. However, we are not adopting all of the amendments to those documents into the HMR. In many cases, amendments to the international regulation have not been adopted because of the framework or structure of the HMR. In several cases, we are handling certain amendments in separate rulemakings. For example, all amendments related to infectious substances are being handled under Docket HM–226A. In some instances, such as the amendment to ICAO Technical Instructions to allow certain oxygen generators aboard passenger carrying aircraft, we do not believe the amendment to be in the interest of public safety.

One of the goals of this rulemaking is to continue to maintain consistency between the HMR and the international requirements. We are not striving to make the HMR identical to the international regulations but rather striving to remove or avoid potential barriers to international transportation.

Below is a listing of those significant amendments to the international regulations that we have not included in this final rule with a brief explanation of why the amendment was not included:

• Requirements for infectious substances and genetically modified micro-organisms;

[Amendments to the HMR related to infectious substances will be addressed in a future rulemaking under Docket HM–226A. Several other federal agencies regulate genetically modified micro-organisms; thus we do not plan to adopt provisions for their transport in the HMR.]

• Compressed gas cylinders;

[Amendments to the HMR related to compressed gas cylinders will be addressed in a future rulemaking under Docket HM–220E.]

• Environmentally hazardous substances;

[Delay in action pending further amendments to the international regulations.]

• Hazardous materials security;

[Amendments to the HMR related to the UN Model Regulation's hazardous materials security requirements were promulgated in a rulemaking under the HM–232 Docket series.]

• Requirements for radioactive materials;

[Amendments to the HMR related to Class 7 (radioactive) materials are being addressed in a rulemaking under the HM–230 Docket series.]

• Non-specification bulk packagings;

[We are not adopting the new requirements in the UN Recommendations for non-specification bulk packagings including the additional inspection, testing and marking requirements. We are unsure about the cost impacts of imposing these additional amendments and, therefore, are not adopting any additional amendments at this time.]

• The reference to EN 10028–3, Part 3 for defining steel grain size relevant to the definition of fine grain steel;

[We do not believe there is a need to adopt the European standard EN 10028–3, Part 3 because this standard is equivalent to ASTM E 112–96 (IBR, see § 171.7 of this subchapter). In addition, the ASTM standard is currently referenced in the HMR and is more commonly used and recognized in the U.S.]

• Bulk authorization for UN0331, UN0332 and UN3375;

[For several years, we have authorized, under exemption, the transport of certain blasting agents in bulk packagings. We are currently reviewing those exemptions to determine if they should be included in the HMR. The amendments in the UN Recommendations related to the bulk authorizations for UN0331, UN0332 and UN3375 will be included in that review.]

• The removal of wooden barrel requirements;

[The removal of the wooden barrel requirements (2C1 and 2C2) may be considered in a future rulemaking.]

• The 24-hour gasket relaxation requirement;

[A requirement that removable head packagings for liquids not be drop tested until at least 24 hours after filling and closing to allow for any possible gasket relaxation was adopted in the thirteenth revised edition of the UN Model Regulations. We have conducted testing in coordination with drum manufacturers and have determined that this requirement is not substantiated by the results of the tests conducted. Therefore, we are not adopting into the HMR amendments relative to the 24-hour gasket relaxation requirement. We also opposed this requirement when it was considered by the UN TDG Sub-Committee.]

• Authorization to transport protective breathing equipment (PBE's) with an oxygen generator as cargo onboard a passenger-carrying aircraft.

[We do not believe that oxygen generators should be transported aboard passenger carrying aircraft. Therefore, we are not adopting the ICAO amendment that would allow oxygen generators in protective breathing equipment to be transported in passenger carrying aircraft.]

IV. Section-By-Section Review

Part 171

Section 171.7

Paragraph (a)(3) (incorporation by reference materials) is updated to include the most recent editions of the

ICAO Technical Instructions, the IMDG Code and the UN Recommendations. The updated editions of these standards become effective January 1, 2005. Additionally, the International Maritime Organization (IMO) recommends authorizing a one-year transition period, with a delayed compliance date of January 1, 2006, for the use of the updated edition (Amendment 32) of the IMDG Code.

The updated additions are as follows:

—The ICAO Technical Instructions, 2005–2006 Edition.
—The IMDG Code, Amendment 32.
—The UN Recommendations, Thirteenth Edition.
—The UN Manual of Tests and Criteria, 4th Revised Edition.

Paragraph (b) (list of informational materials not requiring incorporation by reference) is revised by adding an additional reference for a new method for determining the size of an emergency-relief device for portable tanks transporting organic peroxides. This revision is based on a petition for rulemaking numbered P–1428. The petition was submitted by the Organic Peroxides Producers Safety Division of the Society of the Plastics Industry, Inc.

One commenter recommended that we revise the ''Note to Paragraph (h)(3)(vi)'' in § 173.225 to maintain format consistency with the incorporation by reference entry for ''Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology'' found in § 171.7(a). We disagree. The reference to a second example of a test method for venting sizing is not found in § 171.7(a) as a material incorporated by reference. Rather, it is found in § 171.7(b) as informational material not requiring incorporation by reference. Therefore, for clarification we are revising § 171.7(b) to include the reference to the *''American Institute of Chemical Engineers Process Safety Progress Journal.''* In addition, we are revising the ''Note to Paragraph (h)(3)(vi)'' in § 173.225 to include a reference to § 171.7(b), *list of informational materials not requiring incorporation by reference.*

Section 171.8

The definition for ''salvage packaging'' is revised to include the term ''non-conforming.'' The term ''non-conforming'' was added to the definition by the UN Committee of Experts in December 2000 to accommodate the use of salvage packaging for. Occasionally an undamaged package is found to be tested to a performance level which is less than that required for the specific substance it contains (*e.g.*, a drum tested to PG II standards containing a PG I substance). In other instances, the package is found to be a non-performance tested packaging containing a regulated substance. In these situations, it may not be safe or practical to transfer the material to the correct packaging to continue on to the consignee in order to ensure compliance with the HMR. Therefore, the use of salvage packaging to contain ''non-conforming'' packages will minimize the risk to those handling the package during its transport back to the shipper or to an appropriate disposal location.

Section 171.11

Paragraph (d)(15) is revised to clarify that the limitations therein also apply to oxygen generators contained in personal breathing equipment. In addition, paragraph (d)(17) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.12

In § 171.12, paragraph (b)(20) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.12a

Paragraph (a) is revised to clarify the requirements for the return to Canada of bulk packagings that correspond to DOT or UN Specifications. Paragraph (b)(9)(ii) is revised to indicate that the shipping certification must be completed for shipments from Canada that enter the U.S. Paragraph (b)(18) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.22 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.14

Paragraphs (d) and (d)(1) are revised to authorize a delayed implementation date for the amendments in this final rule. The effective date of this final rule is January 1, 2005. We are also, authorizing a delayed compliance date of January 1, 2006, which is comparable to the transitional provisions provided in the final rule published under Docket HM–215E. The delayed mandatory compliance date offers sufficient time to implement the new requirements.

Paragraph (d)(2) is revised to authorize certain intermixing of old and new requirements.

Part 172

Section 172.101

The regulatory text preceding the Hazardous Materials Table is revised as follows:

Paragraph (c)(11) and the corresponding note to paragraph (c)(11) are amended to revise a section reference. The reference to § 173.225(c) in the first sentence is revised to read § 173.225(b) and the reference to § 173.225(c)(2) in the note to paragraph (c)(11) is revised to read § 173.225(b)(2).

Paragraph (d)(4) is revised by adding a statement indicating that when the abbreviation ''Comb liq.'' is found in the ''Hazard class or division'' column of the Hazardous Materials Table (column 3), the material falls into the ''Combustible liquid'' hazard class.

Paragraph (i)(3) of this section is revised to specify that Column 7 of the Hazardous Materials Table contains additional bulk packaging authorizations and limitations for the use of UN portable tanks.

§ 172.101 The Hazardous Materials Table (HMT). In this final rule we made various amendments to the HMT. Readers should review all changes for a complete understanding of the Table amendments. The HMT has been reprinted in its entirety due to the numerous changes. Under this final rule the changes to the HMT for the purpose of harmonizing with international standards, unless otherwise stated, include, but are not limited to the following:

• We revised several entries by adding the qualifying word ''liquid.'' This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

UN1392 Alkaline earth metal amalgam
UN1420 Potassium metal alloys
UN1422 Potassium sodium alloys
UN1701 Xylyl bromide
UN1742 Boron trifluoride acetic acid complex
UN1743 Boron trifluoride propionic acid complex
UN2235 Chlorobenzyl chlorides
UN2236 3-Chloro-4-methylphenyl isocyanate
UN2306 Nitrobenzotrifluorides
UN2445 Lithium alkyls
UN2552 Hexafluoroacetone hydrate
UN2937 alpha-Methylbenzyl alcohol

UN3276 Nitriles, toxic, n.o.s.
UN3278 Organophosphorus compound, toxic, n.o.s.
UN3280 Organoarsenic compound, n.o.s.
UN3282 Organometallic compound, toxic, n.o.s.
UN3281 Metal carbonyls, n.o.s.

• We revised several entries by adding the qualifying word ''solid.'' This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

UN1445 Barium chlorate
UN1447 Barium perchlorate
UN1459 Chlorate and magnesium chloride mixture
UN1470 Lead perchlorate
UN1578 Chloronitrobenzenes
UN1579 4-Chloro-o-toluidine hydrochloride
UN1650 beta-Naphthylamine
UN1680 Potassium cyanide
UN1689 Sodium cyanide
UN1690 Sodium fluoride
UN1697 Chloroacetophenone
UN1709 2,4-Toluylenediamine
UN1812 Potassium fluoride
UN1843 Ammonium dinitro-o-cresolate
UN2074 Acrylamide
UN2239 Chlorotoluidines
UN2261 Xylenols
UN2446 Nitrocresols
UN2662 Hydroquinone
UN3283 Selenium compound, n.o.s.

• We revised several entries by removing the qualifying word ''solid.'' This action provides consistency with the Thirteenth Revised Edition of the UN Recommendations. The affected entries are as follows:

UN1489 Potassium perchlorate, solid
UN1598 Dinitro-o-cresol, *solid*
UN1638 Mercury iodide, *solid*
UN1740 Hydrogendifluorides, n.o.s. *solid*
UN2439 Sodium hydrogendifluoride, *solid*

• We deleted several entries. This action removes from the HMR the solution form of entries that are not identified as solutions in the Thirteenth Revised Edition of the UN Recommendations. The deleted entries are as follows:

UN1489 Potassium perchlorate, solution
UN1598 Dinitro-o-cresol, *solution*
UN1638 Mercury iodide, *solution*
UN1740 Hydrogendifluorides, n.o.s. *solutions*
UN2439 Sodium hydrogendifluoride *solution*

• We revised the proper shipping name ''Butadienes, stabilized,'' UN1010 to read ''Butadienes, stabilized *or* Butadienes and hydrocarbon mixture, stabilized, *containing more than 40% butadienes.*''

• We revised the proper shipping name ''Potassium hydrogendifluoride, *solid*,'' UN1811 to read ''Potassium hydrogendifluoride, solid.''

• We revised the proper shipping name ''Refrigerating machines, *containing non-flammable, non-toxic, liquefied gas or ammonia solution (UN2672)*,'' UN2857 to read ''Refrigerating machines *containing non-flammable, non-toxic gases or ammonia solutions (UN2672).*''

• We removed four references to IB52 and four references to T23 from column 7 of the HMT. This change is necessary because IB52 and T23 have been relocated to § 173.225. The affected entries are:

UN3109 Organic peroxide type F, liquid
UN3110 Organic peroxide type F, solid
UN3119 Organic peroxide type F, liquid, temperature controlled
UN3120 Organic peroxide type F, solid, temperature controlled

• IP5 is removed from column 7 of the HMT for the following UN entries:

UN1791 Hypochlorite solution
UN2014 Hydrogen peroxide, aqueous solution with not less than 20% but not more than 60% hydrogen peroxide (*stabilized as necessary*).
UN3149 Hydrogen peroxide and peroxyacetic acid mixture with acid(s), water and not more than 5% peroxyacetic acid.

• We deleted several entries. This action is consistent with the deletion of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations that we are proposing to adopt into the HMR. The entries affected are:

UN2003 Metal alkyls, water-reactive, n.o.s. *or* Metal aryls, water-reactive, n.o.s.
UN3049 Metal alkyl halides, water-reactive, n.o.s. *or* Metal aryl halides, water-reactive, n.o.s.
UN3050 Metal alkyl hydrides, water-reactive, n.o.s. *or* Metal aryl hydrides, water-reactive, n.o.s.
UN3207 Organometallic compound *or* Compound solution *or* Compound dispersion, water-reactive, flammable, n.o.s.
UN3203 Pyrophoric organometallic compound, water-reactive, n.o.s., liquid Pyrophoric organometallic compound, water-reactive, n.o.s., solid
UN3372 Organometallic compound, solid, water-reactive, flammable, n.o.s.

• We added the following new entries. Many of these entries are the liquid or solid form of entries that are already listed in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. The new entries are as follows:

UN3377 Sodium perborate monohydrate
UN3378 Sodium carbonate peroxyhydrate
UN3379 Desensitized explosives, liquid, n.o.s.
UN3380 Desensitized explosives, solid, n.o.s.
UN3401 Alkali metal amalgam, solid
UN3402 Alkaline earth metal amalgam, solid
UN3403 Potassium metal alloys, solid
UN3404 Potassium sodium alloys, solid
UN3405 Barium chlorate solution
UN3406 Barium perchlorate solution
UN3407 Chlorate and magnesium chloride mixture solution
UN3408 Lead perchlorate solution
UN3409 Chloronitrobenzenes, liquid
UN3410 4-Chloro-o-toluidine hydrochloride solution
UN3411 beta-Naphthylamine solution
UN3413 Potassium cyanide solution
UN3414 Sodium cyanide solution
UN3415 Sodium fluoride solution
UN3416 Chloroacetophenone, liquid
UN3417 Xylyl bromide, solid
UN3418 2,4-Toluylenediamine solution
UN3419 Boron trifluoride acetic acid complex, solid
UN3420 Boron trifluoride propionic, acid complex, solid
UN3421 Potassium hydrogendifluoride solution
UN3422 Potassium fluoride solution
UN3423 Tetramethylammonium hydroxide, solid
UN3424 Ammonium dinitro-o-cresolate solution
UN3425 Bromoacetic acid, solid
UN3426 Acrylamide solution
UN3427 Chlorobenzyl chlorides, solid
UN3428 3-Chloro-4-Methylphenyl isocyanate, solid
UN3429 Chloro-toluidines, liquid
UN3430 Xylenols, liquids
UN3431 Nitrobenzotrifluorides, solid
UN3432 Polychlorinated biphenyls, solid
UN3433 Lithium alkyls, solid
UN3434 Nitrocresols, liquid
UN3435 Hydroquinone solution
UN3436 Hexafluoroacetone hydrate, solid

UN3437 Chlorocresols, solid
UN3438 alpha-Methylbenzyl alcohol, solid
UN3439 Nitriles, toxic, solid, n.o.s.
UN3440 Selenium compound, liquid, n.o.s.
UN3441 Chlorodinitrobenzenes, solid
UN3442 Dichloroanilines, solid
UN3443 Dinitrobenzenes, solid
UN3444 Nicotine hydrochloride, solid
UN3445 Nicotine sulphate, solid
UN3446 Nitrotoluenes, solid
UN3447 Nitroxylenes, solid
UN3448 Tear gas substance, solid, n.o.s.
UN3449 Bromobenzyl cyanides, solid
UN3450 Diphenylchloroarsine, solid
UN3451 Toluidines, solid
UN3452 Xylidines, solid
UN3453 Phosphoric acid, solid
UN3454 Dinitrotoluenes, solid
UN3455 Cresols, solid
UN3456 Nitrosyl-sulphuric acid, solid
UN3457 Chloronitrotoluenes, solid
UN3458 Nitroanisoles, solid
UN3459 Nitrobromobenzenes, solid
UN3460 N-Ethylbenzyltoluidines, solid
UN3461 Aluminium alkyl halides, solid
UN3462 Toxins, extracted from living sources, solid, n.o.s.
UN3464 Organophosphorus compound, toxic, solid, n.o.s.
UN3465 Organoarsenic compound, solid, n.o.s.
UN3466 Metal carbonyls, solid, n.o.s.
UN3467 Organometallic compound, toxic, solid, n.o.s.
UN3468 Hydrogen in a metal hydride storage system

A commenter stated that by adding the shipping names for desensitized explosives under identification numbers UN3379 and UN3380, approvals should be modified to authorize the use of classifications for the applicable hazardous materials. The commenter also noted that due to these additions, the definitions for flammable solids and flammable liquids require revision to account for the new shipping names. We do not anticipate a significant number of explosives being assigned to these shipping names. Therefore, we disagree with the commenter's contention that each holder of an EX number request an updated shipping classification. In addition, we do not agree with the commenter's request to revise the definitions of flammable solid and flammable liquid to include the additional proper shipping names. The definitions of flammable solid and flammable liquid adequately describe materials assigned to those shipping names. Additionally, shipping names are not found under hazard class definitions, but rather, in the HMT.

• We added the following new generic entries for materials that are toxic by inhalation. These new names will replace the existing generic entries in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

UN3381 Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC_{50}.*
UN3382 Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC_{50}.*
UN3383 Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC_{50}.*
UN3384 Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC_{50}.*
UN3385 Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC_{50}.*
UN3386 Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC_{50}.*
UN3387 Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC_{50}.*
UN3388 Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC_{50}.*
UN3389 Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC_{50}.*
UN3390 Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC_{50}.*

• We added the following new generic entries for organometallic substances. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. The new entries are as follows:

UN3391 Organometallic substance, solid, pyrophoric
UN3392 Organometallic substance, liquid, pyrophoric
UN3393 Organometallic substance, solid, pyrophoric, water-reactive
UN3394 Organometallic substance, liquid, pyrophoric, water-reactive
UN3395 Organometallic substance, solid, water-reactive
UN3396 Organometallic substance, solid, water-reactive, flammable
UN3397 Organometallic substance, solid, water-reactive, self-heating
UN3398 Organometallic substance, liquid, water-reactive
UN3399 Organometallic substance, liquid, water-reactive, flammable
UN3400 Organometallic substance, solid, self-heating

In addition, we are continuing to allow the use of the following specific Organometallic entries: UN1366, UN1370, UN2005, UN2445, UN3051, UN3052, UN3053, and UN3076. However, we anticipate removing these entries from the HMT by January 1, 2007.

• The U.N. Recommendations have adopted a rationalized approach for the assignment of UN portable tank instructions for solid materials. Based on that rationalized approach, we made several changes to UN portable tank authorizations in the HMR. These changes are summarized as follows. For a more specific identification of the affected shipping descriptions, refer to the *UN report* located in the public Docket.

For Division 4.1, Packing Group I materials, the use of UN portable tanks is not authorized.

For Division 4.3 materials with a subsidiary class of 6.1, in Packing Group I, the use of portable tanks is not authorized.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group II, Special Provisions T3 is specified.

For Division 4.2, Packing Group I materials, T21 and TP7 is specified.

For Division 4.3, Packing Group I materials, T9 and TP7 is specified.

For Division 5.1, Packing Group I materials, the use of UN portable tanks is not authorized.

For Division 6.1 and Class 8, Packing Group I materials, T6 is specified.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group III, Special Provisions T1 is specified.

• Several entries in the HMT have been revised by amending column 9B to read ''forbidden'' so that the materials are no longer authorized for transport aboard cargo aircraft. The entries have been revised because they meet the criteria of either Zone C or Zone D inhalation toxicity. All other Zone C and Zone D toxic by inhalation materials listed in the HMR are currently already forbidden from transport aboard passenger and cargo aircraft (these materials are already forbidden from transport aboard passenger aircraft). The entries to be revised include:

Zone C

UN2204 Carbonyl sulfide
UN1023 Coal gas, compressed
UN1064 Methyl mercaptan
UN1048 Hydrogen bromide, anhydrous
UN1079 Sulfur dioxide

Zone D

UN1005 Ammonia, anhydrous
UN3318 Ammonia solution, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia*
UN1040 Ethylene oxide *or* Ethylene oxide with nitrogen *up to a total pressure of 1MPa (10 bar) at 50 degrees C*
UN1040 Ethylene oxide *or* Ethylene oxide with nitrogen *up to a total pressure of 1MPa (10 bar) at 50 degrees C*
UN2191 Sulfuryl fluoride

Also, see § 172.102 for additional HMT amendments.

Appendix B to § 172.101

In Appendix B to § 172.101, List of Marine Pollutants, we removed the entries ''Diphenyl oxide and biphenyl phenyl ether mixtures,'' ''Isoamyl mercaptan,'' ''Pentanethiols,'' and ''Tetrachlorophenol.'' We revised the entry ''2, 6-Di-tert-Butylphenol'' and we added the entry ''Chloropicrin.''

Section 172.102

We amended § 172.102, Special Provisions, as follows:

• Several entries in the HMT are revised by adding special provisions A3, A6, A7, A9, A10, N3, and N36 to align this section with the equivalent special provisions in the ICAO Technical Instructions (13, 2, 5, 4, 7, 21, and 3 respectively). We removed the ''A'' special provisions for several entries because we have determined that the materials to which the provisions apply are currently not authorized for transportation on either passenger or cargo aircraft.

The following entries are revised by adding special provision A3:

UN1154 Diethylamine
UN1788 Hydrobromic acid, *not more than 49% strength*
UN1789 Hydrochloric acid
UN2031 Nitric acid, *other than red fuming, with more than 70% nitric acid*
UN2604 Boron trifluoride diethyl etherate

• The following entries are revised by adding A6:

UN1111 Amyl mercaptan
UN1228 Mercaptans, liquid, flammable, toxic, n.o.s.
UN1760 Corrosive liquid, n.o.s.
UN1903 Disinfectants, liquid, corrosive, n.o.s.
UN2031 Nitric acid, *other than red fuming, with not more than 70% nitric acid*
UN2054 Morpholine
UN2347 Butyl mercaptan
UN2363 Ethyl mercaptan
UN2402 Propanethiols
UN2801 Dye, liquid, corrosive, n.o.s.
UN2920 Corrosive liquid, flammable, n.o.s.
UN2922 Corrosive liquid, toxic, n.o.s.
UN3071 Mercaptans, liquid, toxic, flammable, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3098 Oxidizing liquid, corrosive, n.o.s.
UN3099 Oxidizing liquid, toxic, n.o.s.
UN3139 Oxidizing liquid, n.o.s.
UN3145 Alkylphenols, liquid, n.o.s. (*including C2-C12 homologues*)
UN3264 Corrosive liquid, acidic, inorganic, n.o.s.
UN3265 Corrosive liquid, acidic, organic, n.o.s.
UN3266 Corrosive liquid, basic, inorganic, n.o.s.
UN3267 Corrosive liquid, basic, organic, n.o.s.
UN3301 Corrosive liquid, self-heating, n.o.s.

• The following entries are revised by adding special provision A7:

UN1167 Divinyl ether, stabilized
UN1277 Propylamine
UN1389 Alkali metal amalgam, liquid
UN1389 Alkali metal amalgam, solid
UN1391 Alkali metal dispersion *or* Alkaline earth metal dispersion
UN1407 Cesium or Caesium
UN1420 Potassium metal alloys
UN1421 Alkali metal alloy, liquid, n.o.s.
UN1422 Potassium sodium alloys
UN1431 Sodium methylate
UN1796 Nitrating acid mixture *with not more than 50% nitric acid*
UN1796 Nitrating acid mixture *with more than 50% nitric acid*
UN1826 Nitrating acid mixture, spent *with not more than 50% nitric acid*
UN1826 Nitrating acid mixture, spent *with more than 50% nitric acid*
UN1828 Sulphur chlorides
UN1938 Bromoacetic acid
UN2257 Potassium
UN2749 Tetramethylsilane
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3205 Alkaline earth metal alcoholates, n.o.s.
UN3205 Alkaline earth metal alcoholates, n.o.s.
UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.

• The following entries are revised by adding special provision A9:

UN1449 Barium peroxide
UN1452 Calcium chlorate
UN3212 Hypochlorites, inorganic, n.o.s.

• The following entries are revised by adding special provision A10:

UN1828 Sulphur chlorides
UN2401 Piperidine

• The following entry is revised by adding special provision N3:

UN2817 Ammonium hydrogendifluoride solution

• The following entries are revised by adding special provision N36:

UN1184 Ethylene dichloride
UN1732 Antimony pentafluoride
UN1777 Fluorosulphonic acid
UN2699 Trifluoroacetic acid

• The following entries are revised by removing certain ''A'' special provisions since the materials themselves are forbidden for transportation aboard passenger and cargo aircraft:

UN1541 Acetone cyanohydrin, stabilized (remove A3)
UN1722 Allyl chloroformate (remove A3)
UN2692 Boron tribromide (remove A3, A7)
UN1744 Bromine *or* Bromine solutions (remove A3, A6)
UN2484 tert-Butyl isocyanate (remove A7)
UN2485 n-Butyl isocyanate (remove A7)
UN1752 Chloroacetyl chloride (remove A3, A6, A7)
UN1754 Chlorosulfonic acid (*with or without sulfur trioxide*) (remove A3, A6, A10)
UN2382 Dimethylhydrazine, symmetrical (remove A7)
UN1182 Ethyl chloroformate (remove A3, A6, A7)
UN2481 Ethyl isocyanate (remove A7)
UN2014 Hydrogen peroxide, aqueous solutions *with more than 40 percent but not more than 60 percent hydrogen peroxide* (stabilized as necessary) (remove A3, A6)
UN2015 Hydrogen peroxide, stabilized *or* Hydrogen peroxide aqueous solutions, stabilized *with more than 60 percent hydrogen peroxide* (remove A3, A6)
NA9206 Methyl phosphonic dichloride (remove A3)
UN2534 Methylchlorosilane (remove A2, A3, A7)
UN2304 Naphthalene, molten (remove A1)
UN1670 Perchloromethyl mercaptan (remove A3, A7)
UN1810 Phosphorus oxychloride (remove A7)
UN2740 n-Propyl chloroformate (remove A3, A6, A7)
UN1829 Sulfur trioxide, stabilized (remove A7)
UN1831 Sulfuric acid, fuming *with 30 percent or more free sulfur trioxide* (remove A3, A6, A7)
UN1834 Sulfuryl chloride (remove A3)
UN1836 Thionyl chloride (remove A7)
UN2474 Thiophosgene (remove A7)
UN1838 Titanium tetrachloride (remove A3, A6)
UN2441 Titanium trichloride, pyrophoric *or* Titanium trichloride mixtures, pyrophoric (remove A7, A8, A19, A20)
UN2442 Trichloroacetyl chloride (remove A3, A7)
UN1295 Trichlorosilane (remove A7)
UN2438 Trimethylacetyl chloride (remove A3, A6, A7)

• Paragraph (b)(3) of this section is amended to specify that a ''B'' code refers to a special provision that applies only to certain bulk packaging requirements and that, unless otherwise stated, does not apply to UN, IM Specification portable tanks or IBCs.

• Paragraph (b)(4) of this section is amended to specify that a code containing the letters ''IB'' or ''IP'' refers to a special provision that applies only to transportation in IBCs.

• Paragraph (b)(7) of this section is amended to specify that a code containing the letter ''T'' refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

• Paragraph (b)(8) is redesignated (b)(9) and a new paragraph (b)(8) is added to specify that a code containing the letters ''TP'' refers to a special provision that is in addition to those provided by the portable tank instructions or the requirements in part 178.

• Special Provision 47 is revised to include an additional exception currently in the UN Model Regulations specifying that a leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags.

• Special Provision 135 is revised to expand the applicability of the proper shipping names ''Vehicle, flammable liquid powered'' and ''Vehicle, flammable gas powered'' to include hybrid electric vehicles.

• Special Provision 137 is revised to expand the exception for ''Cotton, dry''.

• Special Provision 143 is removed and relocated to § 173.219 so that the limitations on the types of hazardous materials authorized apply to both self-inflating and non-self-inflating life-saving appliances.

• Special Provision 153 is relocated to new paragraph (k) in § 173.115 and revised to include amended classification criteria for aerosols containing flammable constituents consistent with criteria in the UN Model Regulations. The revised criteria include methods for the classification of aerosols based on the percentage of flammable components. One commenter agreed with the removal of Special Provision 153 and the relocation of classification criteria for aerosols to § 173.115(k).

• New Special Provision 163 is added to specify that Ammonium Nitrate Emulsions are required to satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18.

• New Special Provision 164 is added to specify that an approval is required for ''Desensitized explosives, liquid, n.o.s.'' and ''Desensitized explosives, solid, n.o.s.''

• New Special Provision 165 is added to the calcium hypochlorite PG II and the PG III entries for UN1748 and UN2880 to specify the danger of exothermic decomposition and require shading from direct sunlight and sources of heat during transportation. One commenter agreed with our efforts to harmonize the HMR with UN Recommendations, but was concerned with the intent of Special Provision 165. This commenter agreed that calcium hypochlorite should be shaded from direct sunlight but questioned the ambient heat and ventilation provisions. The commenter stated that calcium hypochlorite is currently transported in closed cargo transport units, thus, satisfying the requirement to protect this hazardous material from direct sunlight. However, since the cargo transport units are not ventilated by fan or induced ventilation, and the cargo transport units would be subjected to ambient heat, a violation of Special Provision 165 appears imminent. We disagree. We feel Special Provision 165 provides latitude for compliance with the ventilation and ambient heat requirements. Proper ventilation and protection from ambient heat can be achieved during the loading process of the cargo transport units and throughout the transportation cycle by allowing adequate space for air movement around the calcium hypochlorite packages. We do agree; however, that cargo transport units themselves should not be required to be shaded from direct sunlight. Therefore, we have revised the regulatory text accordingly.

• New Special Provision 166 is added to the PG II entry for calcium hypochlorite, UN2880 and UN1748 to indicate that calcium hypochlorite in the non-friable tablet form may be transported as a PG III material.

• New Special Provision 167 is added to the new entry for ''Hydrogen in a metal hydride storage system'' to specify that such storage systems shall always be considered as containing hydrogen.

• New Special Provision 170 is added to Organometallic substances entries (UN3391, UN3392, UN3393, and UN3394). The special provision requires air to be eliminated from the vapor space by nitrogen or other means.

• New Special Provision 171 is added to the UN2880 PG III entry. Since UN2880 also covers mixtures of hydrated calcium hypochlorite in any concentration, some formulations in other than tablet form (*e.g.*, in granular form) may meet the criteria for classification in Division 5.1, Packing Group III when subjected to the relevant test in the UN Manual of Tests and Criteria. The PG III entry for calcium hypochlorite is only authorized when the material is offered in the non-friable tablet form or for granular or powdered

mixtures. This entry is not authorized for the pure form of ''Calcium hypochlorite, hydrated''. We also recognize that some formulations, when tested, do not meet the criteria for classification in Division 5.1. In light of this, we added a new Special Provision 171 to the UN2880, PG III entry in the HMT to allow for the possibility to classify powdered or granular mixtures of hydrated calcium hypochlorite in Packing Group III when data indicate that the mixture meets the criteria for assignment to PG III. One commenter supports the revisions that align calcium hypochlorite entries in the HMT with UN Recommendations. However, this commenter requested the addition of Special Provision 171 to the entry, ''Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry, (UN1748)'' for consistent alignment with the UN Recommendations. We agree. After further review of the UN Recommendations, we have determined that the UN Special Provision 316 is equivalent to the proposed Special Provision 171 in Docket HM–215G, and is applicable to both the ''dry'' and ''hydrated'' calcium hypochlorite entries. Therefore, we are assigning Special Provision 171 to the ''Calcium hypochlorite, dry *or* Calcium hypochlorite mixtures dry, (UN1748)'' entry.

• Special Provision A11 is currently assigned to UN 2983, Ethylene oxide and Propylene oxide mixtures and UN 1411, Lithium aluminum hydride, ethereal. In the ICAO Technical Instructions these substances are only authorized for transport in metal cylinders. A11 states ''For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used. In the NPRM, we proposed to harmonize with the applicable ICAO Technical Instruction particular packing requirement (PPR 8), however discussions with the ICAO Dangerous Goods Panel and further analysis of ICAO PPR 8 has revealed that the requirement may need to be amended. Our analysis showed that other packagings, including glass inner packagings, are authorized, and as such restricting packagings to only specification cylinders appears unnecessarily restrictive. As such we are not proposing to amend Special Provision A11 in this final rule.

• Consistent with ICAO, we are adding a proper shipping name to the HMT for ''Receptacles, small containing gas, 2.2 with a subsidiary of 5.1.'' A new ''A'' code (A14) is added to prohibit this material from being transported as a limited quantity or consumer commodity in accordance with § 173.306 aboard an aircraft. This new ''A'' code has also been added to the following additional shipping names: ''Oxygen, compressed,'' Carbon dioxide and oxygen mixtures,'' ''Nitrous oxide'', ''Compressed gas oxidizing,'' and ''Liquefied gas, oxidizing.''

• For consistency, the authorization in Special Provision B69 to allow dry sodium or potassium cyanide in siftproof, water-resistant fiberboard IBCs is relocated to new Special Provision IP20.

• Paragraph (c)(4) of this section is amended by relocating ''Table 2.—Organic Peroxide IBC Code (IB52)'' to paragraph (e) of § 173.225 and renaming it the ''Organic Peroxide IBC Table.'' Table 3.—IP Codes is redesignated Table 2.—IP Codes. The wording of paragraph (c)(4) is revised to indicate that Table 3.—IP Codes had been redesignated Table 2.—IP Codes. All references to IB52 in the HMR are removed and replaced with ''Organic Peroxide IBC Table'' or ''§ 173.225(e),'' as applicable.

• Paragraph (c)(7) is amended by relocating the Portable Tank Code T50 Table to § 173.313 and renaming it ''UN Portable Tank Table for Liquefied Compressed Gases.'' The T50 Table and its description is removed from paragraph (c)(7)(iv) and replaced with a statement indicating that the new ''UN Portable Tank Table for Liquefied Compressed Gases'' is found in § 173.313. All references to T50 in the HMR are removed and replaced with ''UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.'' In addition, paragraph (c)(7) is amended by relocating Portable Tank Code T23 to paragraph (g) of § 173.225 and renaming it the ''Organic Peroxide Portable Tank Table.'' Portable Tank Code T23 and its description found in paragraph (c)(7)(iii) are removed and paragraphs (c)(7)(iv)–(c)(7)(vii) are redesignated (c)(7)(iii)–(c)(7)(vi), respectively. All references to T23 in the HMR are removed and replaced with ''Organic Peroxide Portable Tank Table'' or ''§ 173.225(g),'' as applicable.

• New paragraph (c)(8) is added to provide an introduction to the ''TP'' codes (*i.e.*, portable tank special provisions). The existing paragraph (c)(8) is redesignated paragraph (c)(9).

• New Special IBC Packing Provision IP13 is added to specify that transportation by vessel in IBCs is prohibited.

• New Special IBC Packing Provision IP14 is added to specify that air must be eliminated from the vapor space by nitrogen purging or other means.

• New Special IBC Packing Provision IP20 is added to specify that dry sodium cyanide and potassium cyanide are also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

• Portable tank Special Provision TP3 is revised to include the maximum degree of filling (in %) for solids transported above their melting points.

• Special Provision TP6 is revised by removing the word ''event'' and replacing it with the word ''incident.''

• Portable tank Special Provision TP9 is removed from column (7) of the HMT for all materials that reference a T code special provision. Special provision TP9 states that a material with TP9 in Column (7) may only be transported in a portable tank if approved by the Associate Administrator. A material that has been given a T code does not require approval and is not subject to Special Provision TP9.

• In the NPRM we proposed adoption of a new portable tank special provision, TP33, by adding the new provision to certain entries in the HMT. However, we neglected to include the text of the provision itself. We are correcting this omission in this final rule.

Section 172.202

We are editorially revising paragraph (a)(2)(iii) by removing the examples that illustrate the optional provision to enter primary and subsidiary hazard class or division names on shipping papers for domestic shipments. In the HM–215E response to appeals final rule (69 FR 34604) that was published on June 22, 2004, we reinstated the provision which was removed in a previous rulemaking (68 FR 44992). During the process of correcting a printing error in one of the examples, we determined that the regulatory text is complete and sufficient without the use of examples.

In the NPRM [69 FR 34741] we proposed to amend paragraph (a)(5)(i) to require the quantity shown on a shipping paper for an explosive article, such as Cartridges, small arms, to be the net mass of the entire article rather than the net mass of the explosive contained in the article. Commenters generally support the proposal, suggesting that it will provide for consistency across modes of transportation and for more accurate calculations. However, several of these commenters note that, for certain explosive articles that contain very small amounts of an explosive, showing the net mass of the article rather than of the explosive contained in the article could misrepresent the transportation risk associated with the article. Two commenters state that,

because shippers have historically calculated the net mass based on the actual explosive material contained in the article rather than the entire article, the clarification proposed in the NPRM could cause increased confusion for shippers.

Internationally, as well, there is some concern that, at least for large explosive articles, the quantity indicated on the shipping paper should be the net mass of the explosive substances contained in the article rather than the net mass of the article itself. As suggested by some commenters to the NPRM, a number of the members of UN Transport of Dangerous Goods Sub-Committee agree using the net mass of the entire article rather than the net mass of the explosive material contained in the article may not appropriately communicate the explosive hazard to emergency responders. Until this issue is resolved through a change to the UN Model Recommendations, we are, in this final rule, amending paragraph (a)(5)(i) to clarify that for explosive articles the quantity shown on a shipping paper may be expressed in terms of the net mass of the article or the net mass of the explosive substances contained in the article. It should be noted, however, that for purposes of determining the per-package quantity limitations shown in Column 9 of the HMT, § 172.101(j)(3) specifies that when articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device rather than to its hazardous components. This would include explosive articles listed by name in the HMT. For example, in the case of a listed explosive article weighing 15 kg and containing 500 grams of explosive substance, the weight shown on the shipping paper may be 500 grams or 15 kg, but the weight used for purposes of compliance with Column (9) of the HMT must be 15 kg as required by § 172.101(j)(3).

Particularly for large articles, the quantity indicated on the shipping paper should be the net mass of the explosive substances contained in the article. For small explosive articles, such as Cartridges, small arms, we believe that the net mass of the article can be used to satisfy the total quantity requirement in § 172.202(a)(5)(i). As a practical matter, it is easier, and in certain instances necessary, for an offeror to provide the net mass of the article and the net explosive mass. For example, as previously stated, the net mass of an article must be used to ensure compliance with the per package quantity limitations set forth in Column 9 of the § 172.101 Hazardous Materials Table for transport aboard aircraft or passenger rail (see § 172.101(j)(3)). However, for operational purposes, such as for stowage and segregation of large quantities of explosives or determining the quantity of explosives that can be transported on a vessel [see § 176.142(b)], the net explosive mass of the explosive substances contained in articles is needed.

Section 172.203

Paragraph (f) is revised by including the passenger and cargo aircraft limitation certification statement that is found in § 172.204. This aligns the HMR with the ICAO TI (see 4.1.5.8.1(b) of the ICAO TI). A new paragraph (i)(3) is added to specify additional shipping paper description requirements for a hazardous material consigned under an ''n.o.s.'' entry when offered for transportation by vessel. In addition, paragraph (m)(2) is revised to specify that the phrase ''Poison Inhalation Hazard'' or ''Toxic Inhalation Hazard'' is not required to be repeated if it otherwise appears in the shipping description. Finally, in paragraph (o)(3), the reference to § 173.225(c)(2) is amended to read § 173.225(b)(2).

One commenter felt the requirement to add a segregation code on the shipping paper for ''n.o.s.'' entries is unnecessary and unduly burdensome. In addition, the commenter is concerned that there may not be sufficient space on the shipping paper to indicate this notation. If, however, this requirement is adopted, the commenter requested an example of the required entry on shipping papers. We disagree. We do not feel this additional requirement is unnecessary or overly burdensome. The additional shipping paper description requirements apply only to hazardous material consigned under an ''n.o.s.'' entry when offered for transportation by vessel. We believe that consignors should be familiar with the hazards and segregation risks of their shipments, specifically ''n.o.s.'' materials that are not assigned segregation groups. By indicating the need to segregate such materials on the shipping paper, the consignor increases the likelihood that appropriate stowage procedures are followed, ensuring the safety of the vessel and its cargo. We also do not agree that there is inadequate space available on shipping papers to include the segregation group. However, we do agree that an example of the required entry should be presented for clarity and uniformity. Therefore, as recommended by the commenter, we are adding the example ''IMDG Code segregation group—1 Acids'' to § 172.203.

Section 172.204 and Section 172.321—Air Eligibility Marking

Under HM–215E (68 FR 44992), the air eligibility marking was adopted into the HMR as new § 172.321. Since publication of that final rule, the ICAO's Dangerous Goods Panel removed the air eligibility marking requirement from the ICAO Technical Instructions. In lieu of this marking, ICAO adopted a requirement that the shipping paper certification statement include the statement ''I declare that all of the applicable air transport requirements have been met'' when a hazardous material is offered for air transportation. Additionally, the revised section provided examples of the applicable air transport requirements that must be met. Based on this action, we revised the air eligibility marking requirement by making it optional rather than mandatory and adding the additional shipping paper certification statement for shipments going by aircraft. Therefore, we revised § 172.204(c)(3) by requiring that the statement ''I declare that all of the applicable air transport requirements have been met'' be included on the shipping paper in addition to the current certification statement when a hazardous material is offered for air transportation. Additionally, the revised section provides examples of the applicable air transport requirements that must be met and various section references. In order to allow shippers to expend stocks of preprinted shipping papers containing the previous certification statement, we are providing an additional ten month transitional provision for the new certification statement. Two commenters support RSPA's decision requiring shippers to sign the certification declaring compliance with requirements for air transportation. Additionally, several commenters agree with the revision to make the air eligibility marking optional. However, some commenters suggest making the marking ''permissible'' instead of ''optional'' to avoid potential confusion. We disagree. We are removing the requirement for shippers to mark packages acceptable for air transport with the air eligibility marking. This revision does not prohibit the use of the marking.

Section 172.315

Section 172.315 is amended to ensure that packages containing limited quantities which are transported by air are marked with the proper shipping name. Although the amendment was not proposed in this rulemaking, it was previously proposed and adopted under

HM–215E (68 FR 45000) but was omitted due to an editorial error during publication. The amendment provides harmonization with the ICAO Technical Instructions, which do not allow the UN number within a square-on-point border as a substitute for the proper shipping name. Note that this amendment does not preclude the ID number/square-on-point border from appearing on a package transported by air, it simply ensures that the proper shipping name is also required.

Section 172.317

A new § 172.317 is added to require a ''KEEP AWAY FROM HEAT'' handling mark on packages containing self-reactive substances of Division 4.1 or organic peroxides of Division 5.2 when such packages are transported by air.

Part 173

Section 173.3

The NPRM proposed to revise the requirements for use of salvage drums to include packages of hazardous materials that are found not to conform with the requirements of the HMR. In addition, the NPRM proposed to clarify that salvage drums may only be used for damaged, defective, non-conforming, or leaking packages identified as such after the packages have been placed in transportation. One commenter suggests that the phrase ''after having been placed in transportation'' as used in the NPRM is confusing and requests that we clarify the phrase using the terms ''pre-transportation functions'' and ''transportation functions'' as defined in a final rule published under Docket HM–223 October 30, 2003 (68 FR 61905). In response to this comment, in this final rule, we modified § 173.3(c) to clarify that salvage drums are to be used for damaged, defective, non-conforming, or leaking packages identified during transportation as ''transportation'' is defined in § 5102(12) of Federal hazardous materials transportation law—that is, the movement of property and loading, unloading, or storage incidental to the movement. When the HM–223 final rule becomes effective, the statutory definition for ''transportation'' will be added to § 171.8 of the HMR, as will definitions for ''movement,'' ''loading incidental to movement,'' ''unloading incidental to movement,'' and ''storage incidental to movement.'' Note that a package found to be leaking prior to its being placed in transportation may not be packaged in a salvage drum. Instead, it must be repackaged into an authorized packaging in accordance with applicable HMR requirements.

Section 173.24

For consistency with the UN Recommendations, paragraphs (g)(4) and (g)(5) are revised to clarify the following:

(A) That IBCs (subject to the requirements in § 173.24(g)) are permitted to be vented to reduce internal pressure; and

(B) That venting of IBCs is not conditional upon whether a bulk special provision is indicated for a particular hazardous material in the § 172.101 hazardous materials table.

In addition, paragraph (i) is revised to clarify that other general requirements specific to air transportation apply and are found in § 173.27.

Section 173.25

Paragraph (a)(2) is revised by removing the requirement to mark an overpack with the air eligibility marking. In addition, in paragraph (a)(4), we are amending the HMR to require overpacks to be marked with the word ''OVERPACK'' or, alternatively, until October 1, 2007, with a statement indicating that inside packages comply with prescribed specifications. This is in response to adoption by the United Nations of the ''OVERPACK'' marking to indicate that packages within an overpack comply with prescribed specifications when specification markings on inside packagings within the overpack are not visible.

Section 173.27

Paragraph (i) is revised to indicate that the air eligibility mark has been removed. This section references a new requirement for shippers to place the following statement at the end of the certification statement when a hazardous material is authorized for air transportation: ''I declare that all applicable air transport requirements have been met.''

Section 173.28

In paragraph (c)(2), we deleted the words ''or a UN 1H1 plastic drum'' in order to harmonize the HMR with the UN Model Regulations and remove a source of confusion within the regulated community regarding the reconditioning of a non-bulk packaging.

Section 173.115

In § 173.115, a new paragraph (k) is added (see discussion under § 172.102, Special Provision 153). One commenter noted that the proposed new § 173.115(k) would not allow aerosols to contain corrosive substances of Packing Group II. The commenter further noted that UN Special Provision 63 allows aerosols to contain corrosive substances of Packing Group II and requested we harmonize with the UN Special Provision 63 in this regard. We agree with the commenter and further note that currently, the HMR authorizes a proper shipping name of ''Aerosols, corrosive Packing Group II or III, each not exceeding 1 L capacity''. We are amending § 173.115(k) accordingly to clarify that aerosols may contain corrosive substances of Packing Group II.

Section 173.120 and Appendix H to Part 173

A commenter noted that under section § 173.120(a)(3), the reference to Appendix H for sustained combustibility tests directs the reader to Figures 5.1 and 5.2 found in the UN Recommendations. These figures are no longer in the UN Recommendations, but, rather, are located in section 32.5.2 of the Fourth Revised Edition of the UN Manual of Tests and Criteria. We agree with the commenter. Therefore, we are amending Appendix H to Part 173 to reference the UN Manual of Tests and Criteria.

Section 173.128

In paragraph (d)(1)(i), the section reference is revised to read § 173.225(c). In addition, in paragraphs (d)(1)(ii) and (d)(1)(iii), the section reference is revised to read § 173.225(b).

Section 173.132

In paragraph (b)(1), we revised the definition of LD^{50} for acute oral toxicity to indicate that adult albino rats may be tested without regard to gender. The current definition for LD^{50} for acute oral toxicity in § 173.132(b)(1) is based on the Organization for Economic Co-Operation and Development (OECD) Test Guideline (TG) 401. The OECD has agreed to three test methods that will replace the current TG 401. The United Kingdom, Germany and the United States of America took the lead in the development of the three alternative tests that OECD has now adopted and published in the OECD Guidelines for the Testing of Chemicals. In a continuing attempt to improve the estimate of acute oral toxicity while reducing the number of animals used per test, three alternative TGs have been developed and implemented to replace TG 401. The three TGs are the Fixed Dose Procedure (FDP, TG 420), the Acute Toxic Class Method (ATCM, TG 423), and the Up-and-Down Procedure (UDP, TG 425). The text is consistent

with the text in the 13th revised edition of the UN Model Regulations.

Section 173.136

We added a new paragraph (d) to provide a grandfather clause that will allow for the continued shipment of materials classified as corrosive to steel or aluminum under ASTM G 31–72 without retesting.

Section 173.137

In paragraph (c)(2), we propose to eliminate the references to ASTM G 31–72 as an acceptable test description and add a statement indicating an acceptable test is prescribed in the Manual of Tests and Criteria, Part III, Section 37.

Sections 173.150, 173.151, 173.152, 173.153 and 173.154

We are allowing most Division 6.1, Packing Group II materials to be transported under the limited quantity provisions when the packagings contain not more than 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids. However, consistent with the limited quantity authorization for Division 6.1, Packing Group III, we are not providing a labeling exception for these materials. We are also not allowing these materials to be shipped as consumer commodities. In addition, we revised the limited quantity sections for the other hazard classes of materials to take into account materials with a subsidiary hazard of 6.1 Packing Group II. One commenter agreed with the amendment allowing numerous Class 3, PG II materials with Class 8 and other subsidiary hazards to be transported as limited quantities.

Section 173.185

In § 173.185, we amended paragraphs (c)(3) and (e)(6), to require those lithium cell and battery design types that are required to be subjected to the UN performance tests to be of a type that is proven to meet the requirements of the performance tests specified in the UN Manual of Tests and Criteria, Fourth Revised Edition. These cells and batteries are currently required to be of a type that is proven to meet the tests in the third revised edition. We also proposed a grandfather provision that would authorize a lithium cell or battery that was transported prior to the effective date of this rule that is of a type proven to meet the UN performance tests in the third revised edition to not be required to be retested in accordance with the tests in the fourth revised edition. One commenter supported this approach and stated that it is both necessary and appropriate to allow continued transport of cells and batteries tested and qualified under the UN lithium battery design qualification tests in accordance with the UN Manual of Tests and Criteria, Third Revised Edition. The commenter further stated that providing a grandfather provision for previously tested cells and batteries would avoid the need and expense of requalifying these cells and batteries in accordance with the new tests prescribed in the Fourth Revised Edition of the UN Manual of Tests and Criteria. After further consideration, we believe that authorizing an indefinite period for the transport of batteries that were tested in accordance with the UN Manual of Tests and Criteria, Third Revised Edition, 1999 may not be in the best interest of safety. The tests in the UN Manual of Tests and Criteria, Fourth Revised Edition provide a slightly higher level of safety and we believe that further consideration needs to be taken in considering whether at some point in time all applicable lithium batteries and cell design types should be proven to meet the requirements of the UN Manual of Tests and Criteria, Fourth Revised Edition. As a result, we will issue a proposal shortly specifically to address the full unrestricted adoption of the Fourth Revised Edition of the UN Manual of Tests and Criteria.

Section 173.186

In § 173.186, in paragraph (e), we amended the gross weight for UN 4G outer packages authorized for the transportation of strike-anywhere matches, to be consistent with the UN Model Regulations by increasing the weight from 27 kg (60 pounds) to 30 kg (66 pounds).

Section 173.187

We revised § 173.187 to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This change eliminates the need for DOT Exemption ''DOT–E 11548.''

Sections 173.211, 173.212, and 173.213

We revised these sections to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This change removed the need for DOT Exemption ''DOT–E 11548.''

Section 173.219

We revised § 173.219 for consistency with the UN Model Regulations and the ICAO Technical Instructions. Included in the revision is an allowance for self-inflating life-saving appliances to contain cartridges, power devices of Division 1.4S, for purposes of the self-inflating mechanism. In addition, we provided an exception from regulation for life-saving appliances containing only carbon dioxide cylinders not exceeding 100 cm^3 capacity, provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg. Finally, the limitations currently found in Special Provision 143 are relocated to § 173.219 (see preamble discussion under Special Provision 143).

Section 173.220

Paragraph (b)(2) is amended to harmonize the requirements for transporting flammable gas powered vehicles by air with the requirements of Packing Instruction 900 of the ICAO Technical Instructions.

Section 173.224

Paragraph (b)(4) of this section is amended to include the new references for § 173.225. The section reference to § 173.225(e) for the authorization of bulk packagings is replaced with § 173.225(f) for IBCs and § 173.225(h) for other bulk packagings.

Section 173.225

This section is amended to update the Organic Peroxide Table and eliminate special provisions IB52 and T23 from § 172.102(c). The purpose of the change is to consolidate the packaging requirements for organic peroxides into one section and to have separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs. The changes are as follows:

Paragraph (a) is revised by adding paragraphs (b) and (b)(6), which state that bulk packagings may require a lower control temperature than those specified for non-bulk packagings and that an organic peroxide not identified in either the Organic Peroxide Table, Organic Peroxide IBC Table, or Organic Peroxide Portable Tank Table must be approved under § 173.128(c).

Paragraph (b) is revised to eliminate all IBC and other bulk packaging authorizations from column 6 of the Organic Peroxide Table. Various obsolete entries were also removed. The current paragraph (b), ''Organic Peroxide Table,'' is moved to paragraph (c) and the current paragraph (c), ''New organic peroxides, formulations and samples,'' is moved to paragraph (b).

The notes following the Organic Peroxide Table are changed as follows:

- Revise note 22 to indicate that ethylbenzene with greater than or equal to 25% of dilutant type A is acceptable.

• Revise note 23 to indicate that methyl isobutyl keytone with greater than or equal to 19% of dilutant type A is acceptable.

• Add a new note 29 to identify materials which are not included in the UN Model Regulations and note that a Competent Authority approval is required for international transportation.

• Remove Notes 9, 11, and 14 following the Organic Peroxide Table.

In addition, The Packing Method Table found in paragraph (d), is revised by replacing the 200 kg maximum quantity for solids and combination packagings listed in OP8 with a 400 kg maximum quantity. Note 2, following the table, is revised to allow 200 kg of solid material per box and up to 400 kg of material per authorized combination packaging. The note also indicates that the outer packaging must be a box (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and each inner packaging must be of plastics or fiber with a maximum net mass of 25 kg. Paragraph (d)(3) is clarified by revising the text to state that the maximum content acceptable for glass receptacles used as inner packagings of a combination packaging is 0.5 kg for solids or 0.5 L for liquids.

A new paragraph (e) is added to include the new ''Organic Peroxide IBC Table'' that replaces the current ''Table 2.—Organic Peroxide IBC Code (IB52)'' in § 172.102(c)(4). The new table is revised to add an organic peroxide, ''Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water.'' In addition, the new Organic Peroxide IBC Table identifies, by technical name, those organic peroxides authorized for transportation in the IBCs that are specifically listed in the table.

A new paragraph (f) is added to include the current IBC requirements contained in paragraph (e)(5) of this section. Paragraph (f) also includes requirements that are specific to organic peroxides packaged in IBCs.

A new paragraph (g) is added to include the new ''Organic Peroxide Portable Tank Table,'' that replaces the current ''Portable Tank Code T23'' found in § 172.102(c)(7)(iii). The new table is identical to the current table except that for UN 3109, in the entry for Pinanyl hydroperoxyde, 50% is replaced by 56% and all references to self-reactive materials are removed. In addition, the Organic Peroxide Portable Tank Table provides certain portable tank requirements and identifies, by technical name, those organic peroxides authorized for transportation in the bulk packagings listed in the new paragraph (h).

The current paragraph (e) is redesignated as paragraph (h). Paragraph (h) establishes requirements that are specific to organic peroxides packaged in certain bulk packagings. Additionally, the new ''Note to Paragraph (h)(3)(vi)'' is revised to include changes brought forth by petition for rulemaking P–1428. The petition proposed to amend the current paragraph (e)(3)(vi) and allow for a second but equally acceptable example of an emergency-relief device sizing method to be added to the HMR. We agreed with the petitioner and added a statement to the new paragraph (h)(3)(vi) indicating that an additional example of an emergency-relief device sizing method can be found in the ''American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2)'' as referenced in § 171.7(b).

The changes to this section altered the order of the paragraphs within this section; therefore, various citations were changed. Also, paragraphs referencing IB52 or TP23 are revised to indicate that those provisions no longer exist and the updated requirements are found in paragraph (e) and (g), respectively. A commenter requested that § 173.225 be revised to allow for increased industry flexibility, regulatory uniformity, and to better align with the UN Recommendations. We agree and have made the following revisions:

• Added wording to 173.225(a) to show that organic peroxides that are not identified in the organic peroxide table, but are in paragraph (b)(3) are not subject to the requirements of § 173.128.

• Removed Note 1 from both entries of tert-Butyl cumyl peroxide and Note 11 from Dicumyl peroxide.

• Removed the sentence ''The additional requirements in paragraph (h)(5)(i) and (h)(5)(ii) of this section also apply'' from § 173.225(f) and renumbered (f)(i) and (f)(ii) as (f)(1) and (f)(2), respectively.

• Revised the introductory text to Paragraph (h) to indicate that the bulk packagings that follow are for materials authorized for transport in a bulk packaging by Paragraph (h) and organic peroxides listed in the Organic Peroxide Portable Tank Table.

• Removed two occurrences of the term ''Type F'' from Paragraph (h)(3) to broaden the applicability of the provisions.

• Removed statement from § 173.225(h)(3)(xii) indicating that DOT Specification 57 portable tanks are not subject to the requirements of paragraphs (h)(3)(ii) and (h)(3)(iv) of this section.

Sections 173.226 and 173.227

We revised the packaging requirements of §§ 173.226 and 173.227 for materials poisonous by inhalation, Division 6.1, Packing Group I, Hazardous Zone A and Hazard Zone B. These amendments have: Reduced the hydrostatic test pressure of the inner drum in a drum-within-a-drum configuration authorized in § 173.226(b); standardized the minimum thickness requirements of the inner drums in the drum-within-a-drum configuration authorized in §§ 173.226(b) and 173.227(b); clarified the test requirements for inner packaging systems in § 173.226(b)(2)(iv); and in § 173.226(d) added a provision to authorize transportation of PIH materials in single packages when subjected to additional operational controls and approved by the Associate Administrator. Section 173.226(c)(2) is reformatted for ease of understanding. We removed an expired transitional date from paragraph (a) that allows the transport of welded cylinders filled before October 1, 2003 for the purpose of reprocessing or disposal of cylinders's content until December 31, 2003. One commenter recommended that we include a provision in § 173.227(b) to allow for the testing of the outer drum of a drum-in-drum package as either as a package intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids. We agree and have revised § 173.227(b) accordingly. Another commenter suggested that we increase the minimum thickness of a UN 1A1 drum in PIH service from .69 mm to 1.0 mm. Increasing the minimum thickness of a UN 1A1 drum in PIH service was not proposed in this rulemaking and inclusion of such a requirement is beyond the scope of this rulemaking. However, we are reviewing this request for consideration in a future rulemaking.

Section 173.249

Paragraph (c) is revised to be consistent with the current ''Bromine'' entry in the § 172.101 ''Hazardous Material Table'' that authorizes the use of a UN portable tank conforming to tank code T22. A commenter suggested that we include a provision authorizing the returning of a tank containing bromine residue. We agree that such a provision is necessary and have amended § 173.249 accordingly.

Sections 173.306 and 173.307

To add clarity to the HMR, the text currently found in § 173.306(i) is removed and replaced with the text

currently found in § 173.307(a)(5). Since § 173.306 is devoted exclusively to limited quantities of compressed gases, relocating § 173.307(a)(5) to § 173.306 makes the exception easier to find.

Section 173.313

A new § 173.313 is added to serve as the new location for the Portable Tank Code T50 Table. The table is renamed ''UN Portable Tank Table for Liquefied Compressed Gases.'' The table provides the maximum allowable working pressures, bottom opening requirements, pressure relief requirements and degree of filling requirements for liquefied compressed gases permitted for transport in portable tanks. The change relocates these packaging requirements to Part 173, which is a more appropriate location, and makes the special provisions less cumbersome. In addition, the new UN Portable Tank Table for Liquefied Compressed Gases is amended by revising the Column 3 heading to read ''Minimum design pressure (bar) * * *'' The values in column 3 are actually minimum values, however the title of the column is misleading because it uses the term ''Maximum allowable working pressure (bar) * * *''

Section 173.315

In paragraph (a), the reference to ''portable tank provision T50 in § 172.102'' is revised to read ''the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.''

Section 173.323

After further considering the proposed changes to the packaging authorizations for ethylene oxide in § 173.323, we noted that the total quantity per package of ethylene oxide authorized for transport when glass inner receptacles are used was proposed to be increased from 100 grams to 2.5 kg. Due to the extremely flammable and explosive properties of ethylene oxide and the fragile properties of glass, after further consideration we have chosen not to adopt the 2.5 kg outer package limit found in the UN Recommendations and to retain our current outer package limit of 100 grams. The total quantity per package when metal inner receptacles are used will remain unchanged from the proposed 2.5 kg. In this rule, paragraphs (b)(1)–(b)(3) are revised and consolidated for consistency with current international requirements for the transportation of ethylene oxide in combination packagings. Paragraphs (b)(1)–(b)(3) provide the current authorizations for glass, aluminum, and metal receptacles respectively. Amendments to this section include (1) removing the HMR limitation of 12 inner receptacles per outer package currently applied to aluminum and other metal receptacles, (2) removing the overpack restriction in (b)(2) which specifies a maximum of 10 boxes per overpack, (3) requiring a hot water bath test for all inner receptacles, (4) removing the pressure relief device and burst pressure requirements currently applied to metal receptacles, (5) applying the same outer package authorizations consistently to all inner packaging types and allowing any outer package authorized in § 172.201(b), and (6) requiring all inner packagings to be suitably cushioned (the top and bottom pad and perimeter liner requirement currently only applied to outer packages containing aluminum inner packagings is removed). Though we are eliminating the option to utilize certain packaging authorizations for glass and aluminum inner packagings, we believe that this change will have little or no economic impact on the ethylene oxide industry because of the amount of materials that are transported in international commerce. 3M Package Engineering requested that we reduce the maximum quantity of ethylene oxide permitted in any metal inner packaging from 340 g (12 ounces) to 200 g (7 ounces). They stated that such a change would more adequately align the HMR with international standards. We agree that such a change would align the HMR with international requirements. However, allowing a metal inner packaging to contain a maximum quantity of 340 g (12 ounces) does not limit compliance with international requirements. In addition, we cannot adopt the 200 g (7 ounces) limitation in this rulemaking because such a change would be more restrictive then the requirements we proposed. We may consider adopting the 200 g (7 ounces) limitation in a future rulemaking.

Part 175

Section 175.10

Consistent with an amendment to the ICAO TI, we are requiring that aerosol cans that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means. In addition, the ICAO Dangerous Goods Panel will convene a series of working groups to develop recommendations for consideration during the 20th session of the Dangerous Goods Panel to further review this issue. These recommendations may lead to additional amendments to the ICAO TI. Finally, we note that non-flammable gases (*e.g.*, nitrogen) other than carbon dioxide are used for the operation of mechanical limbs. Consistent with an amendment to the ICAO TI, we are proposing to provide an exception from the HMR for mechanical limbs that are powered by any Division 2.2 gas. One commenter recommended that the release device requirements added to § 175.10 also be incorporated into Part 173. Specifically, they requested that aerosol cans that are transported in commerce be protected by a cap or other suitable means to prevent inadvertent release. They indicated that this change should be coordinated with the Federal Aviation Administration (FAA). We disagree. Section 173.24(b)(1) states that each package used for the shipment of hazardous materials must be constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incident to transportation there will be no identifiable release of hazardous materials to the environment. We feel this section adequately addresses the commenter's concerns, and allows shippers the flexibility to properly protect aerosol cans.

Section 175.85

In § 175.85, a new paragraph (j) is added to specify the cargo location of a package bearing the ''KEEP AWAY FROM HEAT'' handling marking.

Part 176

Section 176.2

Certain definitions are revised. The definitions for ''Explosive article'' and ''Explosive substance'' are revised to remove an incorrect reference. The definition for ''Magazine'' is revised to include a compartment in the vessel. The definition for ''Magazine'' is also revised to specify vessel storage location and accessibility. The term ''Transport unit'' is revised to read ''Cargo transport unit'' to be consistent with Amendment 32 of the IMDG Code. In addition, in the definition ''In containers or the like'' the term ''transport unit'' is removed and the term ''cargo transport unit'' is added in its place.

Section 176.27

In this section, the words ''transport unit'' are replaced with the words ''transport vehicle'' in each place they appear to be consistent with the removal of the term ''transport unit'' from the definitions in § 176.2.

Section 176.63

Paragraph (e) is revised to align the definition of ''Closed cargo transport unit'' to be consistent with the

definition in Amendment 32 of the IMDG Code.

Section 176.76

Paragraph (i) is revised to clarify that for container ships, a distance equivalent to one container space athwartships (*i.e.*, in the direction of the breadth of the vessel) away from possible sources of ignition applied in any direction satisfies the requirement that a cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck be stowed ''away from'' possible ignition sources. This is consistent with Amendment 32 of the IMDG Code. In addition, in paragraphs (h) and (i), the words ''transport unit'' are removed and replaced with the words ''cargo transport unit'' in each place they appear to be consistent with Amendment 32 of the IMDG.

Section 176.83

Paragraph (l) is revised to correct an error pertaining to the Segregation Table that sets forth the general requirements for segregation of containers on board hatchless container vessels. In addition, throughout the section the words ''transport units'' are removed and replaced with the words ''cargo transport units'' in each place they appear to be consistent with Amendment 32 of the IMDG. A new paragraph (m) is added to specify the provisions for segregation groups.

Section 176.84

Paragraph (a) is revised to specify the various chemical groups listed in the segregation table. In the paragraph (b) Table of Provisions, we added eleven new provisions (codes) for certain stowage and segregation requirements for hazardous materials that are transported by vessel. In addition, in paragraph (c)(2) Provisions for the stowage of Class 1 (explosive) materials, we revised three notes. The terms ''separated from'' and ''away from'' in the codes are defined in § 176.83 of the HMR.

Code 133 is added to the entries ''Barium chlorate solution,'' UN3405; ''Barium perchlorate solution,'' UN3406; and ''Chlorate and magnesium chloride mixture solution,'' UN3407, that requires the material to be stowed ''separated from'' sulfur.

Code 134 is added to the entry ''Aluminum alkyl halides, solid,'' UN3461, that requires the material to be stowed ''separated from'' UN2716.

Code 135 is added to the entries ''Methylamine, aqueous solution,'' UN1235 and ''Trimethylamine, aqueous solutions,'' UN1297, that requires the material to be stowed ''separated from'' mercury and mercury compounds.

Code 136 is added to the entry ''Tributylphosphane,'' UN3254, that requires the material to be stowed ''separated from'' carbon tetrachloride.

Code 137 is added to the entries ''Arsenic compounds, liquid, n.o.s.,'' UN1556 and ''Arsenic compounds, solid, n.o.s.,'' UN1557, that requires arsenic sulphides to be stowed ''separated from'' acids.

Code 138 is added to the entries for UN1448; UN1456; UN1479; UN1482; UN1490; UN1503; UN1515; UN3085; UN3087; UN3098; UN3099; UN3139; and UN3214, that requires the material to be stowed ''separated from'' peroxides.

Code 139 is added to the entry ''1, 4-Butynediol,'' UN2716, that requires the material to be stowed ''separated from'' mercury salts.

Code 140 is added to the entry ''1, 4-Butynediol,'' UN2716, that requires the material to be stowed ''separated from'' UN3052 and UN3461.

Code 141 is added to the entries for UN1732; UN1755; UN1806; UN1908; UN2433; UN2859; and UN2861, that requires the material to be stowed ''away from'' radioactive materials.

Code 142 is added to the entries for UN1748; UN2208; and UN2880, that requires packages in cargo transport units to be stowed so as to allow for adequate air circulation throughout the cargo.

Code 143 is added to the entry for Organometallic Substance, Liquid, Pyrophoric, UN3392, prohibiting transportation on any vessel carrying explosives (except explosives in Division 1.4, compatibility group S.

Note 19E is revised to specify that materials under entries NA0331; UN0004; UN0222; UN0241; and UN0402 must be stowed ''away from'' explosives containing chlorates or perchlorates.

Note 22E is revised to specify that materials under the entry ''Explosive, blasting, type C,'' must be stowed ''away from'' ammonium compounds and explosives containing ammonium compounds or salts.

Note 23E is revised to specify that materials under entries UN0247; UN0395; UN0396; UN0397; UN0398; UN0399; UN0400; UN0449; and UN0450 must be ''separated from'' Division 1.4 and ''separated longitudinally by an intervening complete compartment or hold from'' Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.

A commenter questioned how adequate air circulation was achieved in a cargo transport unit. In addition, the commenter stated that it fails to understand why air circulation is necessary in a closed cargo transport unit, as indicated by Stowage Provision 142. Stowage Provision 142 indicates that packages in cargo transport units must be stowed so as to allow for adequate air circulation throughout the cargo. We feel cargo transport units that are properly loaded will allow for the adequate circulation of air by natural means so as to safeguard against excessive heat buildup within the cargo.

Section 176.116

In paragraph (c), the words ''transport units'' are revised to read ''cargo transport units.'' In addition, a new paragraph (f) is added to specify the under deck stowage requirements of Class 1 (explosive) materials allocated stowage categories 09 and 10.

Sections 176.122 and 176.124

Sections 176.122 and 176.124 are removed and reserved.

Section 176.128

In § 176.128, the section heading and section are revised.

Section 176.132

Section 176.132 is removed and reserved.

Section 176.133

Section 176.133 is revised to clarify the construction and stowage location requirements for magazine stowage type C.

Section 176.136

Section 176.136 is revised to clarify the special stowage requirements of Class 1 (explosive) materials. In addition, minor editorial revisions are made.

Section 176.138

Paragraph (a) is removed and reserved to be consistent with Amendment 32 of the IMDG Code. This paragraph currently requires Class 1 (explosive) material that is stowed on deck to be carried as close to the vessel's centerline as practicable.(See also change to § 176.170.)

Section 176.142

Paragraph (a) is revised to remove ''Pyrophoric organometallic compound, water-reactive, n.o.s.'' from the list of liquid hazardous materials of extreme flammability that may not be transported in a vessel carrying Class 1 (explosive) materials. Additionally, we added to the above list the following new liquid entries:

• ''Organometallic substance, liquid, pyrophoric, UN3392''
• ''Organometallic substance, liquid, pyrophoric, water-reactive, UN3394''

These changes are consistent with Amendment 32 of the IMDG Code.

Section 176.144

In this section, the words ''transport unit'' are replaced with the words ''cargo transport unit'' in each place they appear to be consistent with the definition in Amendment 32 of the IMDG Code. Additional notes are added to Table 176.144(a)—''Authorized Mixed Stowage For Explosives'' to address additional exceptions for mixed stowage of Class 1 materials.

Section 176.146

In § 176.146, in paragraph (d)(1), the wording ''transport units'' is revised to read ''cargo transport units.''

Section 176.168

In § 176.168, in the title before the section heading, the wording ''TRANSPORT UNITS AND SHIPBORNE BARGES'' are revised to read ''CARGO TRANSPORT UNITS AND SHIPBORNE BARGES.''

Section 176.170

A new paragraph (b) is added to prohibit freight containers loaded with Class 1 (explosive) materials, except for explosives in Division 1.4, from being stowed in the outermost row of containers. This change is consistent with Amendment 32 of the IMDG Code.

Section 176.174

Paragraphs (a) and (b) are revised to remove the references to portable magazines. This change is consistent with Amendment 32 of the IMDG Code.

Section 176.600

In § 176.600, in paragraph (a), the wording ''closed transport units'' is revised to read ''closed cargo transport units.''

Part 178

Section 178.274

Paragraph (f)(v) is revised to more clearly specify the rated flow capacity marking required to be placed on every UN portable tank's pressure relief device.

Section 178.275

Paragraph (i)(2) is revised to more clearly specify the combined delivery capacity of UN portable tank's pressure relief systems.

Section 178.276

In paragraph (a)(4)(ii)(A), the reference to ''portable tank special provision T50'' is revised to read ''the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.'' In addition, paragraph (d), the reference to ''portable tank special provision T50 in § 172.102(c)(7)'' is revised to read ''UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.'' Finally, in paragraph (e)(3), the reference to ''portable tank special provision T50 in § 172.102'' is revised to read ''the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.''

Section 178.602

Paragraph (b) is revised to clarify the requirements applicable to filling packaging other than bags in preparation for testing.

Section 178.603

Paragraph (c) is revised to add a definition indicating that a minimum specific gravity for solutions of water and anti-freeze is 0.95 for testing at 18 °C (0 °F) or lower. Additionally, in paragraph (e), we specify the drop test height for liquids in single packagings and for inner packagings of combination packagings, when the test is performed in water.

Section 178.810

Paragraph (b)(3) is revised to specify that water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at −18 °C (0 °F) or lower are acceptable test liquids for use when conducting IBC drop tests. This is consistent with our amendment to § 178.603(c)(1) regarding the testing of non-bulk packages. In addition, we added a sentence to clarify that when conditioning is required by § 178.810(b), the conditioning specified in § 178.802 (which requires a higher temperature) does not apply.We received a comment from the Reusable Industrial Packaging Association (RIPA) concerning this revision. RIPA believes that RSPA intended to clarify that water/antifreeze solutions with a minimum specific gravity of 0.95 are equivalent for testing purposes to IBCs containing only water, thereby eliminating the need to adjust the drop height of test units. RIPA stated that § 178.810(b)(3) should be revised to indicate that this solution may be considered equivalent to water for testing purposes. We agree and have revised the section accordingly.

Part 180

Section 180.350

Paragraph (c) is revised to expand the definition of routine maintenance of IBCs to include flexible, plastic and textile IBCs.

Section 180.352

Paragraph (d)(1)(iv) is revised to require persons other than the owner of metal, rigid plastics, and composite IBCs to mark the IBC indicating routine maintenance has been performed when such maintenance is performed. A new paragraph (d)(1)(v) is added to this section. This paragraph states that retests and inspections performed under paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the tests and inspections required by paragraph (b) of this section. This addition incorporates changes made to the 12th revised edition of the Transport of Dangerous Goods Model Regulations into the HMR. Three commenters requested that we revise § 180.352 to distinguish requirements applicable to repair and routine maintenance of IBCs. We agree and have revised § 180.352 creating a new paragraph entitled, ''Requirements applicable to routine maintenance of IBCs.''

V. Regulatory Analyses and Notices

A. Statutory/Legal Authority for This Rulemaking

This final rule is published under the following statutory authorities:

1. 49 U.S.C. 5103(b) authorizes the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. This final rule amends regulations to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. To this end, as discussed in detail earlier in this preamble, the final rule amends the HMR to more fully align it with the biennial updates of the UN Recommendations, the IMDG Code and the ICAO Technical Instructions to facilitate the transport of hazardous materials in international commerce.

2. 49 U.S.C. 5120(b) authorizes the Secretary of Transportation to ensure that, to the extent practicable, regulations governing the transportation of hazardous materials in commerce are consistent with standards adopted by international authorities. This final rule amends the HMR to maintain alignment with international standards by incorporating various amendments to facilitate the transport of hazardous material in international commerce. To this end, as discussed in detail earlier in this preamble, the final rule incorporates changes into the HMR

based on the Thirteenth Revised Edition of the UN Recommendation, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. The continually increasing amount of hazardous materials transported in international commerce warrants the harmonization of domestic and international requirements to the greatest extent possible. Harmonization serves to facilitate international transportation; at the same time, harmonization ensures the safety of people, property, and the environment by reducing the potential for confusion and misunderstanding that could result if shippers and transporters were required to comply with two or more conflicting sets of regulatory requirements. While the intent of this rulemaking is to align the HMR with international standards, we review and consider each amendment on its own merit based on its overall impact on transportation safety and the economic implications associated with its adoption into the HMR. Our goal is to harmonize without sacrificing the current HMR level of safety and without imposing undue burdens on the regulated public. Thus, as discussed in detail earlier in this preamble, there are several instances where we elected not to adopt a specific provision of the UN Recommendations, the IMDG Code or the ICAO Technical Instructions; further, we are maintaining a number of current exceptions for domestic transportation that should minimize the compliance burden on the regulated community.

B. Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by the Office of Management and Budget. This final rule is not considered a significant rule under the Regulatory Policies and Procedures of the Department of Transportation [44 FR 11034]. Benefits resulting from the adoption of the amendments in this final rule include enhanced transportation safety resulting from the consistency of domestic and international hazard communications and continued access to foreign markets by domestic shippers of hazardous materials. This final rule applies to offerors and carriers of hazardous materials, such as chemical manufacturers, chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, radiopharmaceutical companies, and training companies.

The majority of amendments in this final rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America. For example, cost savings will be realized by shippers and carriers as a result of the following:

—Eliminating the air eligibility marking requirement.
—Amendments allowing numerous Class 3, PG II materials with a Class 8 sub-risk and others to be transported as a limited quantity.
—Allowing cylinders to be used for many more substances than currently authorized.
—Allowing salvage packagings to be used for non-conforming packages; and generally minimizing differences between U.S. and international hazardous materials transportation regulations.

We are authorizing a delayed effective date and a one-year transition period to allow for training of employees and to ease any burden on entities affected by the amendments. The total net increase in costs to businesses in implementing this rulemaking is considered to be minimal and a regulatory evaluation is available for review in the Docket.

C. Executive Order 13132

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 (''Federalism''). This final rule preempts State, local and Indian tribe requirements but does not propose any regulation that has substantial direct effects on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

The Federal hazardous material transportation law, 49 U.S.C. 5101–5127, contains an express preemption provision (49 U.S.C. 5125(b)) that preempts State, local, and Indian tribe requirements on certain covered subjects. Covered subjects are:

(1) The designation, description, and classification of hazardous materials;

(2) The packing, repacking, handling, labeling, marking, and placarding of hazardous materials;

(3) The preparation, execution, and use of shipping documents related to hazardous materials and requirements related to the number, contents, and placement of those documents;

(4) The written notification, recording, and reporting of the unintentional release in transportation of hazardous; and

(5) The design, manufacture, fabrication, marking, maintenance, recondition, repair, or testing of a packaging or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This final rule addresses covered subject items (1), (2), (3), and (5) above and preempts State, local, and Indian tribe requirements not meeting the ''substantively the same'' standard. This final rule is necessary to incorporate changes adopted in international standards, effective January 1, 2005. If the changes in this final rule are not adopted in the HMR, U.S. companies, including numerous small entities competing in foreign markets, are at an economic disadvantage. These companies are forced to comply with a dual system of regulations. The changes in this rulemaking are intended to avoid this result. Federal hazardous materials transportation law provides at section 5125(b)(2) that, if DOT issues a regulation concerning any of the covered subjects, DOT must determine and publish in the **Federal Register** the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. The effective date of Federal preemption is March 21, 2005.

D. Executive Order 13175

This final rule was analyzed in accordance with the principles and criteria contained in Executive Order 13175 (''Consultation and Coordination with Indian Tribal Governments''). Because this final rule does not have tribal implications, does not impose substantial direct compliance costs, and is required by statute, the funding and consultation requirements of Executive Order 13175 do not apply.

E. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires an agency to review regulations to assess their impact on small entities, unless the agency determines that a rule is not expected to have a significant impact on a substantial number of small entities. This final rule facilitates the transportation of hazardous materials in international commerce by providing consistency with international standards. This final rule applies to offerors and carriers of hazardous materials, some of whom are small entities, such as chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, and

training companies. As discussed above, under *Executive Order 12866*, the majority of amendments in this final rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America.

Many companies will realize economic benefits as a result of these amendments. Additionally, the changes brought forth by this final rule will relive U.S. companies, including small entities competing in foreign markets, from the burden of complying with a dual system of regulations. Therefore, I certify that these amendments will not, if promulgated, have a significant economic impact on a substantial number of small entities.

This final rule has been developed in accordance with Executive Order 13272 (''Proper Consideration of Small Entities in Agency Rulemaking'') and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act to ensure that potential impacts of draft rules on small entities are properly considered.

F. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. Section 1320.8(d), Title 5, Code of Federal Regulations requires that RSPA provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. RSPA currently has two approved information collections affecting this final rule: OMB Control Number 2137–0557, ''Approvals for Hazardous Materials'' with 25,605 burden hours and $562,837.40 burden costs; and OMB Control Number 2137–0613, ''Subsidiary Hazard Class & Number/Type of Packagings'' with 63,309 burden hours and $216,705 burden costs.

There are minor editorial changes under this rule. However, there is no net increase in burden for OMB Control Number 2137–0557 or OMB Control Number 2137–0613. We estimate that the total information collection and recordkeeping burden as follows:

''Approvals for Hazardous Materials''

OMB Number 2137–0557:

Total Annual Number of Respondents: 3,523.

Total Annual Responses: 3,874.8.

Total Annual Burden Hours: 25,605.

Total Annual Burden Cost: $562,837.40.

''Subsidiary Hazard Class & Number/Type of Packagings''

OMB Number 2137–0613:

Total Annual Number of Respondents: 250,000.

Total Annual Responses: 6,337,500.

Total Annual Burden Hours: 17,604.

Total Annual Burden Cost: $216,705.

Total First Year Burden Hours: 45,705.

Total First Year Burden Cost: $1,115,992.

Requests for a copy of this information collection should be directed to Deborah Boothe or T. Glenn Foster, Office of Hazardous Materials Standards (DHM–10), Research and Special Programs Administration, Room 8422, 400 Seventh Street, SW., Washington, DC 20590–0001, telephone (202) 366–8553.

G. Regulatory Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

H. Unfunded Mandates Reform Act

This final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of $120.7 million or more to either State, local or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

I. Environmental Assessment

The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to consider the consequences of major Federal actions and prepare a detailed statement on actions significantly affecting the quality of the human environment. We developed an assessment to determine the effects of these revisions on the environment and whether a more comprehensive environmental impact statement may be required. Our findings conclude that there are no significant environmental impacts associated with this final rule. Consistency in the regulations for the transportation of hazardous materials aids in the shipper's understanding of what is required and permits shippers to more easily comply with safety regulations and avoid the potential for environmental damage or contamination. For interested parties, an environmental assessment is available in the public docket.

J. Privacy Act

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov.*

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Education, Hazardous materials transportation, Hazardous waste, Incorporation by reference, Labeling, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Incorporation by reference, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 175

Air carriers, Hazardous materials transportation, Incorporation by reference, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 176

Hazardous materials transportation, Incorporation by reference, Maritime carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Incorporation by reference, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Railroad safety, Reporting and recordkeeping requirements.

■ In consideration of the foregoing, 49 CFR Chapter I is amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

■ 1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101–410 section 4 (28 U.S.C. 2461 note); Pub. L. 104–134 section 31001.

■ 2. In § 171.7, in the paragraph (a)(3) table, the following changes are made:

■ a. Under the entry ''International Civil Aviation Organization (ICAO),'' the existing entry is revised;

■ b. Under the entry ''International Maritime Organization (IMO),'' the entry ''International Maritime Dangerous Goods (IMDG) Code, 2002 Consolidated Edition, as amended by Amendment 31 (English edition)'' is removed and one entry is added in its place;

■ c. Under the entry ''United Nations,'' the entry ''UN Recommendations on the Transport of Dangerous Goods, Twelfth Revised Edition (2001)'' is revised;

■ d. Under the entry ''United Nations,'' the entry ''UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Third Revised Edition (1999)'' is revised; and

■ e. In paragraph (b), a new entry ''American Institute of Chemical Engineers (AIChE),'' 3 Park Avenue New York, NY 10016–5991, Process Safety Progress Journal, Vol. 21, No. 2, ''Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology'' is added in alphabetical order.

The revisions and additions read as follows:

§ 171.7 Reference material.

(a) * * *

(3) *Table of material incorporated by reference.* * * *

Source and name of material	49 CFR reference
* * * * * *	*
International Civil Aviation Organization (ICAO),	
* * * * * *	*
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), 2005–2006 Edition	171.8; 171.11; 172.202; 172.401; 172.512; 172.602; 173.320; 175.33; 178.3.
International Maritime Organization (IMO),	
* * * * * *	*
International Maritime Dangerous Goods Code (IMDG Code), 2004 Edition, Incorporating Amendment 32–04 (English Edition), Volumes 1 and 2	171.12; 172.202; 172.401; 172.502; 172.602; 173.21; 176.2; 176.5; 176.11; 176.27; 176.30; 178.3.
* * * * * *	*
United Nations,	
* * * * * *	*
UN Recommendations on the Transport of Dangerous Goods, Thirteenth Revised Edition (2003), Volumes I and II	171.12; 172.202; 172.401; 172.502; 173.22; 173.24; 173.24b; 173.197; Part 173, appendix H; 178.274; 178.801.
UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fourth Revised Edition, (2003)	172.102; 173.21; 173.56; 173.57; 173.58; 173.115; 173.124; 173.125; 173.127; 173.128; 173.185.
* * * * * *	*

(b) *List of informational materials not requiring incorporation by reference.*
* * *

Source and name of material	49 CFR reference
* * * * * *	*
American Institute of Chemical Engineers (AIChE),	

Source and name of material	49 CFR reference
3 Park Avenue New York, NY 10016–5991 Process Safety Progress Journal, Vol. 21, No. 2 Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology	Note to § 173.225(h)(3)(vi).
* * * * * * *	

■ 3. In § 171.8, the definition for ''Salvage packaging'' is revised to read as follows:

§ 171.8 Definitions and abbreviations.

* * * * *

Salvage packaging means a special packaging conforming to § 173.3 of this subchapter into which damaged, defective, leaking, or non-conforming hazardous materials packages, or hazardous materials that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

* * * * *

■ 4. In § 171.11, paragraphs (d)(15) and (d)(17) are revised to read as follows:

§ 171.11 Use of ICAO Technical Instructions.

* * * * *

(d) * * *

(15) A chemical oxygen generator, including when fitted in protective breathing equipment or other apparatus, is forbidden for transportation aboard a passenger-carrying aircraft and must be approved, classed, described and packaged in accordance with the requirements of this subchapter for transportation on cargo-only aircraft. A chemical oxygen generator that has been used or spent is also forbidden for transportation on a passenger aircraft and cargo aircraft only.

* * * * *

(17) A self-reactive substance that is not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

■ 5. In § 171.12, paragraph (b)(20) is revised to read as follows:

§ 171.12 Import and export shipments.

* * * * *

(b) * * *

(20) A self-reactive substance that is not identified by technical name in the Self-Reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

■ 6. In § 171.12a, paragraphs (a), (b)(9), and (b)(18) are revised to read as follows:

§ 171.12a Canadian shipments and packagings.

(a) *Scope and applicability.* This section sets forth provisions for the transportation by rail or highway of shipments of hazardous materials which conform to the regulations of the Government of Canada but which may differ from the requirements of this subchapter with regard to hazard communication, classification or packaging. Except as provided in paragraph (b)(5)(iv) of this section, the provisions apply only to shipments which originate in Canada and either terminate in the U.S. or transit the U.S. to a Canadian or foreign destination, and to the return to Canada of bulk packagings that meet the requirements of a DOT or UN Specification and other bulk packagings containing only residues of hazardous materials that were originally imported into the U.S. Reciprocal provisions, applicable to exports from the U.S., appear in the regulations of the Government of Canada.

(b) * * *

(9) For hazardous waste as defined in this subchapter—

(i) The word ''Waste'' must precede the proper shipping name on shipping papers and packages; and

(ii) The requirements of § 172.204 of this subchapter with respect to the shipper's certification and § 172.205 of this subchapter with respect to hazardous waste manifests are applicable;

* * * * *

(18) A self-reactive substance that is not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

■ 7. In § 171.14, paragraphs (d) introductory text, (d)(1), and (d)(2) are revised to read as follows:

§ 171.14 Transitional provisions for implementing certain requirements.

* * * * *

(d) A final rule published in the **Federal Register** on December 20, 2004, effective January 1, 2005, resulted in revisions to this subchapter. During the transition period, until January 1, 2006, as provided in paragraph (d)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on December 31, 2004, or the requirements published in the December 20, 2004, final rule.

(1) *Transition dates.* The effective date of the final rule published on December 20, 2004, is January 1, 2005. A delayed compliance date of January 1, 2006 is authorized. On and after January 1, 2006, all applicable regulatory requirements adopted in the final rule in effect on January 1, 2005 must be met.

(2) *Intermixing old and new requirements.* Marking, labeling, placarding, and shipping paper descriptions must conform to either the old requirements of this subchapter in effect on December 31, 2004, or the new requirements of this subchapter in the final rule without intermixing communication elements, except that intermixing is permitted, during the applicable transition period, for packaging, hazard communication, and handling provisions, as follows:

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

■ 8. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 9. In § 172.101, the following amendments are made:
■ a. Paragraph (c)(11) is revised;
■ b. Paragraph (d)(4) is revised;
■ c. Paragraph (i)(3) is revised;
■ d. Hazardous Materials Table is revised as set forth below:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

(c) * * *

(11) Except for a material subject to or prohibited by § 173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper's tentative determination according to:

(i) Defining criteria in this subchapter;

(ii) The hazard precedence prescribed in § 173.2a of this subchapter;

(iii) The shipper's knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word ''Sample'' already appears in the proper shipping name, the word ''Sample'' must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a ''G'' in Column (1) of the § 172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

Note to Paragraph (c)(11): For the transportation of self-reactive, organic peroxide and explosive samples, see §§ 173.224(c)(3), 173.225(b)(2) and 173.56(d) of this subchapter, respectively.

* * * * *

(d) * * *

(4) When an entry in this column reads ''Comb liq'', the material is assigned to the hazard class ''Combustible liquid.'' Additionally, each reference to a Class 3 material is modified to read ''Combustible liquid'' when that material is reclassified in accordance with § 173.150 (e) or (f) of this subchapter or has a flash point above 60.5 °C (141 °F) but below 93 °C (200 °F).

* * * * *

(i) * * *

(3) *Bulk packaging.* Column 8C specifies the section in part 173 of this subchapter that prescribes packaging requirements for bulk packagings, subject to the limitations, requirements and additional authorizations of Column 7. A ''None'' in this column means bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter ''A'' or ''W'' and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

* * * * *

BILLING CODE 4910–60–P

§ 172.101 HAZARDOUS MATERIALS TABLE

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Accellerene, see p-Nitrosodimethylaniline												
	Accumulators, electric, see Batteries, wet *etc*												
	Accumulators, pressurized, pneumatic or hydraulic (containing non-flamable gas), see Articles pressurized, pneumatic *or* hydraulic (containing non-flamable gas).												
	Acetal	3	UN1088	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Acetaldehyde	3	UN1089	I	3	A3, B16, T11, TP2, TP7	None	201	243	Forbidden	30 L	E	
A	Acetaldehyde ammonia	9	UN1841	III	9	IB8, IP3, IP7, T1, TP33	155	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Acetic acid, glacial *or* Acetic acid solution, *with more than 80 percent acid, by mass*	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	
	Acetic acid solution, *not less than 50 percent but not more than 80 percent acid, by mass*	8	UN2790	II	8	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
	Acetic acid solution, *with more than 10 percent and less than 50 percent acid, by mass*	8	UN2790	III	8	IB3, T4, TP1	154	203	242	5 L	60 L	A	
	Acetic anhydride	8	UN1715	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	2, B9, B14, B32, B76, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	25, 40, 52, 53
	Acetone oils	3	UN1091	II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Acetonitrile	3	UN1648	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	B	40
	Acetyl acetone peroxide with more than 9 percent by mass active oxygen	Forbidden											
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solution	Forbidden											
	Acetyl bromide	8	UN1716	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40
	Acetyl chloride	3	UN1717	II	3, 8	A3, A6, A7, IB1, N34, T8, TP2, TP12	150	202	243	1 L	5 L	B	40
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water.	Forbidden											
	Acetyl iodide	8	UN1898	II	8	B2, IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
	Acetyl methyl carbinol	3	UN2621	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Acetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Acetylene, dissolved	2.1	UN1001		2.1		None	303	None	Forbidden	15 kg	D	25, 40, 57
	Acetylene (liquefied)	Forbidden											
	Acetylene silver nitrate	Forbidden											
	Acetylene tetrabromide, see Tetrabromoethane												
	Acid butyl phosphate, see Butyl acid phosphate												
	Acid, sludge, *see* Sludge acid												
	Acridine	6.1	UN2713	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Acrolein dimer, stabilized	3	UN2607	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Acrolein, stabilized	6.1	UN1092	I	6.1, 3	1, B9, B14, B30, B42, B72, B77, T22, TP2, TP7, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Acrylamide, solid	6.1	UN2074	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	12
	Acrylamide solution	6.1	UN3426	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
	Acrylic acid, stabilized	8	UN2218	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	C	25, 40
	Acrylonitrile, stabilized	3	UN1093	I	3, 6.1	B9, T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Actuating cartridge, explosive, see Cartridges, power device												
	Adhesives, *containing a flammable liquid*	3	UN1133	I	3	B42, T11, TP1, TP8, TP27	150	201	143	1 L	30 L	B	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	

	.....	.....		III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	.....
	Adiponitrile	6.1	UN2205	III	6.1	IB3, T3, TP1	153	203	241	60 L	220 L	A	.....
	Aerosols, *corrosive, Packing Group II or III, (each not exceeding 1 L capacity)*	2.2	UN1950	.....	2.2, 8	153, A34	306	None	None	75 kg	150 kg	A	48, 87, 126
	Aerosols, *flammable, (each not exceeding 1 L capacity)*	2.1	UN1950	.....	2.1	153, N82	306	None	None	75 kg	150 kg	A	48, 87, 126
	Aerosols, flammable, n.o.s. (*engine starting fluid) (each not exceeding 1 L capacity)*	2.1	UN1950	.....	2.1	153, N82	306	304	None	Forbidden	150 kg	A	48, 87, 126
	Aerosols, *non-flammable, (each not exceeding 1 L capacity)*	2.2	UN1950	.....	2.2	153	306	None	None	75 kg	150 kg	A	48, 87, 126
	Aerosols, *poison, each not exceeding 1 L capacity*	2.2	UN1950	.....	2.2, 6.1.	153	306	None	None	Forbidden	Forbidden	A	48, 87, 126
I	Air bag inflators, *or* Air bag modules, *or* Seat-belt pretensioners.	1.4G	UN0503	II	1.4G ..	161	None	62	None	Forbidden	75 kg	02	.....
	Air bag inflators, *or* Air bag modules, *or* Seat-belt pretensioners.	9	UN3268	III	9	160	166	166	166	25 kg	100 kg	A	.....
	Air, compressed	2.2	UN1002	.....	2.2	78	306	302	302	75 kg	150 kg	A	.....
	Air, refrigerated liquid, *(cryogenic liquid)*	2.2	UN1003	.....	2.2, 5.1.	T75, TP5, TP22	320	316	318, 319.	Forbidden	150 kg	D	51
	Air, refrigerated liquid, *(cryogenic liquid) non-pressurized*	2.2	UN1003	.....	2.2, 5.1.	T75, TP5, TP22	320	316	318, 319.	Forbidden	Forbidden	D	51
	Aircraft engines (including turbines), see Engines, internal combustion	.....			.....		.....	.....	.....	.....	.....		.....
	Aircraft evacuation slides, see Life saving appliances *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Aircraft hydraulic power unit fuel tank *(containing a mixture of anhydrous hydrazine and monomethyl hydrazine) (M86 fuel).*	3	UN3165	I	3, 6.1, 8.		None	172	None	Forbidden	42 L	E	.....
	Aircraft survival kits, see Life saving appliances *etc*	.....			.....		.....	.....	.....	.....	.....		.....
G	Alcoholates solution, n.o.s., *in alcohol*	3	UN3274	II	3, 8	IB2	150	202	243	1 L	5 L	B	.....
	Alcoholic beverages	3	UN3065	II	3	24, 149, B1, IB2, T4, TP1	150	202	242	5 L	60 L	A	.....
	.....	.....		III	3	24, B1, IB3, N11, T2, TP1	150	203	242	60 L	220 L	A	.....
	Alcohols, n.o.s.	3	UN1987	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	.....
	.....	.....		II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
G	Alcohols, flammable, toxic, n.o.s.	3	UN1986	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
	.....	.....		II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B	40
	.....	.....		III	3, 6.1	B1, IB3, T7, TP1, TP28	None	203	242	60 L	220 L	A	.....
	Aldehydes, n.o.s.	3	UN1989	I	3	T11, TP1, TP27	None	201	243	1 L	30 L	E	.....
	.....	.....		II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
G	Aldehydes, flammable, toxic, n.o.s.	3	UN1988	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
	.....	.....		II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B	40
	.....	.....		III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	.....
	Aldol	6.1	UN2839	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12
G	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	UN3206	II	4.2, 8	64, A7, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	.....
	.....	.....		III	4.2, 8	64, A7, IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	B	.....
	Alkali metal alloys, liquid, n.o.s.	4.3	UN1421	I	4.3	A2, A3, A7, B48, N34	None	201	244	Forbidden	1 L	D	52
	Alkali metal amalgam, liquid	4.3	UN1389	I	4.3	A2, A3, A7, N34	None	201	244	Forbidden	1 L	D	40, 52
	Alkali metal amalgam, solid	4.3	UN3401	I	4.3	IB4, IP1, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D	52
	Alkali metal amides	4.3	UN1390	II	4.3	A6, A7, A8, A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	40, 52
	Alkali metal dispersions, *or* Alkaline earth metal dispersions	4.3	UN1391	I	4.3	A2, A3, A7	None	201	244	Forbidden	1 L	D	52
	Alkaline corrosive liquids, n.o.s., see Caustic alkali liquids, n.o.s.	.....			.....		.....	.....	.....	.....	.....		.....
G	Alkaline earth metal alcoholates, n.o.s.	4.2	UN3205	II	4.2	65, A7, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	B	.....
	.....	.....		III	4.2	65, A7, IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	B	.....
	Alkaline earth metal alloys, n.o.s.	4.3	UN1393	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	52
	Alkaline earth metal amalgams, liquid	4.3	UN1392	I	4.3	A19, N34, N40	None	201	244	Forbidden	1 L	E	40, 52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Alkaline earth metal amalgams, solid	4.3	UN3402	I	4.3	A19, N34, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D	52
G	Alkaloids, liquid, n.o.s., *or* Alkaloid salts, liquid, n.o.s.	6.1	UN3140	I	6.1	A4, T14, TP2, TP27	None	201	243	1 L	30 L	A	
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
G	Alkaloids, solid, n.o.s. [or] Alkaloid salts, solid, n.o.s. [poisonous]	6.1	UN1544	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Alkyl sulfonic acids, liquid *or* Aryl sulfonic acids, liquid *with more than 5 percent free sulfuric acid.*	8	UN2584	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	242	1 L	30 L	B	
	Alkyl sulfonic acids, liquid *or* Aryl sulfonic acids, liquid *with not more than 5 percent free sulfuric acid.*	8	UN2586	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	B	
	Alkyl sulfonic acids, solid *or* Aryl sulfonic acids, solid, *with more than 5 percent free sulfuric acid.*	8	UN2583	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Alkyl sulfonic acids, solid *or* Aryl sulfonic acids, solid *with not more than 5 percent free sulfuric acid.*	8	UN2585	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Alkylphenols, liquid, n.o.s. *(including C2-C12 homologues)*	8	UN3145	I	8	A6, T14, TP2	None	201	243	0.5 L	2.5 L	B	
				II	8	IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	
	Alkylphenols, solid, n.o.s. *(including C2-C12 homologues)*	8	UN2430	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Alkylsulfuric acids	8	UN2571	II	8	B2, IB2, T8, TP2, TP12, TP13, TP28	154	202	242	1 L	30 L	C	14
	Allethrin, see Pesticides, liquid, toxic, n.o.s.												
	Allyl acetate	3	UN2333	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl alcohol	6.1	UN1098	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl bromide	3	UN1099	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	B	40
	Allyl chloride	3	UN1100	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl chlorocarbonate, see Allyl chloroformate												
	Allyl chloroformate	6.1	UN1722	I	6.1, 3, 8.	2, B9, B14, B32, B74, N41, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl ethyl ether	3	UN2335	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl formate	3	UN2336	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl glycidyl ether	3	UN2219	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Allyl iodide	3	UN1723	II	3, 8	A3, A6, IB1, N34, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
	Allyl isothiocyanate, stabilized	6.1	UN1545	II	6.1, 3	A3, A7, IB2, T7, TP2	None	202	243	Forbidden	60 L	D	40
	Allylamine	6.1	UN2334	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40

	Allyltrichlorosilane, stabilized	8	UN1724	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
	Aluminum alkyl halides, liquid	4.2	UN3052	I	4.2, 4.3.	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	134
	Aluminium alkyl halides, solid	4.2	UN3461	I	4.2, 4.3.	T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	134
	Aluminum alkyl hydrides	4.2	UN3076	I	4.2, 4.3.	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	.....
	Aluminum alkyls	4.2	UN3051	I	4.2, 4.3.	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	.....
	Aluminum borohydride *or* Aluminum borohydride in devices	4.2	UN2870	I	4.2, 4.3.	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	.....
	Aluminum bromide, anhydrous	8	UN1725	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum bromide, solution	8	UN2580	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Aluminum carbide	4.3	UN1394	II	4.3	A20, IB7, IP2, N41, T3, TP33	151	212	242	15 kg	50 kg	A	52
	Aluminum chloride, anhydrous	8	UN1726	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum chloride, solution	8	UN2581	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Aluminum dross, wet or hot	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Aluminum ferrosilicon powder	4.3	UN1395	II	4.3, 6.1.	A19, IB5, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 40, 52, 53, 85, 103
	.....	.....		III	4.3, 6.1.	A19, A20, IB4	151	213	241	25 kg	100 kg	A	39, 40, 52, 53, 85, 103
	Aluminum hydride	4.3	UN2463	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	.....
D	Aluminum, molten	9	NA9260	III	9	IB3, T1, TP3	None	None	247	Forbidden	Forbidden	D	.....
	Aluminum nitrate	5.1	UN1438	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
	Aluminum phosphate solution, see Corrosive liquids, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Aluminum phosphide	4.3	UN1397	I	4.3, 6.1.	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Aluminum phosphide pesticides	6.1	UN3048	I	6.1	A8, IB7, IP1, T6, TP33	None	211	242	Forbidden	15 kg	E	40, 85
	Aluminum powder, coated	4.1	UN1309	II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	13, 39, 52, 53, 74, 101
	.....	.....		III	4.1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	13, 39, 52, 53, 74, 101
	Aluminum powder, uncoated	4.3	UN1396	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 52, 53
	.....	.....		III	4.3	A19, A20, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	39, 52, 53
	Aluminum resinate	4.1	UN2715	III	4.1	IB6, T1, TP33	151	213	240	25 kg	100 kg	A	.....
	Aluminum silicon powder, uncoated	4.3	UN1398	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	39, 40, 52, 53, 85, 103
	Aluminum smelting by-products *or* Aluminum remelting by-products	4.3	UN3170	II	4.3	128, B115, IB7, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	85, 103
	.....	.....		III	4.3	128, B115, IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	B	85, 103
	Amatols, see Explosives, blasting, type B	.....			.....		.....	.....	.....	.....	.....		.....
G	Amines, flammable, corrosive, n.o.s. *or* Polyamines, flammable, corrosive, n.o.s.	3	UN2733	I	3, 8	T14, TP1, TP27	None	201	243	0.5 L	2.5 L	D	40
	.....	.....		II	3, 8	IB2, T11, TP1, TP27	150	202	243	1 L	5 L	B	40
	.....	.....		III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	A	40
G	Amines, liquid, corrosive, flammable, n.o.s. *or* Polyamines, liquid, corrosive, flammable, n.o.s.	8	UN2734	I	8, 3	A3, A6, N34, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A	52
	.....	.....		II	8, 3	IB2, T11, TP2, TP27	None	202	243	1 L	30 L	A	52
G	Amines, liquid, corrosive, n.o.s., *or* Polyamines, liquid, corrosive, n.o.s.	8	UN2735	I	8	A3, A6, B10, N34, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A	52
	.....	.....		II	8	B2, IB2, T11, TP1, TP27	154	202	242	1 L	30 L	A	52
	.....	.....		III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	52
G	Amines, solid, corrosive, n.o.s., *or* Polyamines, solid, corrosive n.o.s.	8	UN3259	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	A	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
	2-Amino-4-chlorophenol	6.1	UN2673	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	2-Amino-5-diethylaminopentane	6.1	UN2946	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	2-Amino-4,6-Dinitrophenol, wetted *with not less than 20 percent water by mass*	4.1	UN3317	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
	2-(2-Aminoethoxy) ethanol	8	UN3055	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	N-Aminoethylpiperazine	8	UN2815	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	12
+	Aminophenols (o-; m-; p-)	6.1	UN2512	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Aminopropyldiethanolamine, see Amines, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	n-Aminopropylmorpholine, see Amines, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Aminopyridines *(o-; m-; p-)*	6.1	UN2671	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	12, 40
I	Ammonia, anhydrous	2.3	UN1005	.....	2.3, 8	4, T50	None	304	314, 315.	Forbidden	Forbidden	D	40, 57
D	Ammonia, anhydrous	2.2	UN1005	.....	2.2	13, T50	None	304	314, 315.	Forbidden	Forbidden	D	40, 57
D	Ammonia solution, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.*	2.2	UN3318	.....	2.2	13, T50	None	304	314, 315.	Forbidden	Forbidden	D	40, 57
I	Ammonia solution, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.*	2.3	UN3318	.....	2.3, 8	4, T50	None	304	314, 315.	Forbidden	Forbidden	D	40, 57
	Ammonia solutions, *relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia.*	8	UN2672	III	8	IB3, IP8, T7, TP1	154	203	241	5 L	60 L	A	40, 85
	Ammonia solutions, *relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia.*	2.2	UN2073	.....	2.2		306	304	314, 315.	Forbidden	150 kg	E	40, 57
	Ammonium arsenate	6.1	UN1546	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	53
	Ammonium azide	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Ammonium bifluoride, solid, see Ammonium hydrogen difluoride, solid	.....			.....		.....	.....	.....	.....	.....		.....
	Ammonium bifluoride solution, see Ammonium hydrogen difluoride, solution	.....			.....		.....	.....	.....	.....	.....		.....
	Ammonium bromate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Ammonium chlorate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Ammonium dichromate	5.1	UN1439	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	52
	Ammonium dinitro-o-cresolate, solid	6.1	UN1843	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	36, 65, 66, 77
	Ammonium dinitro-o-cresolate solution	6.1	UN3424	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	36, 66, 78, 91
	.....	.....		III	6.1	IB2, T7, TP2	153	203	241	60 L	220 L	A	36, 66, 78, 91
	Ammonium fluoride	6.1	UN2505	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Ammonium fluorosilicate	6.1	UN2854	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Ammonium fulminate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Ammonium hydrogen sulfate	8	UN2506	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Ammonium hydrogendifluoride, solid	8	UN1727	II	8	IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	25, 40, 52
	Ammonium hydrogendifluoride, solution	8	UN2817	II	8, 6.1	IB2, N34, T8, TP2, TP12, TP13	154	202	243	1 L	30 L	B	40
	.....	.....		III	8, 6.1	IB3, N3, T4, TP1, TP12, TP13	154	203	241	5 L	60 L	B	40, 95
	Ammonium hydrosulfide, solution, see Ammonium sulfide solution	.....			.....		.....	.....	.....	.....	.....		.....
D	Ammonium hydroxide, *see* Ammonia solutions, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Ammonium metavanadate	6.1	UN2859	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	44, 89, 100, 141
	Ammonium nitrate based fertilizer	5.1	UN2067	III	5.1	52, 150, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	48, 59, 60, 66, 117

A W	Ammonium nitrate based fertilizer	9	UN2071	III	9	132, IB8, IP3	155	213	240	200 kg	200 kg	A	
	Ammonium nitrate emulsion *or* Ammonium nitrate suspension *or* Ammonium nitrate gel, *intermediate for blasting explosives.*	5.1	UN3375	II		147, 163	None	214	214	Forbidden	Forbidden	D	48, 59, 60, 66, 124
D	Ammonium nitrate-fuel oil mixture *containing only prilled ammonium nitrate and fuel oil*	1.5D	NA0331	II	1.5D		None	62	None	Forbidden	Forbidden	10	19E
	Ammonium nitrate, liquid *(hot concentrated solution)*	5.1	UN2426		5.1	B5, T7	None	None	243	Forbidden	Forbidden	D	59, 60
	Ammonium nitrate, *with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.*	1.1D	UN0222	II	1.1D		None	62	None	Forbidden	Forbidden	10	19E
	Ammonium nitrate, *with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance.*	5.1	UN1942	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	48, 59, 60, 116
	Ammonium nitrite	Forbidden											
	Ammonium perchlorate	1.1D	UN0402	II	1.1D	107	None	62	None	Forbidden	Forbidden	10	19E
	Ammonium perchlorate	5.1	UN1442	II	5.1	107, A9, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	E	58, 69
	Ammonium permanganate	Forbidden											
	Ammonium persulfate	5.1	UN1444	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Ammonium picrate, *dry or wetted with less than 10 percent water, by mass*	1.1D	UN0004	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E, 19E
	Ammonium picrate, wetted *with not less than 10 percent water, by mass*	4.1	UN1310	I	4.1	23, A2, N41	None	211	None	0.5 kg	0.5 kg	D	28, 36
	Ammonium polysulfide, solution	8	UN2818	II	8, 6.1	IB2, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 40, 52
				III	8, 6.1	IB3, T4, TP1, TP13	154	203	241	5 L	60 L	B	12, 40, 52
	Ammonium polyvanadate	6.1	UN2861	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	44, 89, 100, 141
	Ammonium silicofluoride, see Ammonium fluorosilicate												
	Ammonium sulfide solution	8	UN2683	II	8, 6.1, 3.	IB1, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 22, 52, 100
	Ammunition, blank, see Cartridges for weapons, blank												
	Ammunition, illuminating *with or without burster, expelling charge or propelling charge*	1.2G	UN0171	II	1.2G			62	None	Forbidden	Forbidden	03	
	Ammunition, illuminating *with or without burster, expelling charge or propelling charge*	1.3G	UN0254	II	1.3G			62	None	Forbidden	Forbidden	03	
	Ammunition, illuminating *with or without burster, expelling charge or propelling charge*	1.4G	UN0297	II	1.4G			62	None	Forbidden	75 kg	02	
	Ammunition, incendiary *liquid or gel, with burster, expelling charge or propelling charge*	1.3J	UN0247	II	1.3J			62	None	Forbidden	Forbidden	04	23E
	Ammunition, incendiary (water-activated contrivances) with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc..												
	Ammunition, incendiary, white phosphorus, *with burster, expelling charge or propelling charge*	1.2H	UN0243	II	1.2H			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, incendiary, white phosphorus, *with burster, expelling charge or propelling charge*	1.3H	UN0244	II	1.3H			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, incendiary *with or without burster, expelling charge, or propelling charge*	1.2G	UN0009	II	1.2G			62	None	Forbidden	Forbidden	03	
	Ammunition, incendiary *with or without burster, expelling charge, or propelling charge*	1.3G	UN0010	II	1.3G			62	None	Forbidden	Forbidden	03	
	Ammunition, incendiary *with or without burster, expelling charge or propelling charge*	1.4G	UN0300	II	1.4G			62	None	Forbidden	75 kg	02	
	Ammunition, practice	1.4G	UN0362	II	1.4G			62	None	Forbidden	75 kg	02	
	Ammunition, practice	1.3G	UN0488	II	1.3G			62	None	Forbidden	Forbidden	03	
	Ammunition, proof	1.4G	UN0363	II	1.4G			62	None	Forbidden	75 kg	02	
	Ammunition, rocket, see Warheads, rocket *etc*												
	Ammunition, SA (small arms), see Cartridges for weapons, *etc*												
	Ammunition, smoke (water-activated contrivances), white phosphorus, with burster, expelling charge or propelling charge, see Contrivances, water-activated, *etc. (UN 0248).*												
	Ammunition, smoke (water-activated contrivances), without white phosphorus or phosphides, with burster, expelling charge or propelling charge, see Contrivances, water-activated, *etc. (UN 0249).*												
	Ammunition smoke, white phosphorus *with burster,expelling charge, or propelling charge*	1.2H	UN0245	II	1.2H			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, smoke, white phosphorus *with burster, expelling charge, or propelling charge*	1.3H	UN0246	II	1.3H			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, smoke *with or without burster, expelling charge or propelling charge*	1.2G	UN0015	II	1.2G			62	None	Forbidden	Forbidden		8E, 17E, 20E
	Ammunition, smoke *with or without burster, expelling charge or propelling charge*	1.3G	UN0016	II	1.3G			62	None	Forbidden	Forbidden		8E, 17E, 20E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ammunition, smoke *with or without burster, expelling charge or propelling charge*	1.4G	UN0303	II	1.4G			62	None	Forbidden	75 kg		7E, 8E, 14E, 15E, 17E
	Ammunition, sporting, see Cartridges for weapons, *etc. (UN 0012; UN 0328; UN 0339)*												
	Ammunition, tear-producing, non-explosive, *without burster or expelling charge, non-fuzed*	6.1	UN2017	II	6.1, 8		None	212	None	Forbidden	50 kg	E	13, 40
	Ammunition, tear-producing *with burster, expelling charge or propelling charge*	1.2G	UN0018	II	1.2G, 8, 6.1.			62	None	Forbidden	Forbidden		8E, 17E, 20E
	Ammunition, tear-producing *with burster, expelling charge or propelling charge*	1.3G	UN0019	II	1.3G, 8, 6.1.			62	None	Forbidden	Forbidden		8E, 17E, 20E
	Ammunition, tear-producing *with burster, expelling charge or propelling charge*	1.4G	UN0301	II	1.4G, 8, 6.1.			62	None	Forbidden	75 kg		7E, 8E, 14E, 15E, 17E
	Ammunition, toxic, non-explosive, *without burster or expelling charge, non-fuzed*	6.1	UN2016	II	6.1		None	212	None	Forbidden	100 kg	E	13, 40
	Ammunition, toxic (water-activated contrivances), with burster, expelling charge or propelling charge, see Contrivances, water-activated, *etc.*												
G	Ammunition, toxic *with burster, expelling charge, or propelling charge*	1.2K	UN0020	II	1.2K, 6.1.			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Ammunition, toxic *with burster, expelling charge, or propelling charge*	1.3K	UN0021	II	1.3K, 6.1.			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Amyl acetates	3	UN1104	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl acid phosphate	8	UN2819	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Amyl butyrates	3	UN2620	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl chlorides	3	UN1107	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Amyl formates	3	UN1109	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl mercaptans	3	UN1111	II	3	A3, A6, IB2, T4, TP1	None	202	242	5 L	60 L	B	95, 102
	n-Amyl methyl ketone	3	UN1110	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl nitrate	3	UN1112	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Amyl nitrites	3	UN1113	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Amylamines	3	UN1106	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
				III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
	Amyltrichlorosilane	8	UN1728	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Anhydrous ammonia, *see* Ammonia, anhydrous												
	Anhydrous hydrofluoric acid, see Hydrogen fluoride, anhydrous												
+	Aniline	6.1	UN1547	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40, 52
	Aniline hydrochloride	6.1	UN1548	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Aniline oil, see Aniline												
	Anisidines	6.1	UN2431	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Anisole	3	UN2222	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Anisoyl chloride	8	UN1729	II	8	B2, B4, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Anti-freeze, liquid, see Flammable liquids, n.o.s.												
	Antimonous chloride, see Antimony trichloride												
	Antimony compounds, inorganic, liquid, n.o.s.	6.1	UN3141	III	6.1	35, IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
	Antimony compounds, inorganic, solid, n.o.s.	6.1	UN1549	III	6.1	35, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony lactate	6.1	UN1550	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony pentachloride, liquid	8	UN1730	II	8	B2, IB2, T7, TP2	None	202	242	1 L	30 L	C	40
	Antimony pentachloride, solutions	8	UN1731	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	40

Antimony pentafluoride	8	UN1732	II	8, 6.1	A3, A6, A7, A10, IB2, N3, N36, T7, TP2	None	202	243	Forbidden	30 L	D	44, 89, 100, 141
Antimony potassium tartrate	6.1	UN1551	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Antimony powder	6.1	UN2871	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Antimony sulfide and a chlorate, mixtures of	Forbidden											
Antimony sulfide, solid, see Antimony compounds, inorganic, n.o.s.												
Antimony trichloride, liquid	8	UN1733	II	8	B2, IB2	154	202	242	1 L	30 L	C	40
Antimony trichloride, solid	8	UN1733	II	8	IB8, IP2, IP4	154	212	240	15 kg	50 kg	A	40
Aqua ammonia, see Ammonia solution, *etc*												
Argon, compressed	2.2	UN1006		2.2		306	302	314, 315.	75 kg	150 kg	A	
Argon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1951		2.2	T75, TP5	320	316	318	50 kg	500 kg	B	
Arsenic	6.1	UN1558	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenic acid, liquid	6.1	UN1553	I	6.1	T20, TP2, TP7, TP13	None	201	243	1 L	30 L	B	46
Arsenic acid, solid	6.1	UN1554	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenic bromide	6.1	UN1555	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12, 40
Arsenic chloride, see Arsenic trichloride												
Arsenic compounds, liquid, n.o.s. *inorganic, including arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.*.	6.1	UN1556	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 137
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 137
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40, 137
Arsenic compounds, solid, n.o.s. *inorganic, including arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.*.	6.1	UN1557	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	137
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	137
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	137
Arsenic pentoxide	6.1	UN1559	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenic sulfide and a chlorate, mixtures of	Forbidden											
Arsenic trichloride	6.1	UN1560	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
Arsenic trioxide	6.1	UN1561	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenic, white, solid, see Arsenic trioxide												
Arsenical dust	6.1	UN1562	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenical pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2760	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Arsenical pesticides, liquid, toxic	6.1	UN2994	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Arsenical pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN2993	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Arsenical pesticides, solid, toxic	6.1	UN2759	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Arsenious acid, solid, see Arsenic trioxide												
Arsenious and mercuric iodide solution, see Arsenic compounds, liquid, n.o.s.												
Arsine	2.3	UN2188		2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
Articles, explosive, extremely insensitive *or* Articles, EEI	1.6N	UN0486	II	1.6N	101	None	62	None	Forbidden	Forbidden	07	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Articles, explosive, n.o.s.	1.4S	UN0349	II	1.4S	101	None	62	None	25 kg	100 kg	05	
G	Articles, explosive, n.o.s.	1.4B	UN0350	II	1.4B	101	None	62	None	Forbidden	Forbidden	06	
G	Articles, explosive, n.o.s.	1.4C	UN0351	II	1.4C	101	None	62	None	Forbidden	75 kg	06	
G	Articles, explosive, n.o.s.	1.4D	UN0352	II	1.4D	101	None	62	None	Forbidden	75 kg	06	
G	Articles, explosive, n.o.s.	1.4G	UN0353	II	1.4G	101	None	62	None	Forbidden	75 kg	06	
G	Articles, explosive, n.o.s.	1.1L	UN0354	II	1.1L	101	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.2L	UN0355	II	1.2L	101	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.3L	UN0356	II	1.3L	101	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.1C	UN0462	II	1.1C	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.1D	UN0463	II	1.1D	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.1E	UN0464	II	1.1E	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.1F	UN0465	II	1.1F	101	None	62	None	Forbidden	Forbidden	08	
G	Articles, explosive, n.o.s.	1.2C	UN0466	II	1.2C	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.2D	UN0467	II	1.2D	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.2E	UN0468	II	1.2E	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.2F	UN0469	II	1.2F	101	None	62	None	Forbidden	Forbidden	08	
G	Articles, explosive, n.o.s.	1.3C	UN0470	II	1.3C	101	None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s.	1.4E	UN0471	II	1.4E	101	None	62	None	Forbidden	75 kg	06	
G	Articles, explosive, n.o.s.	1.4F	UN0472	II	1.4F	101	None	62	None	Forbidden	Forbidden	08	
	Articles, pressurized pneumatic *or* hydraulic *containing non-flammable gas*	2.2	UN3164		2.2		306	302, 304.	None	No limit	No limit	A	
	Articles, pyrophoric	1.2L	UN0380	II	1.2L		None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Articles, pyrotechnic *for technical purposes*	1.1G	UN0428	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic *for technical purposes*	1.2G	UN0429	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic *for technical purposes*	1.3G	UN0430	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic *for technical purposes*	1.4G	UN0431	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Articles, pyrotechnic *for technical purposes*	1.4S	UN0432	II	1.4S		None	62	None	25 kg	100 kg	05	
D	Asbestos	9	NA2212	III	9	156, IB8, IP2, IP4	155	216	240	200 kg	200 kg	A	34, 40
	Ascaridole (organic peroxide)	Forbidden											
D	Asphalt, *at or above its flash point*	3	NA1999	III	3	IB3, T1, TP3	150	203	247	Forbidden	Forbidden	D	
D	Asphalt, cut back, *see* Tars, liquid, *etc*												
	Automobile, motorcycle, tractor, other self-propelled vehicle, engine, or other mechanical apparatus, see Vehicles *or* Battery *etc.*												
A G	Aviation regulated liquid, n.o.s.	9	UN3334		9	A35	155	204		No limit	No limit	A	
A G	Aviation regulated solid, n.o.s.	9	UN3335		9	A35	155	204		No limit	No limit	A	
	Azaurolic acid (salt of) (dry)	Forbidden											
	Azido guanidine picrate (dry)	Forbidden											
	5-Azido-1-hydroxy tetrazole	Forbidden											
	Azido hydroxy tetrazole (mercury and silver salts)	Forbidden											
	3-Azido-1,2-Propylene glycol dinitrate	Forbidden											
	Azidodithiocarbonic acid	Forbidden											
	Azidoethyl nitrate	Forbidden											
	1-Aziridinylphosphine oxide-(tris), see Tris-(1-aziridinyl) phosphine oxide, solution												
	Azodicarbonamide	4.1	UN3242	II	4.1	38, IB8, T3, TP33	151	212	240	Forbidden	Forbidden	D	12, 52, 53, 74
	Azotetrazole (dry)	Forbidden											
	Barium	4.3	UN1400	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	52
	Barium alloys, pyrophoric	4.2	UN1854	I	4.2	T21, TP7, TP33	None	181	None	Forbidden	Forbidden	D	
	Barium azide, *dry or wetted with less than 50 percent water, by mass*	1.1A	UN0224	II	1.1A, 6.1.	111, 117	None	62	None	Forbidden	Forbidden	12	

Barium azide, wetted *with not less than 50 percent water, by mass*	4.1	UN1571	I	4.1, 6.1.	162, A2	None	182	None	Forbidden	0.5 kg	D	28
Barium bromate	5.1	UN2719	II	5.1, 6.1.	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium chlorate, solid	5.1	UN1445	II	5.1, 6.1.	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium chlorate, solution	5.1	UN3405	II	5.1, 6.1.	A9, IB2, N34, T4, TP1	152	202	243	1 L	5 L	A	56, 58, 133
			III	5.1, 6.1.	A9, IB2, N34, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58, 133
Barium compounds, n.o.s.	6.1	UN1564	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Barium cyanide	6.1	UN1565	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
Barium hypochlorite *with more than 22 percent available chlorine*	5.1	UN2741	II	5.1, 6.1.	A7, A9, IB8, IP2, IP4, N34, T3, TP33	152	212	None	5 kg	25 kg	B	4, 52, 56, 58, 106
Barium nitrate	5.1	UN1446	II	5.1, 6.1.	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
Barium oxide	6.1	UN1884	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Barium perchlorate, solid	5.1	UN1447	II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium perchlorate, solution	5.1	UN3406	II	5.1, 6.1.	IB2, T4, TP1	152	202	243	1 L	5 L	A	56, 58, 133
			III	5.1, 6.1.	IB2, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58, 133
Barium permanganate	5.1	UN1448	II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Barium peroxide	5.1	UN1449	II	5.1, 6.1.	A9, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 56, 75
Barium selenate, see Selenates *or* Selenites												
Barium selenite, see Selenates *or* Selenites												
Batteries, containing sodium	4.3	UN3292	II	4.3		189	189	189	Forbidden	No limit	A	
Batteries, dry, containing potassium hydroxide solid, *electric, storage*	8	UN3028	III	8		None	213	None	25 kg gross	230 kg gross	A	
Batteries, wet, filled with acid, *electric storage*	8	UN2794	III	8		159	159	159	30 kg gross	No limit	A	
Batteries, wet, filled with alkali, *electric storage*	8	UN2795	III	8		159	159	159	30 kg gross	No limit	A	
Batteries, wet, non-spillable, *electric storage*	8	UN2800	III	8		159	159	159	No Limit	No Limit	A	
Batteries, dry, *not subject to the requirements of this subchapter*					130							
Battery fluid, acid	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12	154	202	242	1 L	30 L	B	
Battery fluid, alkali	8	UN2797	II	8	B2, IB2, N6, T7, TP2, TP28	154	202	242	1 L	30 L	A	29
Battery lithium type, see Lithium batteries *etc*												
Battery-powered vehicle *or* Battery-powered equipment	9	UN3171		9	134	220	220	None	No limit	No limit		
Battery, wet, filled with acid or alkali with vehicle or mechanical equipment containing an internal combustion engine, see Vehicle, *etc. or* Engines, internal combustion, *etc.*												
+ Benzaldehyde	9	UN1990	III	9	IB3, T2, TP1	155	203	241	100 L	220 L	A	
Benzene	3	UN1114	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Benzene diazonium chloride (dry)	Forbidden											
Benzene diazonium nitrate (dry)	Forbidden											
Benzene phosphorus dichloride, see Phenyl phosphorus dichloride												
Benzene phosphorus thiodichloride, see Phenyl phosphorus thiodichloride												
Benzene sulfonyl chloride	8	UN2225	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	40
Benzene triozonide	Forbidden											
Benzenethiol, see Phenyl mercaptan												
Benzidine	6.1	UN1885	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Benzol, see Benzene												
Benzonitrile	6.1	UN2224	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40, 52
Benzoquinone	6.1	UN2587	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Benzotrichloride	8	UN2226	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
Benzotrifluoride	3	UN2338	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Benzoxidiazoles (dry)	Forbidden											
Benzoyl azide	Forbidden											
Benzoyl chloride	8	UN1736	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	242	1 L	30 L	C	40
Benzyl bromide	6.1	UN1737	II	6.1, 8	A3, A7, IB2, N33, N34, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Benzyl chloride	6.1	UN1738	II	6.1, 8	A3, A7, B70, IB2, N33, N42, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40
	Benzyl chloride *unstabilized*	6.1	UN1738	II	6.1, 8	A3, A7, B8, B11, IB2, N33, N34, N43, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40
	Benzyl chloroformate	8	UN1739	I	8	A3, A6, B4, N41, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D	40
	Benzyl iodide	6.1	UN2653	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	12, 40
	Benzyldimethylamine	8	UN2619	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40, 48
	Benzylidene chloride	6.1	UN1886	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
	Beryllium compounds, n.o.s.	6.1	UN1566	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Beryllium nitrate	5.1	UN2464	II	5.1, 6.1.	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Beryllium, powder	6.1	UN1567	II	6.1, 4.1.	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	A	
	Bicyclo [2,2,1] hepta-2,5-diene, stabilized *or* 2,5-Norbornadiene, stabilized	3	UN2251	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	D	
	Biphenyl triozonide	Forbidden											
	Bipyridilium pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2782	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Bipyridilium pesticides, liquid, toxic	6.1	UN3016	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Bipyridilium pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3015	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	21, 40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	21, 40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	21, 40
	Bipyridilium pesticides, solid, toxic	6.1	UN2781	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Bis (Aminopropyl) piperazine, see Corrosive liquid, n.o.s.												
	Bisulfate, aqueous solution	8	UN2837	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
				III	8	A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
	Bisulfites, aqueous solutions, n.o.s.	8	UN2693	III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
	Black powder, compressed *or* Gunpowder, compressed *or* Black powder, in pellets *or* Gunpowder, in pellets.	1.1D	UN0028	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Black powder *or* Gunpowder, *granular or as a meal*	1.1D	UN0027	II	1.1D		None	62	None	Forbidden	Forbidden	10	
D	Black powder for small arms	4.1	NA0027	I	4.1	70	None	170	None	Forbidden	Forbidden	E	
	Blasting agent, n.o.s., see Explosives, blasting *etc*												
	Blasting cap assemblies, see Detonator assemblies, non-electric, *for blasting*												
	Blasting caps, electric, see Detonators, electric *for blasting*												
	Blasting caps, non-electric, see Detonators, non-electric, *for blasting*												
	Bleaching powder, see Calcium hypochlorite mixtures, *etc*												
I	Blue asbestos *(Crocidolite) or* Brown asbestos *(amosite, mysorite)*	9	UN2212	II	9	156, IB8, IP2, IP4, T3, TP33	155	216	240	Forbidden	Forbidden	A	34, 40
	Bombs, photo-flash	1.1F	UN0037	II	1.1F			62	None	Forbidden	Forbidden	08	
	Bombs, photo-flash	1.1D	UN0038	II	1.1D			62	None	Forbidden	Forbidden	03	

	Bombs, photo-flash	1.2G	UN0039	II	1.2G		.....	62	None	Forbidden	Forbidden	03	.....
	Bombs, photo-flash	1.3G	UN0299	II	1.3G		.....	62	None	Forbidden	Forbidden	03	.....
	Bombs, smoke, non-explosive, *with corrosive liquid, without initiating device*	8	UN2028	II	8		None	160	None	Forbidden	50 kg	E	40
	Bombs, *with bursting charge*	1.1F	UN0033	II	1.1F		.....	62	None	Forbidden	Forbidden	08	.....
	Bombs, *with bursting charge*	1.1D	UN0034	II	1.1D		.....	62	None	Forbidden	Forbidden	03	.....
	Bombs, *with bursting charge*	1.2D	UN0035	II	1.2D		.....	62	None	Forbidden	Forbidden	03	.....
	Bombs, *with bursting charge*	1.2F	UN0291	II	1.2F		.....	62	None	Forbidden	Forbidden	08	.....
	Bombs with flammable liquid, *with bursting charge*	1.1J	UN0399	II	1.1J		.....	62	None	Forbidden	Forbidden	04	23E
	Bombs with flammable liquid, *with bursting charge*	1.2J	UN0400	II	1.2J		.....	62	None	Forbidden	Forbidden	04	23E
	Boosters with detonator	1.1B	UN0225	II	1.1B		None	62	None	Forbidden	Forbidden	11	.....
	Boosters with detonator	1.2B	UN0268	II	1.2B		None	62	None	Forbidden	Forbidden	07	.....
	Boosters, *without detonator*	1.1D	UN0042	II	1.1D		None	62	None	Forbidden	Forbidden	07	.....
	Boosters, *without detonator*	1.2D	UN0283	II	1.2D		None	62	None	Forbidden	Forbidden	07	.....
	Borate and chlorate mixtures, see Chlorate and borate mixtures	.....			.....		.....	.....	.....	.....	.....		.....
	Borneol	4.1	UN1312	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	.....
+	Boron tribromide	8	UN2692	I	8, 6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	12
	Boron trichloride	2.3	UN1741	.....	2.3, 8	3, B9, B14	None	304	314	Forbidden	Forbidden	D	25, 40
	Boron trifluoride	2.3	UN1008	.....	2.3	2, B9, B14	None	302	314, 315.	Forbidden	Forbidden	D	40
	Boron trifluoride acetic acid complex, liquid	8	UN1742	II	8	B2, B6, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	A	.....
	Boron trifluoride acetic acid complex, solid	8	UN3419	II	8	B2, B6, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	Boron trifluoride diethyl etherate	8	UN2604	I	8, 3	A3, A19, T10, TP2	None	201	243	0.5 L	2.5 L	D	40
	Boron trifluoride dihydrate	8	UN2851	II	8	IB2, T7, TP2	154	212	240	15 kg	50 kg	B	12, 40,
	Boron trifluoride dimethyl etherate	4.3	UN2965	I	4.3, 8, 3.	A19, T10, TP2, TP7	None	201	243	Forbidden	1 L	D	21, 28, 40, 49, 100
	Boron trifluoride propionic acid complex, liquid	8	UN1743	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	A	.....
	Boron trifluoride propionic acid complex, solid	8	UN3420	II	8	B2, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	Box toe gum, see Nitrocellulose *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Bromates, inorganic, aqueous solution, n.o.s.	5.1	UN3213	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
	.....	.....		III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Bromates, inorganic, n.o.s.	5.1	UN1450	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Bromine azide	Forbidden			.....		.....	.....	.....	.....	.....		.....
+	Bromine *or* Bromine solutions	8	UN1744	I	8, 6.1	1, B9, B64, B85, N34, N43, T22, TP2, TP10, TP12, TP13	None	226	249	Forbidden	Forbidden		12, 40, 66, 74, 89, 90
	Bromine chloride	2.3	UN2901	.....	2.3, 8, 5.1.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40, 89, 90
+	Bromine pentafluoride	5.1	UN1745	I	5.1, 6.1, 8.	1, B9, B14, B30, B72, T22, TP2, TP12, TP13, TP38, TP44	None	228	244	Forbidden	Forbidden	D	25, 40, 66, 90
+	Bromine trifluoride	5.1	UN1746	I	5.1, 6.1, 8.	2, B9, B14, B32, B74, T22, TP2, TP12, TP13, TP38, TP45	None	228	244	Forbidden	Forbidden	D	25, 40, 66, 90
	4-Bromo-1,2-dinitrobenzene	Forbidden			.....		.....	.....	.....	.....	.....		.....
	4-Bromo-1,2-dinitrobenzene (unstable at 59 degrees C)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	1-Bromo-3-chloropropane	6.1	UN2688	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	1-Bromo-3-methylbutane	3	UN2341	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	1-Bromo-3-nitrobenzene (unstable at 56 degrees C)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	2-Bromo-2-nitropropane-1,3-diol	4.1	UN3241	III	4.1	46, IB8, IP3	151	213	None	25 kg	50 kg	C	12, 25, 40
	Bromoacetic acid, solid	8	UN3425	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	Bromoacetic acid solution	8	UN1938	II	8	A7, B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
	.....	.....		III	8	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	40
+	Bromoacetone	6.1	UN1569	II	6.1, 3	2, T20, TP2, TP13	None	193	245	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Bromoacetyl bromide	8	UN2513	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40, 53
	Bromobenzene	3	UN2514	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Bromobenzyl cyanides, liquid	6.1	UN1694	I	6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	D	12, 40, 52
	Bromobenzyl cyanides, solid	6.1	UN3449	I	6.1	T6, TP33	None	211	242	5 kg	50 kg	D	12, 40, 52
	1-Bromobutane	3	UN1126	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	2-Bromobutane	3	UN2339	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Bromochloromethane	6.1	UN1887	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	2-Bromoethyl ethyl ether	3	UN2340	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Bromoform	6.1	UN2515	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12, 40
	Bromomethylpropanes	3	UN2342	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	2-Bromopentane	3	UN2343	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Bromopropanes	3	UN2344	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
				III	3	IB3, T2, TP1	150	203	242	60 L	220 L	A	
	3-Bromopropyne	3	UN2345	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	D	40
	Bromosilane	Forbidden											
	Bromotoluene-alpha, see Benzyl bromide												
	Bromotrifluoroethylene	2.1	UN2419		2.1		None	304	314, 315.	Forbidden	150 kg	B	40
	Bromotrifluoromethane *or* Refrigerant gas, R 13B1.	2.2	UN1009		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Brucine	6.1	UN1570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
	Bursters, *explosive*	1.1D	UN0043	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Butadienes, stabilized *or* Butadienes and Hydrocarbon mixture, stabilized *containing more than 40% butadienes.*	2.1	UN1010		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Butane *see also* Petroleum gases, liquefied	2.1	UN1011		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
	Butane, butane mixtures and mixtures having similar properties in cartridges each not exceeding 500 grams, see Receptacles, *etc.*												
	Butanedione	3	UN2346	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	1,2,4-Butanetriol trinitrate	Forbidden											
	Butanols	3	UN1120	II	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	tert-Butoxycarbonyl azide	Forbidden											
	Butyl acetates	3	UN1123	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Butyl acid phosphate	8	UN1718	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Butyl acrylates, stabilized	3	UN2348	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Butyl alcohols, see Butanols												
	Butyl benzenes	3	UN2709	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	n-Butyl bromide, see 1-Bromobutane												
	n-Butyl chloride, see Chlorobutanes												
D	sec-Butyl chloroformate	6.1	NA2742	I	6.1, 3, 8.	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	1 L	30 L	A	12, 13, 22, 25, 40, 48, 100
	n-Butyl chloroformate	6.1	UN2743	I	6.1, 8, 3.	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 13, 21, 25, 40, 100
	Butyl ethers, see Dibutyl ethers												
	Butyl ethyl ether, see Ethyl butyl ether												
	n-Butyl formate	3	UN1128	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	tert-Butyl hydroperoxide, with more than 90 percent with water	Forbidden											
	tert-Butyl hypochlorite	4.2	UN3255	I	4.2, 8		None	211	243	Forbidden	Forbidden	D	
	N-n-Butyl imidazole	6.1	UN2690	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	tert-Butyl isocyanate	6.1	UN2484	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40

n-Butyl isocyanate	6.1	UN2485	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Butyl mercaptans	3	UN2347	II	3	A3, A6, IB2, T4, TP1	150	202	242	5 L	60 L	D	52, 95
n-Butyl methacrylate, stabilized	3	UN2227	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Butyl methyl ether	3	UN2350	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Butyl nitrites	3	UN2351	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	40
			II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
tert-Butyl peroxyacetate, with more than 76 percent in solution	Forbidden											
n-Butyl peroxydicarbonate, with more than 52 percent in solution	Forbidden											
tert-Butyl peroxyisobutyrate, with more than 77 percent in solution	Forbidden											
Butyl phosphoric acid, see Butyl acid phosphate												
Butyl propionates	3	UN1914	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
5-tert-Butyl-2,4,6-trinitro-m-xylene *or* Musk xylene	4.1	UN2956	III	4.1	159	None	223	None	Forbidden	Forbidden	D	D12, 25, 48, 127
Butyl vinyl ether, stabilized	3	UN2352	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
n-Butylamine	3	UN1125	II	3, 8	IB2, T7, TP1	150	202	242	1 L	5 L	B	40
N-Butylaniline	6.1	UN2738	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	74
tert-Butylcyclohexylchloroformate	6.1	UN2747	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12, 13, 25
Butylene *see also* Petroleum gases, liquefied	2.1	UN1012		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
1,2-Butylene oxide, stabilized	3	UN3022	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	27, 49
Butyltoluenes	6.1	UN2667	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
Butyltrichlorosilane	8	UN1747	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
1,4-Butynediol	6.1	UN2716	III	6.1	A1, IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg	A	52, 53, 70, 139, 140
Butyraldehyde	3	UN1129	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Butyraldoxime	3	UN2840	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Butyric acid	8	UN2820	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	12
Butyric anhydride	8	UN2739	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
Butyronitrile	3	UN2411	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
Butyryl chloride	3	UN2353	II	3, 8	IB2, T8, TP2, TP12, TP13	150	202	243	1 L	5 L	C	40
Cacodylic acid	6.1	UN1572	II	6.1	IB8, IP2, IP4,T3, TP33	153	212	242	25 kg	100 kg	E	52
Cadmium compounds	6.1	UN2570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Caesium hydroxide	8	UN2682	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29
Caesium hydroxide solution	8	UN2681	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	29
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	29
Calcium	4.3	UN1401	II	4.3	IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	52
Calcium arsenate	6.1	UN1573	II	6.1	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg	A	
Calcium arsenate and calcium arsenite, mixtures, solid	6.1	UN1574	II	6.1	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg	A	
Calcium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
Calcium carbide	4.3	UN1402	I	4.3	A1, A8, B55, B59, IB4, IP1, N34, T9, TP7, TP33	None	211	242	Forbidden	15 kg	B	52
			II	4.3	A1, A8, B55, B59, IB7, IP2, N34, T3, TP33	151	212	241	15 kg	50 kg	B	52
Calcium chlorate	5.1	UN1452	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium chlorate aqueous solution	5.1	UN2429	II	5.1	A2, IB2, N41, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		III	5.1	A2, IB2, N41, T4, TP1	152	203	241	2.5 L	30 L	B	56, 68, 133
	Calcium chlorite	5.1	UN1453	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Calcium cyanamide *with more than 0.1 percent of calcium carbide*	4.3	UN1403	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	52
	Calcium cyanide	6.1	UN1575	I	6.1	IB7, IP1, N79, N80, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
	Calcium dithionite *or* Calcium hydrosulfite	4.2	UN1923	II	4.2	A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
	Calcium hydride	4.3	UN1404	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
	Calcium hydrosulfite, *see* Calcium dithionite	.....			.....		.....	.....	.....	.....	.....		.....
	Calcium hypochlorite, dry *or* Calcium hypochlorite mixtures dry *with more than 39 percent available chlorine (8.8 percent available oxygen).*	5.1	UN1748	II	5.1	165, 166, A7, A9, IB8, IP2, IP4, IP13, N34, W9	152	212	None	5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	.....	.....		III	5.1	165, 171, A7, A9, IB8, IP4, IP13, N34, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite, hydrated *or* Calcium hypochlorite, hydrated mixtures, *with not less than 5.5 percent but not more than 16 percent water.*	5.1	UN2880	II	5.1	165, 166, IB8, IP2, IP4, IP13, W9	152	212	240	5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	.....	.....		III	5.1	165, 171, IB8, IP4, IP13, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, *with more than 10 percent but not more than 39 percent available chlorine.*	5.1	UN2208	III	5.1	165, A1, A29, IB8, IP3, IP13, N34, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium manganese silicon	4.3	UN2844	III	4.3	A1, A19, IB8, IP2, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	52, 85, 103
	Calcium nitrate	5.1	UN1454	III	5.1	34, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
A	Calcium oxide	8	UN1910	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
	Calcium perchlorate	5.1	UN1455	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Calcium permanganate	5.1	UN1456	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
	Calcium peroxide	5.1	UN1457	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 56, 75
	Calcium phosphide	4.3	UN1360	I	4.3, 6.1.	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Calcium, pyrophoric *or* Calcium alloys, pyrophoric	4.2	UN1855	I	4.2		None	187	None	Forbidden	Forbidden	D	.....
	Calcium resinate	4.1	UN1313	III	4.1	A1, A19, IB6, T1, TP33	None	213	240	25 kg	100 kg	A	.....
	Calcium resinate, fused	4.1	UN1314	III	4.1	A1, A19, IB4, T1, TP33	None	213	240	25 kg	100 kg	A	.....
	Calcium selenate, see Selenates *or* Selenites	.....			.....		.....	.....	.....	.....	.....		.....
	Calcium silicide	4.3	UN1405	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	B	52, 85, 103
	.....	.....		III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	B	52, 85, 103
	Camphor oil	3	UN1130	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Camphor, *synthetic*	4.1	UN2717	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	.....
	Cannon primers, see Primers, tubular	.....			.....		.....	.....	.....	.....	.....		.....
	Caproic acid	8	UN2829	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Caps, blasting, see Detonators, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Carbamate pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2758	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40

	.....	.....		II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Carbamate pesticides, liquid, toxic	6.1	UN2992	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Carbamate pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN2991	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Carbamate pesticides, solid, toxic	6.1	UN2757	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Carbolic acid, see Phenol, solid *or* Phenol, molten	.....			.....		.....	.....	.....	.....	.....		.....
	Carbolic acid solutions, see Phenol solutions	.....			.....		.....	.....	.....	.....	.....		.....
I	Carbon, activated	4.2	UN1362	III	4.2	IB8, IP3, T1, TP33	None	213	241	0.5 kg	0.5 kg	A	12
I	Carbon, *animal or vegetable origin*	4.2	UN1361	II	4.2	IB6, T3, TP33	None	212	242	Forbidden	Forbidden	A	12
	.....	.....		III	4.2	IB8, IP3, T1, TP33	None	213	241	Forbidden	Forbidden	A	12
	Carbon bisulfide, see Carbon disulfide	.....			.....		.....	.....	.....	.....	.....		.....
	Carbon dioxide	2.2	UN1013	.....	2.2		306	302, 304.	302, 314, 315.	75 kg	150 kg	A	.....
	Carbon dioxide and nitrous oxide mixtures	2.2	UN1015	.....	2.2		306	None	314, 315.	75 kg	150 kg	A	.....
	Carbon dioxide and oxygen mixtures, compressed	2.2	UN1014	.....	2.2, 5.1.	77, A14	306	304	314, 315.	75 kg	150 kg	A	.....
	Carbon dioxide, refrigerated liquid	2.2	UN2187	.....	2.2	T75, TP5	306	304	314, 315.	50 kg	500 kg	B	.....
A W	Carbon dioxide, solid *or* Dry ice	9	UN1845	III	None		217	217	240	200 kg	200 kg	C	40
	Carbon disulfide	3	UN1131	I	3, 6.1	B16, T14, TP2, TP7, TP13	None	201	243	Forbidden	Forbidden	D	18, 40, 115
	Carbon monoxide, compressed	2.3	UN1016	.....	2.3, 2.1.	4	None	302	314, 315.	Forbidden	25 kg	D	40
	Carbon monoxide and hydrogen mixture, compressed	2.3	UN2600	.....	2.3, 2.1.	6	None	302	302	Forbidden	Forbidden	D	40, 57
D	Carbon monoxide, refrigerated liquid *(cryogenic liquid)*	2.3	NA9202	.....	2.3, 2.1.	4, T75, TP5	None	316	318	Forbidden	Forbidden	D	.....
	Carbon tetrabromide	6.1	UN2516	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	25
	Carbon tetrachloride	6.1	UN1846	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
	Carbonyl chloride, see Phosgene	.....			.....		.....	.....	.....	.....	.....		.....
	Carbonyl fluoride	2.3	UN2417	.....	2.3, 8	2	None	302	None	Forbidden	Forbidden	D	40
	Carbonyl sulfide	2.3	UN2204	.....	2.3, 2.1.	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Cartridge cases, empty primed, see Cases, cartridge, empty, with primer	.....			.....		.....	.....	.....	.....	.....		.....
	Cartridges, actuating, for aircraft ejector seat catapult, fire extinguisher, canopy removal or apparatus, see Cartridges, power device.	.....			.....		.....	.....	.....	.....	.....		.....
	Cartridges, explosive, see Charges, demolition	.....			.....		.....	.....	.....	.....	.....		.....
	Cartridges, flash	1.1G	UN0049	II	1.1G ..		None	62	None	Forbidden	Forbidden	07	.....
	Cartridges, flash	1.3G	UN0050	II	1.3G ..		None	62	None	Forbidden	75 kg	07	.....
	Cartridges for weapons, blank	1.1C	UN0326	II	1.1C ..		None	62	None	Forbidden	Forbidden	07	.....
	Cartridges for weapons, blank	1.2C	UN0413	II	1.2C ..		None	62	None	Forbidden	Forbidden	07	.....
	Cartridges for weapons, blank *or* Cartridges, small arms, blank	1.4S	UN0014	II	None		63	62	None	25 kg	100 kg	05	.....
	Cartridges for weapons, blank *or* Cartridges, small arms, blank	1.3C	UN0327	II	1.3C ..		None	62	None	Forbidden	Forbidden	07	.....
	Cartridges for weapons, blank *or* Cartridges, small arms, blank	1.4C	UN0338	II	1.4C ..		None	62	None	Forbidden	75 kg	06	.....
	Cartridges for weapons, inert projectile	1.2C	UN0328	II	1.2C ..		None	62	None	Forbidden	Forbidden	03	.....
	Cartridges for weapons, inert projectile *or* Cartridges, small arms	1.4S	UN0012	II	None		63	62	None	25 kg	100 kg	05	.....
	Cartridges for weapons, inert projectile *or* Cartridges, small arms	1.4C	UN0339	II	1.4C ..		None	62	None	Forbidden	75 kg	06	.....
	Cartridges for weapons, inert projectile *or* Cartridges, small arms	1.3C	UN0417	II	1.3C ..		None	62	None	Forbidden	Forbidden	06	.....
	Cartridges for weapons, *with bursting charge*	1.1F	UN0005	II	1.1F ...		None	62	None	Forbidden	Forbidden	08	.....
	Cartridges for weapons, *with bursting charge*	1.1E	UN0006	II	1.1E ...		None	62	None	Forbidden	Forbidden	03	.....
	Cartridges for weapons, *with bursting charge*	1.2F	UN0007	II	1.2F ...		None	62	None	Forbidden	Forbidden	08	.....
	Cartridges for weapons, *with bursting charge*	1.2E	UN0321	II	1.2E ...		None	62	None	Forbidden	Forbidden	03	.....
	Cartridges for weapons, *with bursting charge*	1.4F	UN0348	II	1.4F ...		None	62	None	Forbidden	Forbidden	08	.....
	Cartridges for weapons, *with bursting charge*	1.4E	UN0412	II	1.4E ...		None	62	None	Forbidden	75 kg	02	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Cartridges, oil well	1.3C	UN0277	II	1.3C		None	62	None	Forbidden	Forbidden	07	
	Cartridges, oil well	1.4C	UN0278	II	1.4C		None	62	None	Forbidden	75 kg	06	
	Cartridges, power device	1.3C	UN0275	II	1.3C		None	62	None	Forbidden	75 kg	07	
	Cartridges, power device	1.4C	UN0276	II	1.4C	110	None	62	None	Forbidden	75 kg	06	
	Cartridges, power device	1.4S	UN0323	II	1.4S	110	63	62	None	25 kg	100 kg	05	
	Cartridges, power device	1.2C	UN0381	II	1.2C		None	62	None	Forbidden	Forbidden	07	
	Cartridges, safety, blank, see Cartridges for weapons, blank *(UN 0014)*												
	Cartridges, safety, see Cartridges for weapons, *other than blank or* Cartridges, power device *(UN 0323).*												
	Cartridges, signal	1.3G	UN0054	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Cartridges, signal	1.4G	UN0312	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Cartridges, signal	1.4S	UN0405	II	1.4S		None	62	None	25 kg	100 kg	05	
D	Cartridges, small arms	ORM-D			None		63	None	None	30 kg gross	30 kg gross	A	
D	Cartridges power device *(used to project fastening devices)*	ORM-D			None		63	None	None	30 kg gross	30 kg gross	A	
	Cartridges, sporting, see Cartridges for weapons, *other than blank*												
	Cartridges, starter, jet engine, see Cartridges, power device												
	Cases, cartridge, empty with primer	1.4S	UN0055	II	1.4S	50	None	62	None	25 kg	100 kg	05	
	Cases, cartridges, empty with primer	1.4C	UN0379	II	1.4C	50	None	62	None	Forbidden	75 kg	06	
	Cases, combustible, empty, without primer	1.4C	UN0446	II	1.4C		None	62	None	Forbidden	75 kg	06	
	Cases, combustible, empty, without primer	1.3C	UN0447	II	1.3C		None	62	None	Forbidden	Forbidden	07	
	Casinghead gasoline see Gasoline												
A W	Castor beans *or* Castor meal *or* Castor pomace *or* Castor flake	9	UN2969	II	None	IB8, IP2, IP4, T3, TP33	155	204	240	No limit	No limit	E	34, 40
G	Caustic alkali liquids, n.o.s.	8	UN1719	II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	A	29
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	29
	Caustic potash, see Potassium hydroxide *etc*												
	Caustic soda, (etc.) see Sodium hydroxide *etc*												
	Cells, containing sodium	4.3	UN3292	II	4.3		189	189	189	25 kg gross	No limit	A	
	Celluloid, *in block, rods, rolls, sheets, tubes, etc., except scrap*	4.1	UN2000	III	4.1		None	213	240	25 kg	100 kg	A	
	Celluloid, scrap	4.2	UN2002	III	4.2	IB8, IP3	None	213	241	Forbidden	Forbidden	D	
	Cement, see Adhesives *containing flammable liquid*												
	Cerium, *slabs, ingots, or rods*	4.1	UN1333	II	4.1	IB8, IP2, IP4, N34	None	212	240	15 kg	50 kg	A	74, 91
	Cerium, *turnings or gritty powder*	4.3	UN3078	II	4.3	A1, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	52
	Cesium *or* Caesium	4.3	UN1407	I	4.3	A7, A19, IB4, IP1, N34, N40	None	211	242	Forbidden	15 kg	D	52
	Cesium nitrate *or* Caesium nitrate	5.1	UN1451	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
D	Charcoal *briquettes, shell, screenings, wood, etc.*	4.2	NA1361	III	4.2	IB8, T1, TP33	151	213	240	25 kg	100 kg	A	12
	Charges, bursting, plastics bonded	1.1D	UN0457	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Charges, bursting, plastics bonded	1.2D	UN0458	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Charges, bursting, plastics bonded	1.4D	UN0459	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Charges, bursting, plastics bonded	1.4S	UN0460	II	1.4S		None	62	None	25 kg	100 kg	05	
	Charges, demolition	1.1D	UN0048	II	1.1D		None	62	None	Forbidden	Forbidden	03	
	Charges, depth	1.1D	UN0056	II	1.1D		None	62	None	Forbidden	Forbidden	03	
	Charges, expelling, explosive, for fire extinguishers, see Cartridges, power device												
	Charges, explosive, commercial *without detonator*	1.1D	UN0442	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Charges, explosive, commercial *without detonator*	1.2D	UN0443	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Charges, explosive, commercial *without detonator*	1.4D	UN0444	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Charges, explosive, commercial *without detonator*	1.4S	UN0445	II	1.4S		None	62	None	25 kg	100 kg	05	
	Charges, propelling	1.1C	UN0271	II	1.1C		None	62	None	Forbidden	Forbidden	07	
	Charges, propelling	1.3C	UN0272	II	1.3C		None	62	None	Forbidden	Forbidden	07	
	Charges, propelling	1.2C	UN0415	II	1.2C		None	62	None	Forbidden	Forbidden	07	
	Charges, propelling	1.4C	UN0491	II	1.4C		None	62	None	Forbidden	75 kg	06	
	Charges, propelling, for cannon	1.3C	UN0242	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Charges, propelling, for cannon	1.1C	UN0279	II	1.1C		None	62	None	Forbidden	Forbidden	10	
	Charges, propelling, for cannon	1.2C	UN0414	II	1.2C		None	62	None	Forbidden	Forbidden	10	
	Charges, shaped, flexible, linear	1.4D	UN0237	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Charges, shaped, flexible, linear	1.1D	UN0288	II	1.1D	101	None	62	None	Forbidden	Forbidden	07	
	Charges, shaped, *without detonator*	1.1D	UN0059	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Charges, shaped, *without detonator*	1.2D	UN0439	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Charges, shaped, *without detonator*	1.4D	UN0440	II	1.4D		None	62	None	Forbidden	75 kg	06	

	Charges, shaped, *without detonator*	1.4S	UN0441	II	1.4S		None	62	None	25 kg	100 kg	05	
	Charges, supplementary explosive	1.1D	UN0060	II	1.1D		None	62	None	Forbidden	Forbidden	10	
D	Chemical kit	8	NA1760	II	8		154	161	None	1 L	30 L	B	40
	Chemical kits	9	UN3316		9	15	161	161	None	10 kg	10 kg	A	
	Chloral, anhydrous, stabilized	6.1	UN2075	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
	Chlorate and borate mixtures	5.1	UN1458	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
				III	5.1	A9, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Chlorate and magnesium chloride mixture solution	5.1	UN3407	II	5.1	A9, IB2, N34, T4, TP1	152	202	242	1 L	5 L	A	56, 58, 133
				III	5.1	A9, IB2, N34, T4, TP1	152	203	241	2.5 L	30 L	A	56, 58, 133
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	III	5.1	A9, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Chlorate of potash, see Potassium chlorate												
	Chlorate of soda, see Sodium chlorate												
	Chlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3210	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
				III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Chlorates, inorganic, n.o.s.	5.1	UN1461	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Chloric acid aqueous solution, *with not more than 10 percent chloric acid*	5.1	UN2626	II	5.1	IB2, T4, TP1	None	229	None	Forbidden	Forbidden	D	56, 58
	Chloride of phosphorus, see Phosphorus trichloride												
	Chloride of sulfur, see Sulfur chloride												
	Chlorinated lime, see Calcium hypochlorite mixtures, *etc*												
	Chlorine	2.3	UN1017		2.3, 8	2, B9, B14, T50, TP19	None	304	314, 315.	Forbidden	Forbidden	D	40, 51, 55, 62, 68, 89, 90
	Chlorine azide	Forbidden											
D	Chlorine dioxide, hydrate, frozen	5.1	NA9191	II	5.1, 6.1.		None	229	None	Forbidden	Forbidden	E	
	Chlorine dioxide (not hydrate)	Forbidden											
	Chlorine pentafluoride	2.3	UN2548		2.3, 5.1, 8.	1, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 89, 90
	Chlorine trifluoride	2.3	UN1749		2.3, 5.1, 8.	2, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 89, 90
	Chlorite solution	8	UN1908	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2, TP24	154	202	242	1 L	30 L	B	26, 44, 89, 100, 141
				III	8	A3, A6, A7, B2, IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26, 44, 89, 100, 141
	Chlorites, inorganic, n.o.s.	5.1	UN1462	II	5.1	A7, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	1-Chloro-1,1-difluoroethane *or* Refrigerant gas R 142b	2.1	UN2517		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	3-Chloro-4-methylphenyl isocyanate, liquid	6.1	UN2236	II	6.1	IB2	153	202	243	5 L	60 L	B	40
	3-Chloro-4-methylphenyl isocyanate, solid	6.1	UN3428	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	1-Chloro-1,2,2,2-tetrafluoroethane*or* Refrigerant gas R 124	2.2	UN1021		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	4-Chloro-o-toluidine hydrochloride, solid	6.1	UN1579	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	4-Chloro-o-toluidine hydrochloride, solution	6.1	UN3410	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	1-Chloro-2,2,2-trifluoroethane *or* Refrigerant gas R 133a	2.2	UN1983		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Chloroacetic acid, molten	6.1	UN3250	II	6.1, 8	IB1, T7, TP3, TP28	None	202	243	Forbidden	Forbidden	C	40
	Chloroacetic acid, solid	6.1	UN1751	II	6.1, 8	A3, A7, IB8, IP4, N34, T3, TP33	153	212	242	15 kg	50 kg	A	40
	Chloroacetic acid, solution	6.1	UN1750	II	6.1, 8	A7, IB2, N34, T7, TP2	153	202	243	1 L	30 L	C	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Chloroacetone, stabilized	6.1	UN1695	I	6.1, 3, 8.	2, B9, B14, B32, B74, N12, N32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
	Chloroacetone (unstabilized)	Forbidden											
+	Chloroacetonitrile	6.1	UN2668	II	6.1, 3	2, B9, B14, B32, B74, IB99, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40, 52
	Chloroacetophenone, liquid *CN*	6.1	UN3416	II	6.1	A3, IB2, N12, N32, N33, T7, TP2, TP13	None	202	243	Forbidden	60 L	D	12, 40
	Chloroacetophenone, solid (CN)	6.1	UN1697	II	6.1	A3, IB8, IP2, IP4, N12, N32, N33, N34, T3, TP33 TP2, TP13	None	212	None	Forbidden	100 kg	D	12, 40
	Chloroacetyl chloride	6.1	UN1752	I	6.1, 8	2, B3, B8, B9, B14, B32, B74, B77, N34, N43, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloroanilines, liquid	6.1	UN2019	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	52
	Chloroanilines, solid	6.1	UN2018	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Chloroanisidines	6.1	UN2233	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorobenzene	3	UN1134	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Chlorobenzol, see Chlorobenzene												
	Chlorobenzotrifluorides	3	UN2234	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Chlorobenzyl chlorides, liquid	6.1	UN2235	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Chlorobenzyl chlorides, solid	6.1	UN3427	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorobutanes	3	UN1127	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Chlorocresols solution	6.1	UN2669	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12
				III	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	A	12
	Chlorocresols, solid	6.1	UN3437	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12
	Chlorodifluorobromomethane *or* Refrigerant gas R 12B1	2.2	UN1974		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Chlorodifluoromethane and chloropentafluoroethane mixture *or* Refrigerant gas R 502 *with fixed boiling point, with approximately 49 percent chlorodifluoromethane.*	2.2	UN1973		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Chlorodifluoromethane *or* Refrigerant gas R 22	2.2	UN1018		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
+	Chlorodinitrobenzenes, liquid.	6.1	UN1577	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	91
	Chlorodinitro-benzenes, solid	6.1	UN3441	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
	2-Chloroethanal	6.1	UN2232	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloroform	6.1	UN1888	III	6.1	IB3, N36, T7, TP2	153	203	241	60 L	220 L	A	40
G	Chloroformates, toxic, corrosive, flammable, n.o.s.	6.1	UN2742	II	6.1, 8, 3.	5, IB1, T7, TP2	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
G	Chloroformates, toxic, corrosive, n.o.s.	6.1	UN3277	II	6.1, 8	IB2, T8, TP2, TP13, TP28	153	202	243	1 L	30 L	A	12, 13, 25, 40
	Chloromethyl chloroformate	6.1	UN2745	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	Chloromethyl ethyl ether	3	UN2354	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Chloronitroanilines	6.1	UN2237	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
+	Chloronitrobenzene, liquid *ortho*	6.1	UN3409	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	

+	Chloronitrobenzenes, solid *meta or para*	6.1	UN1578	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Chloronitrotoluenes, liquid	6.1	UN2433	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	44, 89, 100, 141
	Chloronitrotoluenes, solid	6.1	UN3457	III	6.1	IB8, IP3,T1, TP33	153	213	240	25 kg	200 kg	A	
	Chloropentafluoroethane *or* Refrigerant gas R 115	2.2	UN1020		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Chlorophenolates, liquid *or* Phenolates, liquid	8	UN2904	III	8	IB3	154	203	241	5 L	60 L	A	
	Chlorophenolates, solid *or* Phenolates, solid	8	UN2905	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Chlorophenols, liquid	6.1	UN2021	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Chlorophenols, solid	6.1	UN2020	III	6.1	IB8, IP3, T1, TP1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorophenyltrichlorosilane	8	UN1753	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
+	Chloropicrin	6.1	UN1580	I	6.1	2, B7, B9, B14, B32, B46, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloropicrin and methyl bromide mixtures	2.3	UN1581		2.3	2, B9, B14, T50	None	193	314, 315.	Forbidden	Forbidden	D	25, 40
	Chloropicrin and methyl chloride mixtures	2.3	UN1582		2.3	2, T50	None	193	245	Forbidden	Forbidden	D	25, 40
	Chloropicrin mixture, flammable (pressure not exceeding 14.7 psia at 115 degrees F flash point below 100 degrees F) see Toxic liquids, flammable, *etc.*												
	Chloropicrin mixtures, n.o.s.	6.1	UN1583	I	6.1	5	None	201	243	Forbidden	Forbidden	C	40
				II	6.1	IB2	153	202	243	Forbidden	Forbidden	C	40
				III	6.1	IB3	153	203	241	Forbidden	Forbidden	C	40
D	Chloropivaloyl chloride	6.1	NA9263	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	Chloroplatinic acid, solid	8	UN2507	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Chloroprene, stabilized	3	UN1991	I	3, 6.1	B57, T14, TP2, TP13	None	201	243	Forbidden	30 L	D	40
	Chloroprene, uninhibited	Forbidden											
	1-Chloropropane	3	UN1278	II	3	IB2, IP8, N34, T7, TP2	None	202	242	Forbidden	60 L	E	
	2-Chloropropane	3	UN2356	I	3	N36, T11, TP2, TP13	150	201	243	1 L	30 L	E	
	3-Chloropropanol-1	6.1	UN2849	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	2-Chloropropene	3	UN2456	I	3	A3, N36, T11, TP2	150	201	243	1 L	30 L	E	
	2-Chloropropionic acid	8	UN2511	III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	8
	2-Chloropyridine	6.1	UN2822	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Chlorosilanes, corrosive, flammable, n.o.s.	8	UN2986	II	8, 3	IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	40
	Chlorosilanes, corrosive, n.o.s.	8	UN2987	II	8	B2, IB2, T14, TP2, TP27	154	202	242	1 L	30 L	C	40
	Chlorosilanes, flammable, corrosive, n.o.s.	3	UN2985	II	3, 8	IB1, T11, TP2, TP13, TP27	150	201	243	1 L	5 L	B	40
	Chlorosilanes, toxic, corrosive, n.o.s.	6.1	UN3361	II	6.1, 8	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40
	Chlorosilanes, toxic, corrosive, flammable, n.o.s.	6.1	UN3362	II	6.1, 3, 8.	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40, 125
	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	4.3	UN2988	I	4.3, 3, 8.	A2, T10, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100
+	Chlorosulfonic acid *(with or without sulfur trioxide)*	8	UN1754	I	8, 6.1	2, B9, B10, B14, B32, B74, T20, TP2, TP12, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Chlorotoluenes	3	UN2238	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Chlorotoluidines, liquid	6.1	UN3429	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Chlorotoluidines, solid	6.1	UN2239	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorotrifluoromethane and trifluoromethane azeotropic mixture *or* Refrigerant gas R 503 *with approximately 60 percent chlorotrifluoromethane.*	2.2	UN2599		2.2		306	304	314, 315.	75 kg	150 kg	A	
	Chlorotrifluoromethane *or* Refrigerant gas R 13	2.2	UN1022		2.2		306	304	314, 315.	75 kg	150 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Chromic acid solution	8	UN1755	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40, 44, 89, 100, 141
				III	8	IB3, T4, TP1, TP12	154	203	241	5 L	60 L	C	40, 44, 89, 100, 141
	Chromic anhydride, see Chromium trioxide, anhydrous												
	Chromic fluoride, solid	8	UN1756	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	Chromic fluoride, solution	8	UN1757	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Chromium nitrate	5.1	UN2720	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Chromium oxychloride	8	UN1758	I	8	A3, A6, A7, B10, N34, T10, TP2, TP12	None	201	243	0.5 L	2.5 L	C	40, 66, 74, 89, 90
	Chromium trioxide, anhydrous	5.1	UN1463	II	5.1, 8	IB8, IP4, T3, TP33	None	212	242	5 kg	25 kg	A	
	Chromosulfuric acid	8	UN2240	I	8	A3, A6, A7, B4, B6, N34, T10, TP2, TP12, TP13	None	201	243	0.5 L	2.5 L	B	40, 66, 74, 89, 90
	Chromyl chloride, see Chromium oxychloride												
	Cigar and cigarette lighters, charged with fuel, see Lighters *or* Lighter refills *containing flammable gas.*.												
	Coal briquettes, hot	Forbidden											
	Coal gas, compressed	2.3	UN1023		2.3, 2.1.	3	None	302	314, 315.	Forbidden	Forbidden	D	40
	Coal tar distillates, flammable	3	UN1136	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Coal tar dye, corrosive, liquid, n.o.s, see Dyes, liquid *or* solid, n.o.s. *or* Dye intermediates, liquid *or* solid, corrosive, n.o.s..												
	Coating solution (*includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining*).	3	UN1139	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	
				II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cobalt naphthenates, powder	4.1	UN2001	III	4.1	A19, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Cobalt resinate, precipitated	4.1	UN1318	III	4.1	A1, A19, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	
	Coke, hot	Forbidden											
	Collodion, see Nitrocellulose *etc*												
D G	Combustible liquid, n.o.s.	Comb liq	NA1993	III	None	IB3, T1, T4, TP1	150	203	241	60 L	220 L	A	
G	Components, explosive train, n.o.s.	1.2B	UN0382	II	1.2B	101	None	62	None	Forbidden	Forbidden	11	
G	Components, explosive train, n.o.s.	1.4B	UN0383	II	1.4B	101	None	62	None	Forbidden	75 kg	06	
G	Components, explosive train, n.o.s.	1.4S	UN0384	II	1.4S	101	None	62	None	25 kg	100 kg	05	
G	Components, explosive train, n.o.s.	1.1B	UN0461	II	1.1B	101	None	62	None	Forbidden	Forbidden	11	
	Composition B, see Hexolite, *etc*												
D G	Compounds, cleaning liquid	8	NA1760	I	8	A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	8	B2, IB2, N37, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
				III	8	IB3, N37, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
D G	Compounds, cleaning liquid	3	NA1993	I	3	T11, TP1	150	201	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
D G	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	8	NA1760	I	8	A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40

	.....	.....		II	8	B2, IB2, N37, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
	.....	.....		III	8	IB3, N37, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
D G	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	3	NA1993	I	3	T11, TP1	150	201	243	1 L	30 L	E	.....
	.....	.....		II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
D G	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	6.1	NA2810	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Compressed gas, flammable, n.o.s.	2.1	UN1954	.....	2.1		306	302, 305.	314, 315.	Forbidden	150 kg	D	40
G	Compressed gas, n.o.s.	2.2	UN1956	.....	2.2		306, 307.	302, 305.	314, 315.	75 kg	150 kg	A	.....
G	Compressed gas, oxidizing, n.o.s.	2.2	UN3156	.....	2.2, 5.1.	A14	306	302	314, 315.	75 kg	150 kg	D	.....
G I	Compressed gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3304	.....	2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3304	.....	2.3, 8	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3304	.....	2.3, 8	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3304	.....	2.3, 8	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3305	.....	2.3, 2.1, 8.	1	None	192	245	Forbidden	Forbidden	D	17, 40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3305	.....	2.3, 2.1, 8.	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	17, 40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3305	.....	2.3, 2.1, 8.	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	17, 40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3305	.....	2.3, 2.1, 8.	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, n.o.s. *Inhalation hazard Zone A*	2.3	UN1953	.....	2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. *Inhalation hazard Zone B*	2.3	UN1953	.....	2.3, 2.1.	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone C*	2.3	UN1953	.....	2.3, 2.1.	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone D*	2.3	UN1953	.....	2.3, 2.1.	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. *Inhalation Hazard Zone A*	2.3	UN1955	.....	2.3	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. *Inhalation Hazard Zone B*	2.3	UN1955	.....	2.3	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. *Inhalation Hazard Zone C*	2.3	UN1955	.....	2.3	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. *Inhalation Hazard Zone D*	2.3	UN1955	.....	2.3	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, oxdizing, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3306	.....	2.3, 5.1, 8.	1	None	192	244	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3306	.....	2.3, 5.1, 8.	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3306	.....	2.3, 5.1, 8.	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3306	.....	2.3, 5.1, 8.	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3303	.....	2.3, 5.1.	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3303	.....	2.3, 5.1.	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3303	.....	2.3, 5.1.	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3303	.....	2.3, 5.1.	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Consumer commodity	ORM-D			None		156, 306.	156, 306.	None	30 kg gross	30 kg gross	A	
	Contrivances, water-activated, *with burster, expelling charge or propelling charge*	1.2L	UN0248	II	1.2L	101	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Contrivances, water-activated, *with burster, expelling charge or propelling charge*	1.3L	UN0249	II	1.3L	101	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Copper acetoarsenite	6.1	UN1585	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Copper acetylide	Forbidden											
	Copper amine azide	Forbidden											
	Copper arsenite	6.1	UN1586	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Copper based pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2776	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Copper based pesticides, liquid, toxic	6.1	UN3010	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Copper based pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3009	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Copper based pesticides, solid, toxic	6.1	UN2775	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Copper chlorate	5.1	UN2721	II	5.1	A1, IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Copper chloride	8	UN2802	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Copper cyanide	6.1	UN1587	II	6.1	IB8, IP2, IP4, T3, TP33	153	204	242	25 kg	100 kg	A	52
	Copper selenate, see Selenates *or* Selenites												
	Copper selenite, see Selenates *or* Selenites												
	Copper tetramine nitrate	Forbidden											
A W	Copra	4.2	UN1363	III	4.2	IB8, IP3, IP7	None	213	241	Forbidden	Forbidden	A	13, 19, 48, 119
	Cord, detonating, *flexible*	1.1D	UN0065	II	1.1D	102	63(a)	62	None	Forbidden	Forbidden	07	
	Cord, detonating, *flexible*	1.4D	UN0289	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Cord detonating *or* Fuse detonating *metal clad*	1.2D	UN0102	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Cord, detonating *or* Fuse, detonating *metal clad*	1.1D	UN0290	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Cord, detonating, mild effect *or* Fuse, detonating, mild effect *metal clad*	1.4D	UN0104	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Cord, igniter	1.4G	UN0066	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Cordeau detonant fuse, see Cord, detonating, *etc;* Cord, detonating, *flexible*												
	Cordite, see Powder, smokeless												
G	Corrosive liquid, acidic, inorganic, n.o.s.	8	UN3264	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	8	A6, B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
G	Corrosive liquid, acidic, organic, n.o.s.	8	UN3265	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40

	.....	.....		II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
	.....	.....		III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
G	Corrosive liquid, basic, inorganic, n.o.s.	8	UN3266	I	8	A6, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40, 52
	.....	.....		II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40, 52
	.....	.....		III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
G	Corrosive liquid, basic, organic, n.o.s.	8	UN3267	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40, 52
	.....	.....		II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40, 52
	.....	.....		III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
G	Corrosive liquid, self-heating, n.o.s.	8	UN3301	I	8, 4.2	A6, B10	None	201	243	0.5 L	2.5 L	D	.....
	.....	.....		II	8, 4.2	B2, IB1	154	202	242	1 L	30 L	D	.....
G	Corrosive liquids, flammable, n.o.s.	8	UN2920	I	8, 3	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	C	25, 40
	.....	.....		II	8, 3	B2, IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	25, 40
G	Corrosive liquids, n.o.s.	8	UN1760	I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
	.....	.....		II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
	.....	.....		III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
G	Corrosive liquids, oxidizing, n.o.s.	8	UN3093	I	8, 5.1	A6, A7	None	201	243	Forbidden	2.5 L	C	89
	.....	.....		II	8, 5.1	A6, A7, IB2	None	202	243	1 L	30 L	C	89
G	Corrosive liquids, toxic, n.o.s.	8	UN2922	I	8, 6.1	A7, A6, B10, T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	B	40
	.....	.....		II	8, 6.1	B3, IB2, T7, TP2	154	202	243	1 L	30 L	B	40
	.....	.....		III	8, 6.1	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	B	40
G	Corrosive liquids, water-reactive, n.o.s.	8	UN3094	I	8, 4.3	A6, A7	None	201	243	Forbidden	1 L	E	.....
	.....	.....		II	8, 4.3	A6, A7	None	202	243	1 L	5 L	E	.....
G	Corrosive solid, acidic, inorganic, n.o.s.	8	UN3260	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	.....
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	.....
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
G	Corrosive solid, acidic, organic, n.o.s.	8	UN3261	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	.....
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	.....
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
G	Corrosive solid, basic, inorganic, n.o.s.	8	UN3262	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
G	Corrosive solid, basic, organic, n.o.s.	8	UN3263	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
G	Corrosive solids, flammable, n.o.s.	8	UN2921	I	8, 4.1	IB6, T6, TP33	None	211	242	1 kg	25 kg	B	12, 25
	.....	.....		II	8, 4.1	IB8, IP2, IP4, T3, TP33	None	212	242	15 kg	50 kg	B	12, 25
G	Corrosive solids, n.o.s.	8	UN1759	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	.....
	.....	.....		II	8	128, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	.....	.....		III	8	128, IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
G	Corrosive solids, oxidizing, n.o.s.	8	UN3084	I	8, 5.1	T6, TP33	None	211	242	1 kg	25 kg	C	.....
	.....	.....		II	8, 5.1	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Corrosive solids, self-heating, n.o.s.	8	UN3095	I	8, 4.2	T6, TP33	None	211	243	1 kg	25 kg	C	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		II	8, 4.2	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Corrosive solids, toxic, n.o.s.	8	UN2923	I	8, 6.1	IB7, T6, TP33	None	211	242	1 kg	25 kg	B	40
	.....	.....		II	8, 6.1	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	40
	.....	.....		III	8, 6.1	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	B	40, 95
G	Corrosive solids, water-reactive, n.o.s.	8	UN3096	I	8, 4.3	IB4, IP1, T6, TP33	None	211	243	1 kg	25 kg	D	.....
	.....	.....		II	8, 4.3	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	.....
D W	Cotton	9	NA1365	.....	9	137, IB8, IP2, IP4, W41	None	None	None	No limit	No limit	A	.....
A W	Cotton waste, oily	4.2	UN1364	III	4.2	IB8, IP3, IP7	None	213	None	Forbidden	Forbidden	A	54
A I W	Cotton, wet	4.2	UN1365	III	4.2	IB8, IP3, IP7	None	204	241	Forbidden	Forbidden	A	.....
	Coumarin derivative pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN3024	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
	.....	.....		II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Coumarin derivative pesticides, liquid, toxic	6.1	UN3026	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
	Coumarin derivative pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3025	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1, 3	B1, IB3, T7, TP1, TP28	153	203	242	60 L	220 L	A	40
	Coumarin derivative pesticides, solid, toxic	6.1	UN3027	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Cresols, liquid	6.1	UN2076	II	6.1, 8	IB2, IP2, IP4, T7, TP2	153	202	243	1 L	30 L	B	.....
	Cresols, solid	6.1	UN3455	II	6.1, 8	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	B	.....
	Cresylic acid	6.1	UN2022	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	B	.....
	Crotonaldehyde, stabilized	6.1	UN1143	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	Crotonic acid *liquid*	8	UN2823	III	8	IB8, T1	154	203	241	5 L	60 L	A	12
	Crotonic acid, *solid*	8	UN2823	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
	Crotonylene	3	UN1144	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	Cupriethylenediamine solution	8	UN1761	II	8, 6.1	IB2, T7, TP2	154	202	243	1 L	30 L	A	.....
	.....	.....		III	8, 6.1	IB3, T7, TP1, TP28	154	203	242	5 L	60 L	A	95
	Cutters, cable, explosive	1.4S	UN0070	II	1.4S ...		None	62	None	25 kg	100 kg	05	.....
	Cyanide or cyanide mixtures, dry, see Cyanides, inorganic, solid, n.o.s.	.....			.....		.....	.....	.....	.....	.....		.....
	Cyanide solutions, n.o.s.	6.1	UN1935	I	6.1	B37, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
	.....	.....		II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40, 52
	.....	.....		III	6.1	IB3, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	40, 52
	Cyanides, inorganic, solid, n.o.s.	6.1	UN1588	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52

			II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
			III	6.1	IB8, IP3, N74, N75, T1, TP33	153	213	240	100 kg	200 kg	A	52
Cyanogen	2.3	UN1026		2.3, 2.1.	2	None	304	245	Forbidden	Forbidden	D	40
Cyanogen bromide	6.1	UN1889	I	6.1, 8	A6, A8, T6, TP33	None	211	242	1 kg	15 kg	D	40
Cyanogen chloride, stabilized	2.3	UN1589		2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
Cyanuric chloride	8	UN2670	II	8	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	A	12, 40
Cyanuric triazide	Forbidden											
Cyclobutane	2.1	UN2601		2.1		306	304	314, 315.	Forbidden	150 kg	B	40
Cyclobutyl chloroformate	6.1	UN2744	II	6.1, 8, 3.	IB1, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
1,5,9-Cyclododecatriene	6.1	UN2518	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
Cycloheptane	3	UN2241	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Cycloheptatriene	3	UN2603	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
Cycloheptene	3	UN2242	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
Cyclohexane	3	UN1145	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
Cyclohexanone	3	UN1915	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclohexene	3	UN2256	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
Cyclohexenyltrichlorosilane	8	UN1762	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Cyclohexyl acetate	3	UN2243	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclohexyl isocyanate	6.1	UN2488	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Cyclohexyl mercaptan	3	UN3054	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40, 95
Cyclohexylamine	8	UN2357	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	40
Cyclohexyltrichlorosilane	8	UN1763	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Cyclonite and cyclotetramethylenetetranitramine mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclonite and HMX mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclonite and octogen mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclonite, *see* Cyclotrimethylenetrinitramine, *etc*												
Cyclooctadiene phosphines, *see* 9-Phosphabicyclononanes												
Cyclooctadienes	3	UN2520	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclooctatetraene	3	UN2358	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Cyclopentane	3	UN1146	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
Cyclopentane, methyl, see Methylcyclopentane												
Cyclopentanol	3	UN2244	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentanone	3	UN2245	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentene	3	UN2246	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	
Cyclopropane	2.1	UN1027		2.1	T50	306	304	314, 315.	Forbidden	150 kg	E	40
Cyclotetramethylene tetranitramine (dry or unphlegmatized) (HMX)	Forbidden											
Cyclotetramethylenetetranitramine, desensitized *or* Octogen, desensitized *or* HMX, desensitized	1.1D	UN0484	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclotetramethylenetetranitramine, wetted *or* HMX, wetted *or* Octogen, wetted *with not less than 15 percent water, by mass.*	1.1D	UN0226	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclotrimethylenetrinitramine and cyclotetramethylenetetranitramine mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclotrimethylenenitramine and octogen, mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclotrimethylenetrinitramine and HMX mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
Cyclotrimethylenetrinitramine, desensitized *or* Cyclonite, desensitized *or* Hexogen, desensitized *or* RDX, desensitized.	1.1D	UN0483	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclotrimethylenetrinitramine, wetted *or* Cyclonite, wetted *or* Hexogen, wetted *or* RDX, wetted *with not less than 15 percent water by mass.*	1.1D	UN0072	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cymenes	3	UN2046	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Dangerous Goods in Machinery *or* Dangerous Goods in Apparatus	9	UN3363			136	None	222	None	No limit	No limit	A	
Decaborane	4.1	UN1868	II	4.1, 6.1.	A19, A20, IB6, IP2, T3, TP33	None	212	None	Forbidden	50 kg	A	74
Decahydronaphthalene	3	UN1147	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
n-Decane	3	UN2247	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Deflagrating metal salts of aromatic nitroderivatives, n.o.s.	1.3C	UN0132	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
	Delay electric igniter, see Igniters												
	Depth charges, see Charges, depth												
G	Desensitized explosive, liquid, n.o.s.	3	UN3379	I	3	164	None	201	None	Forbidden	Forbidden	D	36
G	Desensitized explosive, solid, n.o.s.	4.1	UN3380	I	4.1	164	None	211	None	Forbidden	Forbidden	D	28, 36
	Detonating relays, see Detonators, *etc*												
	Detonator assemblies, non-electric *for blasting*	1.1B	UN0360	II	1.1B		None	62	None	Forbidden	Forbidden	11	
	Detonator assemblies, non-electric, *for blasting*	1.4B	UN0361	II	1.4B	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	
	Detonator, assemblies, non-electric *for blasting*	1.4S	UN0500	II	1.4S		63(f), 63(g).	62	None	25 kg	100 kg	05	
	Detonators, electric, *for blasting*	1.1B	UN0030	II	1.1B		63(f), 63(g).	62	None	Forbidden	Forbidden	11	
	Detonators, electric, *for blasting*	1.4B	UN0255	II	1.4B	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	
	Detonators, electric *for blasting*	1.4S	UN0456	II	1.4S		63(f), 63(g).	62	None	25 kg	100 kg	05	
	Detonators for ammunition	1.1B	UN0073	II	1.1B		None	62	None	Forbidden	Forbidden	11	
	Detonators for ammunition	1.2B	UN0364	II	1.2B		None	62	None	Forbidden	Forbidden	11	
	Detonators for ammunition	1.4B	UN0365	II	1.4B	103	None	62	None	Forbidden	75 kg	06	
	Detonators for ammunition	1.4S	UN0366	II	1.4S		None	62	None	25 kg	100 kg	05	
	Detonators, non-electric, *for blasting*	1.1B	UN0029	II	1.1B		None	62	None	Forbidden	Forbidden	11	
	Detonators, non-electric, *for blasting*	1.4B	UN0267	II	1.4B	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	
	Detonators, non-electric,*for blasting*	1.4S	UN0455	II	1.4S		63(f), 63(g).	62	None	25 kg	100 kg	5	
	Deuterium, compressed	2.1	UN1957		2.1		306	302	None	Forbidden	150 kg	E	40
	Devices, small, hydrocarbon gas powered *or* Hydrocarbon gas refills for small devices *with release device.*	2.1	UN3150		2.1		306	304	None	1 kg	15 kg	B	40
	Di-n-amylamine	3	UN2841	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Di-n-butyl peroxydicarbonate, with more than 52 percent in solution	Forbidden											
	Di-n-butylamine	8	UN2248	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	
	2,2-Di-(tert-butylperoxy) butane, with more than 55 percent in solution	Forbidden											
	Di-(tert-butylperoxy) phthalate, with more than 55 percent in solution	Forbidden											
	2,2-Di-(4,4-di-tert-butylperoxycyclohexyl) propane, with more than 42 percent with inert solid	Forbidden											
	Di-2,4-dichlorobenzoyl peroxide, with more than 75 percent with water	Forbidden											
	1,2-Di-(dimethylamino)ethane	3	UN2372	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Di-2-ethylhexyl phosphoric acid, see Diisooctyl acid phosphate												
	Di-(1-hydroxytetrazole) (dry)	Forbidden											
	Di-(1-naphthoyl) peroxide	Forbidden											
	a,a'-Di-(nitroxy) methylether	Forbidden											
	Di-(beta-nitroxyethyl) ammonium nitrate	Forbidden											
	Diacetone alcohol	3	UN1148	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diacetone alcohol peroxides, with more than 57 percent in solution with more than 9 percent hydrogen peroxide, less than 26 percent diacetone alcohol and less than 9 percent water; total active oxygen content more than 9 percent by mass.	Forbidden											
	Diacetyl, see Butanedione												
	Diacetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Diagnostic specimen	6.2				A82	134	199	None	4 L or 4 kg	4 L or 4 kg	A	40
	Diallylamine	3	UN2359	II	3, 6.1, 8.	IB2, T7, TP1	150	202	243	1 L	5 L	B	21, 40, 100
	Diallylether	3	UN2360	II	3, 6.1	IB2, N12, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	4,4'-Diaminodiphenyl methane	6.1	UN2651	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	p-Diazidobenzene	Forbidden											
	1,2-Diazidoethane	Forbidden											
	1,1'-Diazoaminonaphthalene	Forbidden											
	Diazoaminotetrazole (dry)	Forbidden											
	Diazodinitrophenol (dry)	Forbidden											
	Diazodinitrophenol, wetted *with not less than 40 percent water or mixture of alcohol and water, by mass.*	1.1A	UN0074	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Diazodiphenylmethane	Forbidden											
	Diazonium nitrates (dry)	Forbidden											

	Diazonium perchlorates (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	1,3-Diazopropane	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Dibenzyl peroxydicarbonate, with more than 87 percent with water	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Dibenzyldichlorosilane	8	UN2434	II	8	B2, IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
	Diborane	2.3	UN1911	.....	2.3, 2.1.	1	None	302	None	Forbidden	Forbidden	D	40, 57
D	Diborane mixtures	2.1	NA1911	.....	2.1	5	None	302	245	Forbidden	Forbidden	D	40, 57
	Dibromoacetylene	Forbidden			.....		.....	.....	.....	.....	.....		.....
	1,2-Dibromobutan-3-one	6.1	UN2648	II	6.1	IB2	153	202	243	5 L	60 L	B	40
	Dibromochloropropane	6.1	UN2872	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
	.....	.....		III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
A	Dibromodifluoromethane, *R12B2*	9	UN1941	III	None	T11, TP2	155	203	241	100 L	220 L	A	25
	1,2-Dibromoethane, see Ethylene dibromide	.....			.....		.....	.....	.....	.....	.....		.....
	Dibromomethane	6.1	UN2664	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Dibutyl ethers	3	UN1149	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Dibutylaminoethanol	6.1	UN2873	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	N,N'-Dichlorazodicarbonamidine (salts of) (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	1,1-Dichloro-1-nitroethane	6.1	UN2650	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12, 40, 74
D	3,5-Dichloro-2,4,6-trifluoropyridine	6.1	NA9264	I	6.1	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	40
	Dichloroacetic acid	8	UN1764	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	A	.....
	1,3-Dichloroacetone	6.1	UN2649	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	12, 40
	Dichloroacetyl chloride	8	UN1765	II	8	A3, A6, A7, B2, B6, IB2, N34, T7, TP2	154	202	242	1 L	30 L	D	40
	Dichloroacetylene	Forbidden			.....		.....	.....	.....	.....	.....		.....
+	Dichloroanilines, liquid	6.1	UN1590	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Dichloroanilines, solid	6.1	UN3442	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
+	o-Dichlorobenzene	6.1	UN1591	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	2,2'-Dichlorodiethyl ether	6.1	UN1916	II	6.1, 3	IB2, N33, N34, T7, TP2	153	202	243	5 L	60 L	A	.....
	Dichlorodifluoromethane and difluoroethane azeotropic mixture *or* Refrigerant gas R 500 *with approximately 74 percent dichlorodifluoromethane.*	2.2	UN2602	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Dichlorodifluoromethane *or* Refrigerant gas R 12	2.2	UN1028	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Dichlorodimethyl ether, symmetrical	6.1	UN2249	I	6.1, 3		None	201	243	Forbidden	Forbidden		40
	1,1-Dichloroethane	3	UN2362	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	1,2-Dichloroethane, see Ethylene dichloride	.....			.....		.....	.....	.....	.....	.....		.....
	Dichloroethyl sulfide	Forbidden			.....		.....	.....	.....	.....	.....		.....
	1,2-Dichloroethylene	3	UN1150	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	B	.....
	Dichlorofluoromethane *or* Refrigerant gas R21	2.2	UN1029	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Dichloroisocyanuric acid, dry *or* Dichloroisocyanuric acid salts	5.1	UN2465	II	5.1	28, IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13
	Dichloroisopropyl ether	6.1	UN2490	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	.....
	Dichloromethane	6.1	UN1593	III	6.1	IB3, IP8, N36, T7, TP2	153	203	241	60 L	220 L	A	.....
	Dichloropentanes	3	UN1152	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Dichlorophenyl isocyanates	6.1	UN2250	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	25, 40, 48
	Dichlorophenyltrichlorosilane	8	UN1766	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	1,2-Dichloropropane	3	UN1279	II	3	IB2, N36, T4, TP1	150	202	242	5 L	60 L	B	.....
	1,3-Dichloropropanol-2	6.1	UN2750	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12, 40
	Dichloropropene and propylene dichloride mixture, see 1,2- Dichloropropane	.....			.....		.....	.....	.....	.....	.....		.....
	Dichloropropenes	3	UN2047	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Dichlorosilane	2.3	UN2189	.....	2.3, 2.1, 8.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	17, 40
	1,2-Dichloro-1,1,2,2- tetrafluoroethane *or* Refrigerant gas R 114	2.2	UN1958	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Dichlorovinylchloroarsine	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Dicycloheptadiene, see Bicyclo [2,2,1] hepta-2,5-diene, stabilized	.....			.....		.....	.....	.....	.....	.....		.....
	Dicyclohexylamine	8	UN2565	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Dicyclohexylammonium nitrite	4.1	UN2687	III	4.1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	48
	Dicyclopentadiene	3	UN2048	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Didymium nitrate	5.1	UN1465	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
D	Diesel fuel	3	NA1993	III	None	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
I	Diesel fuel	3	UN1202	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diethanol nitrosamine dinitrate (dry)	Forbidden											
	Diethoxymethane	3	UN2373	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	3,3-Diethoxypropene	3	UN2374	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Diethyl carbonate	3	UN2366	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diethyl cellosolve, see Ethylene glycol diethyl ether												
	Diethyl ether *or* Ethyl ether	3	UN1155	I	3	T11, TP2	150	201	243	1 L	30 L	E	40
	Diethyl ketone	3	UN1156	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Diethyl peroxydicarbonate, with more than 27 percent in solution	Forbidden											
	Diethyl sulfate	6.1	UN1594	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	C	
	Diethyl sulfide	3	UN2375	II	3	IB2, T7, TP1, TP13	None	202	243	5 L	60 L	E	
	Diethylamine	3	UN1154	II	3, 8	A3, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40
	2-Diethylaminoethanol	8	UN2686	II	8, 3	B2, IB2, T7, TP2	None	202	243	1 L	30 L	A	
	3-Diethyamino-propylamine.	3	UN2684	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
+	N, N-Diethylaniline	6.1	UN2432	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Diethylbenzene	3	UN2049	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diethyldichlorosilane	8	UN1767	II	8, 3	A7, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
	Diethylene glycol dinitrate	Forbidden											
	Diethyleneglycol dinitrate, desensitized *with not less than 25 percent non-volatile water-insoluble phlegmatizer, by mass.*	1.1D	UN0075	II	1.1D		None	62	None	Forbidden	Forbidden	13	21E
	Diethylenetriamine	8	UN2079	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40, 52
	N,N-Diethylethylenediamine	8	UN2685	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	
	Diethylgold bromide	Forbidden											
	Diethylthiophosphoryl chloride	8	UN2751	II	8	B2, IB2, T7, TP2	None	212	240	15 kg	50 kg	D	12, 40
	Diethylzinc	4.2	UN1366	I	4.2, 4.3.	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
	Difluorochloroethanes, see 1-Chloro-1,1-difluoroethanes												
	1,1-Difluoroethane *or* Refrigerant gas R 152a	2.1	UN1030		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	1,1-Difluoroethylene *or* Refrigerant gas R 1132a	2.1	UN1959		2.1		306	304	None	Forbidden	150 kg	E	40
	Difluoromethane *or* Refrigerant gas R 32	2.1	UN3252		2.1	T50	306	302	314, 315.	Forbidden	150 kg	D	40
	Difluorophosphoric acid, anhydrous	8	UN1768	II	8	A6, A7, B2, IB2, N5, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	40
	2,3-Dihydropyran	3	UN2376	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	1,8-Dihydroxy-2,4,5,7-tetranitroanthraquinone (chrysamminic acid)	Forbidden											
	Diiodoacetylene	Forbidden											
	Diisobutyl ketone	3	UN1157	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diisobutylamine	3	UN2361	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
	Diisobutylene, isomeric compounds	3	UN2050	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Diisooctyl acid phosphate	8	UN1902	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Diisopropyl ether	3	UN1159	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Diisopropylamine	3	UN1158	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
	Diisopropylbenzene hydroperoxide, with more than 72 percent in solution	Forbidden											
	Diketene, stabilized	6.1	UN2521	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	26, 27, 40
	1,2-Dimethoxyethane	3	UN2252	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	1,1-Dimethoxyethane	3	UN2377	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	B	
	Dimethyl carbonate	3	UN1161	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Dimethyl chlorothiophosphate, see Dimethyl thiophosphoryl chloride												

2,5-Dimethyl-2,5-dihydroperoxy hexane, with more than 82 percent with water	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dimethyl disulfide	3	UN2381	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Dimethyl ether	2.1	UN1033	.....	2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
Dimethyl-N-propylamine	3	UN2266	II	3, 8	IB2, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
Dimethyl sulfate	6.1	UN1595	I	6.1, 8	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Dimethyl sulfide	3	UN1164	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40
Dimethyl thiophosphoryl chloride	6.1	UN2267	II	6.1, 8	IB2, T7, TP2	153	202	243	1 L	30 L	B	25
Dimethylamine, anhydrous	2.1	UN1032	.....	2.1	T50	None	304	314, 315.	Forbidden	150 kg	D	40
Dimethylamine solution	3	UN1160	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	.....
2-Dimethylaminoacetonitrile	3	UN2378	II	3, 6.1	IB2, T7, TP1	150	202	243	1 L	60 L	A	52, 40
2-Dimethylaminoethanol	8	UN2051	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	.....
2-Dimethylaminoethyl acrylate	6.1	UN3302	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	25
2-Dimethylaminoethyl methacrylate	6.1	UN2522	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
N,N-Dimethylaniline	6.1	UN2253	II	6.1	IB1, T7, TP2	153	202	243	5 L	60 L	A	.....
2,3-Dimethylbutane	3	UN2457	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	.....
1,3-Dimethylbutylamine	3	UN2379	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	.....
Dimethylcarbamoyl chloride	8	UN2262	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
Dimethylcyclohexanes	3	UN2263	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
N,N-Dimethylcyclohexylamine	8	UN2264	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
Dimethyldichlorosilane	3	UN1162	II	3, 8	B77, IB2, T7, TP2, TP13	None	202	243	Forbidden	Forbidden	B	40
Dimethyldiethoxysilane	3	UN2380	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Dimethyldioxanes	3	UN2707	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
.....	.....		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
N,N-Dimethylformamide	3	UN2265	III	3	B1, IB3, T2, TP2	150	203	242	60 L	220 L	A	.....
Dimethylhexane dihydroperoxide (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dimethylhydrazine, symmetrical	6.1	UN2382	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 74
Dimethylhydrazine, unsymmetrical	6.1	UN1163	I	6.1, 3, 8.	2, B7, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 38, 40, 100
2,2-Dimethylpropane	2.1	UN2044	.....	2.1		306	304	314, 315.	Forbidden	150 kg	E	40
Dimethylzinc	4.2	UN1370	I	4.2, 4.3.	B11, B16, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Dinitro-o-cresol	6.1	UN1598	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
1,3-Dinitro-5,5-dimethyl hydantoin	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dinitro-7,8-dimethylglycoluril (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
1,3-Dinitro-4,5-dinitrosobenzene	Forbidden			.....		.....	.....	.....	.....	.....		.....
1,4-Dinitro-1,1,4,4-tetramethylolbutanetetranitrate (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
2,4-Dinitro-1,3,5-trimethylbenzene	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dinitroanilines	6.1	UN1596	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
Dinitrobenzenes, liquid	6.1	UN1597	II	6.1	11, IB2, T7, TP2	153	202	243	5 L	60 L	A	91
.....	.....		III	6.1	11, IB3, T7, TP2	153	203	241	60 L	220 L	A	91
Dinitrobenzenes, solid	6.1	UN3443	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
Dinitrochlorobenzene, see Chlorodinitrobenzene	.....			.....		.....	.....	.....	.....	.....		.....
1,2-Dinitroethane	Forbidden			.....		.....	.....	.....	.....	.....		.....
1,1-Dinitroethane (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dinitrogen tetroxide	2.3	UN1067	.....	2.3, 5.1, 8.	1, B7, B14, B45, B46, B61, B66, B67, B77, T50, TP21	None	336	314	Forbidden	Forbidden	D	40, 89, 90
Dinitroglycoluril *or* Dingu	1.1D	UN0489	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
Dinitromethane	Forbidden			.....		.....	.....	.....	.....	.....		.....
Dinitrophenol, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0076	II	1.1D, 6.1.		None	62	None	Forbidden	Forbidden	10	5E
Dinitrophenol solutions	6.1	UN1599	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	36
.....	.....		III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	36
Dinitrophenol, wetted *with not less than 15 percent water, by mass*	4.1	UN1320	I	4.1, 6.1.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
Dinitrophenolates *alkali metals, dry or wetted with less than 15 percent water, by mass*	1.3C	UN0077	II	1.3C, 6.1.		None	62	None	Forbidden	Forbidden	10	5E
Dinitrophenolates, wetted *with not less than 15 percent water, by mass*	4.1	UN1321	I	4.1, 6.1.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Dinitropropylene glycol	Forbidden											
	Dinitroresorcinol, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0078	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	2,4-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden											
	4,6-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden											
	Dinitroresorcinol, wetted *with not less than 15 percent water, by mass*	4.1	UN1322	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
	3,5-Dinitrosalicylic acid (lead salt) (dry)	Forbidden											
	Dinitrosobenzene	1.3C	UN0406	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Dinitrosobenzylamidine and salts of (dry)	Forbidden											
	2,2-Dinitrostilbene	Forbidden											
	Dinitrotoluenes, *liquid*	6.1	UN2038	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Dinitrotoluenes, solid	6.1	UN3454	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Dinitrotoluenes, molten	6.1	UN1600	II	6.1	T7, TP3	None	202	243	Forbidden	Forbidden	C	
	1,9-Dinitroxy pentamethylene-2,4, 6,8-tetramine (dry)	Forbidden											
	Dioxane	3	UN1165	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Dioxolane	3	UN1166	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Dipentene	3	UN2052	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diphenylamine chloroarsine	6.1	UN1698	I	6.1	T6, TP33	None	201	None	Forbidden	Forbidden	D	40
	Diphenylchloroarsine, liquid	6.1	UN1699	I	6.1	A8, B14, B32, N33, N34, T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	D	40
	Diphenyl-chloroarsine, solid	6.1	UN3450	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40
	Diphenyldichlorosilane	8	UN1769	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Diphenylmethyl bromide	8	UN1770	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40
	Dipicryl sulfide, *dry or wetted with less than 10 percent water, by mass*	1.1D	UN0401	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Dipicryl sulfide, wetted *with not less than 10 percent water, by mass*	4.1	UN2852	I	4.1	162, A2, N41, N84	None	211	None	Forbidden	0.5 kg	D	28
	Dipicrylamine, *see* Hexanitrodiphenylamine												
	Dipropionyl peroxide, with more than 28 percent in solution	Forbidden											
	Di-n-propyl ether	3	UN2384	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Dipropyl ketone	3	UN2710	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Dipropylamine	3	UN2383	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
G	Disinfectant, liquid, corrosive, n.o.s.	8	UN1903	I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	
G	Disinfectants, liquid, corrosive n.o.s.	8	UN1903	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
G	Disinfectants, liquid, toxic, n.o.s.	6.1	UN3142	I	6.1	A4, T14, TP2, TP27	None	201	243	1 L	30 L	A	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Disinfectants, solid, toxic, n.o.s.	6.1	UN1601	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Disodium trioxosilicate	8	UN3253	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
G	Dispersant gases, n.o.s. *see* Refrigerant gases, n.o.s.												
	Divinyl ether, stabilized	3	UN1167	I	3	A7, T11, TP2	None	201	243	1 L	30 L	E	40
	Dodecyltrichlorosilane	8	UN1771	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Dry ice, *see* Carbon dioxide, solid												
G	Dyes, liquid, corrosive, n.o.s. or Dye intermediates, liquid, corrosive, n.o.s.	8	UN2801	I	8	11, A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A	
				II	8	11, B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	A	

	.....	.....		III	8	11, IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	.....
G	Dyes, liquid, toxic, n.o.s. *or* Dye intermediates, liquid, toxic, n.o.s.	6.1	UN1602	I	6.1		None	201	243	1 L	30 L	A	.....
	.....	.....		II	6.1	IB2	153	202	243	5 L	60 L	A	.....
	.....	.....		III	6.1	IB3	153	203	241	60 L	220 L	A	.....
G	Dyes, solid, corrosive, n.o.s. *or* Dye intermediates, solid, corrosive, n.o.s.	8	UN3147	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	A	.....
	.....	.....		II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	.....	.....		III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
G	Dyes, solid, toxic, n.o.s. *or* Dye intermediates, solid, toxic, n.o.s.	6.1	UN3143	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	.....
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Dynamite, see Explosive, blasting, type A	.....			.....		.....	.....	.....	.....	.....		.....
	Electrolyte (acid or alkali) for batteries, see Battery fluid, acid *or* Battery fluid, alkali	.....			.....		.....	.....	.....	.....	.....		.....
	Elevated temperature liquid, flammable, n.o.s., *with flash point above 37.8 C, at or above its flash point.*	3	UN3256	III	3	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	.....
	Elevated temperature liquid, n.o.s., *at or above 100 C and below its flash point (including molten metals, molten salts, etc.).*	9	UN3257	III	9	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	85
	Elevated temperature solid, n.o.s., *at or above 240 C, see § 173.247(h)(4)*	9	UN3258	III	9		247(h)(4).	None	247	Forbidden	Forbidden	A	85
	Engines, internal combustion, *flammable gas powered*	9	UN3166	.....	9	135	220	220	220	Forbidden	No limit	A	.....
	Engines, internal combustion, *flammable liquid powered*	9	UN3166	.....	9	135	220	220	220	No limit	No limit	A	.....
G	Environmentally hazardous substances, liquid, n.o.s.	9	UN3082	III	9	8, 146, IB3, T4, TP1, TP29	155	203	241	No limit	No limit	A	.....
G	Environmentally hazardous substances, solid, n.o.s.	9	UN3077	III	9	8, 146, B54, IB8, IP3, N20, T1, TP33	155	213	240	No limit	No limit	A	.....
	Epibromohydrin	6.1	UN2558	I	6.1, 3	T14, TP2, TP13	None	201	243	Forbidden	Forbidden	D	40
+	Epichlorohydrin	6.1	UN2023	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	40
	1,2-Epoxy-3-ethoxypropane	3	UN2752	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Esters, n.o.s.	3	UN3272	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
	Etching acid, liquid, n.o.s., see Hydrofluoric acid, solution *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Ethane	2.1	UN1035	.....	2.1		306	304	302	Forbidden	150 kg	E	40
D	Ethane-Propane mixture, refrigerated liquid	2.1	NA1961	.....	2.1	T75, TP5	None	316	314, 315.	Forbidden	Forbidden	D	40
	Ethane, refrigerated liquid	2.1	UN1961	.....	2.1	T75, TP5	None	None	315	Forbidden	Forbidden	D	40
	Ethanol amine dinitrate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Ethanol *or* Ethyl alcohol *or* Ethanol solutions *or* Ethyl alcohol solutions	3	UN1170	II	3	24, IB2, T4, TP1	150	202	242	5 L	60 L	A	.....
	.....	.....		III	3	24, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Ethanolamine *or* Ethanolamine solutions	8	UN2491	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Ether, see Diethyl ether	.....			.....		.....	.....	.....	.....	.....		.....
	Ethers, n.o.s.	3	UN3271	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
	Ethyl acetate	3	UN1173	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl acrylate, stabilized	3	UN1917	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	40
	Ethyl alcohol, *see* Ethanol	.....			.....		.....	.....	.....	.....	.....		.....
	Ethyl aldehyde, see Acetaldehyde	.....			.....		.....	.....	.....	.....	.....		.....
	Ethyl amyl ketone	3	UN2271	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	N-Ethylbenzyltoluidines, solid	6.1	UN3460	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	N-Ethyl-N-benzylaniline	6.1	UN2274	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Ethyl borate	3	UN1176	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl bromide	6.1	UN1891	II	6.1	IB2, IP8, T7, TP2, TP13	153	202	243	5 L	60 L	B	40, 85
	Ethyl bromoacetate	6.1	UN1603	II	6.1, 3	IB2, T7, TP2	None	202	243	Forbidden	Forbidden	D	40
	Ethyl butyl ether	3	UN1179	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl butyrate	3	UN1180	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Ethyl chloride	2.1	UN1037	.....	2.1	B77, T50	None	322	314, 315.	Forbidden	150 kg	B	40
	Ethyl chloroacetate	6.1	UN1181	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ethyl chloroformate	6.1	UN1182	I	6.1, 3, 8.	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
	Ethyl 2-chloropropionate	3	UN2935	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
+	Ethyl chlorothioformate	8	UN2826	II	8, 6.1, 3.	2, B9, B14, B32, B74, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	40
	Ethyl crotonate	3	UN1862	II	3	IB2, T4, TP2	150	202	242	5 L	60 L	B	
	Ethyl ether, *see* Diethyl ether												
	Ethyl fluoride *or* Refrigerant gas R161	2.1	UN2453		2.1		306	304	314, 315.	Forbidden	150 kg	E	40
	Ethyl formate	3	UN1190	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Ethyl hydroperoxide	Forbidden											
	Ethyl isobutyrate	3	UN2385	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
+	Ethyl isocyanate	3	UN2481	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Ethyl lactate	3	UN1192	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethyl mercaptan	3	UN2363	I	3	A6, T11, TP2, TP13	None	201	243	Forbidden	30 L	E	95, 102
	Ethyl methacrylate, stabilized	3	UN2277	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl methyl ether	2.1	UN1039		2.1		None	201	314, 315.	Forbidden	150 kg	B	40
	Ethyl methyl ketone *or* Methyl ethyl ketone	3	UN1193	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl nitrite solutions	3	UN1194	I	3, 6.1		None	201	None	Forbidden	Forbidden	E	40, 105
	Ethyl orthoformate	3	UN2524	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethyl oxalate	6.1	UN2525	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Ethyl perchlorate	Forbidden											
D	Ethyl phosphonothioic dichloride, anhydrous	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
D	Ethyl phosphonous dichloride, anhydrous *pyrophoric liquid*	6.1	NA2845	I	6.1, 4.2.	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	18
D	Ethyl phosphorodichloridate	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethyl propionate	3	UN1195	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl propyl ether	3	UN2615	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Ethyl silicate, see Tetraethyl silicate												
	Ethylacetylene, stabilized	2.1	UN2452		2.1		None	304	314, 315.	Forbidden	150 kg	B	40
	Ethylamine	2.1	UN1036		2.1	B77, T50	None	321	314, 315.	Forbidden	150 kg	D	40
	Ethylamine, aqueous solution *with not less than 50 percent but not more than 70 percent ethylamine.*	3	UN2270	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	N-Ethylaniline	6.1	UN2272	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	2-Ethylaniline	6.1	UN2273	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	Ethylbenzene	3	UN1175	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	N-Ethylbenzyltoluidines liquid	6.1	UN2753	III	6.1	IB3, T7, TP1	153	203	241	60 L	220 L	A	
	2-Ethylbutanol	3	UN2275	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	2-Ethylbutyl acetate	3	UN1177	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	2-Ethylbutyraldehyde	3	UN1178	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyldichloroarsine	6.1	UN1892	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethyldichlorosilane	4.3	UN1183	I	4.3, 8, 3.	A2, A3, A7, N34, T10, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100

Ethylene, acetylene and propylene in mixture, refrigerated liquid *with at least 71.5 percent ethylene with not more than 22.5 percent acetylene and not more than 6 percent propylene.*	2.1	UN3138	.....	2.1	T75, TP5	None	304	314, 315.	Forbidden	Forbidden	D	40, 57
Ethylene chlorohydrin	6.1	UN1135	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Ethylene	2.1	UN1962	.....	2.1		306	304	302	Forbidden	150 kg	E	40
Ethylene diamine diperchlorate	Forbidden			.....		.....	.....	.....	.....	.....		.....
Ethylene dibromide	6.1	UN1605	I	6.1	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures.	.....			.....		.....	.....	.....	.....	.....		.....
Ethylene dichloride	3	UN1184	II	3, 6.1	IB2, N36, T7, TP1	150	202	243	1 L	60 L	B	40
Ethylene glycol diethyl ether	3	UN1153	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	A	.....
.....	.....		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Ethylene glycol dinitrate	Forbidden			.....		.....	.....	.....	.....	.....		.....
Ethylene glycol monoethyl ether	3	UN1171	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Ethylene glycol monoethyl ether acetate	3	UN1172	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Ethylene glycol monomethyl ether	3	UN1188	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Ethylene glycol monomethyl ether acetate	3	UN1189	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Ethylene oxide and carbon dioxide mixture *with more than 87 percent ethylene oxide*	2.3	UN3300	.....	2.3, 2.1.	4	None	304	314, 315.	Forbidden	Forbidden	D	40
Ethylene oxide and carbon dioxide mixtures *with more than 9 percent but not more than 87 percent ethylene oxide.*	2.1	UN1041	.....	2.1	T50	306	304	314, 315.	Forbidden	25 kg	B	40
Ethylene oxide and carbon dioxide mixtures *with not more than 9 percent ethylene oxide*	2.2	UN1952	.....	2.2		306	304	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and chlorotetrafluoroethane mixture *with not more than 8.8 percent ethylene oxide.*	2.2	UN3297	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and dichlorodifluoromethane mixture, *with not more than 12.5 percent ethylene oxide.*	2.2	UN3070	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and pentafluoroethane mixture *with not more than 7.9 percent ethylene oxide*	2.2	UN3298	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and propylene oxide mixtures*, with not more than 30 percent ethylene oxide*	3	UN2983	I	3, 6.1	5, A11, N4, N34, T14, TP2, TP7, TP13	None	201	243	Forbidden	30 L	E	40
Ethylene oxide and tetrafluoroethane mixture *with not more than 5.6 percent ethylene oxide*	2.2	UN3299	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide *or* Ethylene oxide with nitrogen *up to a total pressure of 1MPa (10 bar) at 50 degrees C.*	2.3	UN1040	.....	2.3, 2.1.	4, T50, TP20	None	323	323	Forbidden	Forbidden	D	40
Ethylene, refrigerated liquid *(cryogenic liquid)*	2.1	UN1038	.....	2.1	T75, TP5	None	316	318, 319.	Forbidden	Forbidden	D	40
Ethylenediamine	8	UN1604	II	8, 3	IB2, T7, TP2	154	202	243	1 L	30 L	A	40
Ethyleneimine, stabilized	6.1	UN1185	I	6.1, 3	1, B9, B14, B30, B72, B77, N25, N32, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
Ethylhexaldehyde, see Octyl aldehydes *etc*	.....			.....		.....	.....	.....	.....	.....		.....
2-Ethylhexyl chloroformate	6.1	UN2748	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
2-Ethylhexylamine	3	UN2276	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
Ethylphenyldichlorosilane	8	UN2435	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	.....
1-Ethylpiperidine	3	UN2386	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	.....
N-Ethyltoluidines	6.1	UN2754	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
Ethyltrichlorosilane	3	UN1196	II	3, 8	A7, IB1, N34, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
Etiologic agent, see Infectious substances, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
Explosive articles, see Articles, explosive , n.o.s. *etc*	.....			.....		.....	.....	.....	.....	.....		.....
Explosive, blasting, type A	1.1D	UN0081	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	21E, 29E
Explosive, blasting, type B	1.1D	UN0082	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	29E
Explosive, blasting, type B *or* Agent blasting, Type B	1.5D	UN0331	II	1.5D ..	105, 106	None	62	None	Forbidden	Forbidden	10	29E
Explosive, blasting, type C	1.1D	UN0083	II	1.1D ..	123	None	62	None	Forbidden	Forbidden	10	22E
Explosive, blasting, type D	1.1D	UN0084	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	.....
Explosive, blasting, type E	1.1D	UN0241	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	19E, 29E
Explosive, blasting, type E *or* Agent blasting, Type E	1.5D	UN0332	II	1.5D ..	105, 106	None	62	None	Forbidden	Forbidden	10	29E
Explosive, forbidden. See § 173.54	Forbidden			.....		.....	.....	.....	.....	.....		.....
Explosive substances, see Substances, explosive, n.o.s. *etc*	.....			.....		.....	.....	.....	.....	.....		.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Explosives, slurry, see Explosive, blasting, type E												
	Explosives, water gels, see Explosive, blasting, type E												
	Extracts, aromatic, liquid	3	UN1169	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Extracts, flavoring, liquid	3	UN1197	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Fabric with animal or vegetable oil, see Fibers *or* fabrics, *etc*												
	Ferric arsenate	6.1	UN1606	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Ferric arsenite	6.1	UN1607	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Ferric chloride, anhydrous	8	UN1773	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Ferric chloride, solution	8	UN2582	III	8	B15, IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Ferric nitrate	5.1	UN1466	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Ferrocerium	4.1	UN1323	II	4.1	59, A19, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	
	Ferrosilicon *with 30 percent or more but less than 90 percent silicon*	4.3	UN1408	III	4.3, 6.1.	A1, A19, B6, IB8, IP4, IP7, T1, TP33	151	213	240	25 kg	100 kg	A	13, 40, 52, 53, 85, 103
	Ferrous arsenate	6.1	UN1608	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
D	Ferrous chloride, solid	8	NA1759	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
D	Ferrous chloride, solution	8	NA1760	II	8	B3, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
	Ferrous metal borings *or* Ferrous metal shavings *or* Ferrous metal turnings *or* Ferrous metal cuttings *in a form liable to self-heating.*	4.2	UN2793	III	4.2	A1, A19, IB8, IP3, IP7	None	213	241	25 kg	100 kg	A	
	Fertilizer ammoniating solution *with free ammonia*	2.2	UN1043		2.2		306	304	314, 315.	Forbidden	150 kg	E	40
A I W	Fibers, animal *or* Fibers, vegetable *burnt, wet or damp.*	4.2	UN1372	III			151	213	240	Forbidden	Forbidden	A	
I W	Fibers, vegetable, dry	4.1	UN3360		4.1	137	151	213	240	No Limit	No Limit	A	
A W	Fibers *or* Fabrics, animal *or* vegetable *or* Synthetic, n.o.s. *with animal or vegetable oil*	4.2	UN1373	III	4.2	137, IB8, IP3, T1, TP33	None	213	241	Forbidden	Forbidden	A	
	Fibers *or* Fabrics impregnated with weakly nitrated nitrocellulose, n.o.s.	4.1	UN1353	III	4.1	A1, IB8, IP3	None	213	240	25 kg	100 kg	D	
	Films, nitrocellulose base, from which gelatine has been removed; film scrap, see Celluloid scrap.												
	Films, nitrocellulose base, *gelatine coated (except scrap)*	4.1	UN1324	III	4.1		None	183	None	25 kg	100 kg	D	28
	Fire extinguisher charges, *corrosive liquid*	8	UN1774	II	8	N41	154	202	None	1 L	30 L	A	
	Fire extinguisher charges, expelling, explosive, see Cartridges, power device												
	Fire extinguishers *containing compressed or liquefied gas*	2.2	UN1044		2.2	18, 110	309	309	None	75 kg	150 kg	A	
	Firelighters, solid *with flammable liquid*	4.1	UN2623	III	4.1	A1, A19	None	213	None	25 kg	100 kg	A	52
	Fireworks	1.1G	UN0333	II	1.1G	108	None	62	None	Forbidden	Forbidden	07	
	Fireworks	1.2G	UN0334	II	1.2G	108	None	62	None	Forbidden	Forbidden	07	
	Fireworks	1.3G	UN0335	II	1.3G	108	None	62	None	Forbidden	Forbidden	07	
	Fireworks	1.4G	UN0336	II	1.4G	108	None	62	None	Forbidden	75 kg	06	
	Fireworks	1.4S	UN0337	II	1.4S	108	None	62	None	25 kg	100 kg	05	
	First aid kits	9	UN3316		9	15	161	161	None	10 kg	10 kg	A	
W	Fish meal, stabilized *or* Fish scrap, stabilized	9	UN2216	III	None	155, IB8, IP3, T1, TP33	155	218	218	No limit	No limit	B	88, 122, 128
	Fish meal, unstablized *or* Fish scrap, unstabilized	4.2	UN1374	II	4.2	155, A1, A19, IB8, IP2, IP4, T3, TP33	None	212	241	15 kg	50 kg	B	18, 128
	Fissile radioactive materials, see Radioactive material, fissile, n.o.s.												
	Flammable compressed gas, see Compressed *or* Liquefied gas, flammable, *etc*												
	Flammable compressed gas (small receptacles not fitted with a dispersion device, not refillable), see Receptacles, *etc.*												
	Flammable gas in lighters, see Lighters *or* lighter refills, *cigarettes, containing flammable gas*												

G	Flammable liquid, toxic, corrosive, n.o.s.	3	UN3286	I	3, 6.1, 8.	T14, TP2, TP13, TP27	None	201	243	Forbidden	2.5 L	E	21, 40, 100
				II	3, 6.1, 8.	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	5 L	B	21, 40, 100
G	Flammable liquids, corrosive, n.o.s.	3	UN2924	I	3, 8	T14, TP2	None	201	243	0.5 L	2.5 L	E	40
				II	3, 8	IB2, T11, TP2, TP27	150	202	243	1 L	5 L	B	40
				III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	A	40
G	Flammable liquids, n.o.s.	3	UN1993	I	3	T11, TP1, TP27	150	201	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
G	Flammable liquids, toxic, n.o.s.	3	UN1992	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	
G	Flammable solid, corrosive, inorganic, n.o.s.	4.1	UN3180	II	4.1, 8	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solid, inorganic, n.o.s.	4.1	UN3178	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solid, organic, molten, n.o.s.	4.1	UN3176	II	4.1	IB1, T3, TP3, TP26	151	212	240	Forbidden	Forbidden	C	
				III	4.1	IB1, T1, TP3, TP26	151	213	240	Forbidden	Forbidden	C	
G	Flammable solid, oxidizing, n.o.s.	4.1	UN3097	II	4.1, 5.1.	131	None	214	214	Forbidden	Forbidden	E	40
				III	4.1, 5.1.	131, T1, TP33	None	214	214	Forbidden	Forbidden	D	40
G	Flammable solid, toxic, inorganic, n.o.s.	4.1	UN3179	II	4.1, 6.1.	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
				III	4.1, 6.1.	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
G	Flammable solids, corrosive, organic, n.o.s.	4.1	UN2925	II	4.1, 8	A1, IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solids, organic, n.o.s.	4.1	UN1325	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solids, toxic, organic, n.o.s.	4.1	UN2926	II	4.1, 6.1.	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
				III	4.1, 6.1.	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
	Flares, aerial	1.3G	UN0093	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, aerial	1.4G	UN0403	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Flares, aerial	1.4S	UN0404	II	1.4S		None	62	None	25 kg	100 kg	05	
	Flares, aerial	1.1G	UN0420	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Flares, aerial	1.2G	UN0421	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Flares, airplane, see Flares, aerial												
	Flares, signal, see Cartridges, signal												
	Flares, surface	1.3G	UN0092	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, surface	1.1G	UN0418	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Flares, surface	1.2G	UN0419	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Flares, water-activated, see Contrivances, water-activated, *etc*												
	Flash powder	1.1G	UN0094	II	1.1G		None	62	None	Forbidden	Forbidden	15	
	Flash powder	1.3G	UN0305	II	1.3G		None	62	None	Forbidden	Forbidden	15	
	Flue dusts, poisonous, see Arsenical dust												
	Fluoric acid, see Hydrofluoric acid, *etc*												
	Fluorine, compressed	2.3	UN1045		2.3, 5.1, 8.	1	None	302	None	Forbidden	Forbidden	D	40, 89, 90
	Fluoroacetic acid	6.1	UN2642	I	6.1	IB7, IP1, T6, TP33	None	211	242	1 kg	15 kg	E	
	Fluoroanilines	6.1	UN2941	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Fluorobenzene	3	UN2387	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Fluoroboric acid	8	UN1775	II	8	A6, A7, B2, B15, IB2, N3, N34, T7, TP2	154	202	242	1 L	30 L	A	
	Fluorophosphoric acid anhydrous	8	UN1776	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	
	Fluorosilicates, n.o.s.	6.1	UN2856	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Fluorosilicic acid	8	UN1778	II	8	A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	
	Fluorosulfonic acid	8	UN1777	I	8	A3, A6, A7, A10, B6, B10, N3, N36, T10, TP2, TP12	None	201	243	0.5 L	2.5 L	D	40
	Fluorotoluenes	3	UN2388	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Forbidden materials. See § 173.21	Forbidden											
	Formaldehyde, solutions, flammable	3	UN1198	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
	Formaldehyde, solutions, *with not less than 25 percent formaldehyde*	8	UN2209	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Formalin, see Formaldehyde, solutions												
	Formic acid	8	UN1779	II	8	B2, B28, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
	Fracturing devices, explosive, *without detonators for oil wells*	1.1D	UN0099	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Fuel, aviation, turbine engine	3	UN1863	I	3	144, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
				II	3	144, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
D	Fuel oil *(No. 1, 2, 4, 5, or 6)*	3	NA1993	III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Fuel system components (including fuel control units (FCU), carburetors, fuel lines, fuel pumps) see Dangerous Goods in Apparatus *or* Dangerous Goods in Machinery.												
	Fulminate of mercury (dry)	Forbidden											
	Fulminate of mercury, wet, see Mercury fulminate, *etc*												
	Fulminating gold	Forbidden											
	Fulminating mercury	Forbidden											
	Fulminating platinum	Forbidden											
	Fulminating silver	Forbidden											
	Fulminic acid	Forbidden											
	Fumaryl chloride	8	UN1780	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	8, 40
	Fumigated lading, see §§ 172.302(g), 173.9 and 176.76(h)												
	Fumigated transport vehicle or freight container see 173.9												
	Furaldehydes	6.1	UN1199	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Furan	3	UN2389	I	3	T12, TP2, TP13	None	201	243	1 L	30 L	E	40
	Furfuryl alcohol	6.1	UN2874	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	Furfurylamine	3	UN2526	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
	Fuse, detonating, *metal clad, see* Cord, detonating, *metal clad*												
	Fuse, detonating, mild effect, *metal clad, see* Cord, detonating, mild effect, *metal clad*												
	Fuse, igniter *tubular metal clad*	1.4G	UN0103	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Fuse, non-detonating *instantaneous or quickmatch*	1.3G	UN0101	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Fuse, safety	1.4S	UN0105	II	1.4S		None	62	None	25 kg	100 kg	05	
D	Fusee (*railway or highway*)	4.1	NA1325	II	4.1		None	184	None	15 kg	50 kg	B	
	Fusel oil	3	UN1201	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Fuses, tracer, see Tracers for ammunition												
	Fuzes, combination, percussion and time, see Fuzes, detonating *(UN0257, UN0367);* Fuzes, igniting *(UN0317, UN0368).*												
	Fuzes, detonating	1.1B	UN0106	II	1.1B		None	62	None	Forbidden	Forbidden	11	
	Fuzes, detonating	1.2B	UN0107	II	1.2B		None	62	None	Forbidden	Forbidden	11	
	Fuzes, detonating	1.4B	UN0257	II	1.4B	116	None	62	None	Forbidden	75 kg	06	
	Fuzes, detonating	1.4S	UN0367	II	1.4S	116	None	62	None	25 kg	100 kg	05	
	Fuzes, detonating, *with protective features*	1.1D	UN0408	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Fuzes, detonating, *with protective features*	1.2D	UN0409	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Fuzes, detonating, *with protective features*	1.4D	UN0410	II	1.4D	116	None	62	None	Forbidden	75 kg	06	

	Fuzes, igniting	1.3G	UN0316	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Fuzes, igniting	1.4G	UN0317	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Fuzes, igniting	1.4S	UN0368	II	1.4S		None	62	None	25 kg	100 kg	05	
	Galactsan trinitrate	Forbidden											
	Gallium	8	UN2803	III	8	T1, TP33	None	162	240	20 kg	20 kg	B	48
	Gas cartridges, *(flammable) without a release device, non-refillable*	2.1	UN2037		2.1		306	304	None	1 kg	15 kg	B	40
	Gas generator assemblies (aircraft), *containing a non-flammable non-toxic gas and a propellant cartridge.*	2.2			2.2		None	335	None	75 kg	150 kg	A	
D	Gas identification set	2.3	NA9035		2.3	6	None	194	None	Forbidden	Forbidden	D	
	Gas oil	3	UN1202	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
G	Gas, refrigerated liquid, flammable, n.o.s. *(cryogenic liquid)*	2.1	UN3312		2.1	T75, TP5	None	316	318	Forbidden	Forbidden	D	40
G	Gas, refrigerated liquid, n.o.s. *(cryogenic liquid)*	2.2	UN3158		2.2	T75, TP5	320	316	318	50 kg	500 kg	D	
G	Gas, refrigerated liquid, oxidizing, n.o.s. *(cryogenic liquid)*	2.2	UN3311		2.2, 5.1.	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	
	Gas sample, non-pressurized, flammable, n.o.s., *not refrigerated liquid*	2.1	UN3167		2.1		306	302, 304.	None	1 L	5 L	D	
	Gas sample, non-pressurized, toxic, flammable, n.o.s., *not refrigerated liquid*	2.3	UN3168		2.3, 2.1.	6	306	302	None	Forbidden	1 L	D	
	Gas sample, non-pressurized, toxic, n.o.s., *not refrigerated liquid*	2.3	UN3169		2.3	6	306	302, 304.	None	Forbidden	1 L	D	
D	Gasohol *gasoline mixed with ethyl alcohol, with not more than 20 percent alcohol*	3	NA1203	II	3	144	150	202	242	5 L	60 L	E	
	Gasoline	3	UN1203	II	3	139, B33, B101, T8	150	202	242	5 L	60 L	E	
	Gasoline, casinghead, see Gasoline												
	Gelatine, blasting, see Explosive, blasting, type A												
	Gelatine dynamites, see Explosive, blasting, type A												
	Germane	2.3	UN2192		2.3, 2.1.	2	None	302	245	Forbidden	Forbidden	D	40
	Glycerol-1,3-dinitrate	Forbidden											
	Glycerol gluconate trinitrate	Forbidden											
	Glycerol lactate trinitrate	Forbidden											
	Glycerol alpha-monochlorohydrin	6.1	UN2689	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Glyceryl trinitrate, see Nitroglycerin, *etc*												
	Glycidaldehyde	3	UN2622	II	3, 6.1	IB2, IP8, T7, TP1	150	202	243	1 L	60 L	A	40
	Grenades, *hand or rifle, with bursting charge*	1.1D	UN0284	II	1.1D			62	None	Forbidden	Forbidden	07	
	Grenades, *hand or rifle, with bursting charge*	1.2D	UN0285	II	1.2D			62	None	Forbidden	Forbidden	07	
	Grenades, *hand or rifle, with bursting charge*	1.1F	UN0292	II	1.1F			62	None	Forbidden	Forbidden	08	
	Grenades, *hand or rifle, with bursting charge*	1.2F	UN0293	II	1.2F			62	None	Forbidden	Forbidden	08	
	Grenades, illuminating, see Ammunition, illuminating, *etc*												
	Grenades, practice, *hand or rifle*	1.4S	UN0110	II	1.4S			62	None	25 kg	100 kg	05	
	Grenades, practice, *hand or rifle*	1.3G	UN0318	II	1.3G			62	None	Forbidden	Forbidden	07	
	Grenades, practice, *hand or rifle*	1.2G	UN0372	II	1.2G			62	None	Forbidden	Forbidden	07	
	Grenades practice *Hand or rifle*	1.4G	UN0452	II	1.4G			62	None	Forbidden	75 kg	06	
	Grenades, smoke, see Ammunition, smoke, *etc*												
	Guanidine nitrate	5.1	UN1467	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	73
	Guanyl nitrosaminoguanylidene hydrazine (dry)	Forbidden											
	Guanyl nitrosaminoguanylidene hydrazine, wetted *with not less than 30 percent water, by mass*	1.1A	UN0113	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Guanyl nitrosaminoguanyltetrazene (dry)	Forbidden											
	Guanyl nitrosaminoguanyltetrazene, wetted *or* Tetrazene, wetted *with not less than 30 percent water or mixture of alcohol and water, by mass.*	1.1A	UN0114	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Gunpowder, compressed *or* Gunpowder in pellets, *see* Black powder *(UN 0028)*												
	Gunpowder, *granular or as a meal, see* Black powder *(UN 0027)*												
	Hafnium powder, dry	4.2	UN2545	I	4.2		None	211	242	Forbidden	Forbidden	D	
				II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	D	
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	
	Hafnium powder, wetted *with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.*	4.1	UN1326	II	4.1	A6, A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	E	74
	Hand signal device, see Signal devices, hand												
	Hazardous substances, liquid or solid, n.o.s., see Environmentally hazardous substances, *etc*												
D G	Hazardous waste, liquid, n.o.s.	9	NA3082	III	9	IB3, T2, TP1	155	203	241	No limit	No limit	A	
D G	Hazardous waste, solid, n.o.s.	9	NA3077	III	9	B54, IB8, IP2, T1, TP33	155	213	240	No limit	No limit	A	
	Heating oil, light	3	UN1202	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Helium, compressed	2.2	UN1046		2.2		306	302	302, 314.	75 kg	150 kg	A	85
	Helium-oxygen mixture, see Rare gases and oxygen mixtures												
	Helium, refrigerated liquid *(cryogenic liquid)*	2.2	UN1963		2.2	T75, TP5	320	316	318	50 kg	500 kg	B	
	Heptafluoropropane *or* Refrigerant gas R 227	2.2	UN3296		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	n-Heptaldehyde	3	UN3056	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Heptanes	3	UN1206	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	n-Heptene	3	UN2278	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Hexachloroacetone	6.1	UN2661	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	B	12, 40
	Hexachlorobenzene	6.1	UN2729	III	6.1	B3, IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A	
	Hexachlorobutadiene	6.1	UN2279	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Hexachlorocyclopentadiene	6.1	UN2646	I	6.1	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Hexachlorophene	6.1	UN2875	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Hexadecyltrichlorosilane	8	UN1781	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
	Hexadienes	3	UN2458	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	
	Hexaethyl tetraphosphate and compressed gas mixtures	2.3	UN1612		2.3	3	None	334	None	Forbidden	Forbidden	D	40
	Hexaethyl tetraphosphate, *liquid*	6.1	UN1611	II	6.1	IB2, N76, T7, TP2	153	202	243	5 L	60 L	E	40
	Hexaethyl tetraphosphate, *solid*	6.1	UN1611	II	6.1	IB8, IP2, IP4, N76	153	212	242	25 kg	100 kg	E	40
	Hexafluoroacetone	2.3	UN2420		2.3, 8	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Hexafluoroacetone hydrate, liquid	6.1	UN2552	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
	Hexafluoroacetone hydrate, solid	6.1	UN3436	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	Hexafluoroethane, *or* Refrigerant gas R 116	2.2	UN2193		2.2		306	304	314, 315.	75 kg	150 kg	A	
	Hexafluorophosphoric acid	8	UN1782	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	
	Hexafluoropropylene compressed *or* Refrigerant gas R 1216	2.2	UN1858		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Hexaldehyde	3	UN1207	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Hexamethylene diisocyanate	6.1	UN2281	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	C	13, 40
	Hexamethylene triperoxide diamine (dry)	Forbidden											
	Hexamethylenediamine, solid	8	UN2280	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
	Hexamethylenediamine solution	8	UN1783	II	8	IB2, T7, TP2	None	202	242	1 L	30 L	A	
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Hexamethyleneimine	3	UN2493	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Hexamethylenetetramine	4.1	UN1328	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Hexamethylol benzene hexanitrate	Forbidden											
	Hexanes	3	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	2,2',4,4',6,6'- Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden											
	Hexanitroazoxy benzene	Forbidden											
	N,N'-(hexanitrodiphenyl) ethylene dinitramine (dry)	Forbidden											
	Hexanitrodiphenyl urea	Forbidden											
	2,2',3',4,4',6-Hexanitrodiphenylamine	Forbidden											
	Hexanitrodiphenylamine *or* Dipicrylamine *or* Hexyl	1.1D	UN0079	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	2,3',4,4',6,6'-Hexanitrodiphenylether	Forbidden											
	Hexanitroethane	Forbidden											
	Hexanitrooxanilide	Forbidden											
	Hexanitrostilbene	1.1D	UN0392	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Hexanoic acid, see Corrosive liquids, n.o.s.												
	Hexanols	3	UN2282	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	74
	1-Hexene	3	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Hexogen and cyclotetramethylenetetranitramine mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
	Hexogen and HMX mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												
	Hexogen and octogen mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*												

Hexogen, *see* Cyclotrimethylenetrinitramine, *etc*													
Hexolite, *or* Hexotol *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0118	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Hexotonal	1.1D	UN0393	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Hexyl, *see* Hexanitrodiphenylamine												
Hexyltrichlorosilane	8	UN1784	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
High explosives, see individual explosives' entries												
HMX, *see* Cyclotetramethylenete tranitramine, *etc*												
Hydrazine, anhydrous	8	UN2029	I	8, 3, 6.1.	A3, A6, A7, A10, B7, B16, B53	None	201	243	Forbidden	2.5 L	D	40, 125
Hydrazine, aqueous solution *with not more than 37 percent hydrazine, by mass*	6.1	UN3293	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
Hydrazine azide	Forbidden											
Hydrazine chlorate	Forbidden											
Hydrazine dicarbonic acid diazide	Forbidden											
Hydrazine aqueous solution, *with more than 37% hydrazine, by mass*	8	UN2030	I	8, 6.1	151, B16, B53, T10, TP2, TP13	None	201	243	Forbidden	2.5 L	D	40
			II	8, 6.1	B16, B53, IB2, T7, TP2, TP13	None	202	243	Forbidden	30 L	D	40
			III	8, 6.1	B16, B53, IB3, T4, TP1	154	203	241	5 L	60 L	D	40
Hydrazine perchlorate	Forbidden											
Hydrazine selenate	Forbidden											
Hydriodic acid, anhydrous, see Hydrogen iodide, anhydrous												
Hydriodic acid	8	UN1787	II	8	A3, A6, B2, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	8
Hydrobromic acid, anhydrous, see Hydrogen bromide, anhydrous												
Hydrobromic acid, *with more than 49 percent hydrobromic acid*	8	UN1788	II	8	B2, B15, IB2, N41, T7, TP2	154	202	242	Forbidden	Forbidden	C	
			III	8	IB3, T4, TP1	154	203	241	Forbidden	Forbidden	C	8
Hydrobromic acid, *with not more than 49 percent hydrobromic acid*	8	UN1788	II	8	A3, A6, B2, B15, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	
			III	8	A3, IB3, T4, TP1	154	203	241	5 L	60 L	C	8
Hydrocarbon gas mixture, compressed, n.o.s.	2.1	UN1964		2.1		306	302	314, 315.	Forbidden	150 kg	E	40
Hydrocarbon gas mixture, liquefied, n.o.s.	2.1	UN1965		2.1	T50	306	304	314, 315.	Forbidden	150 kg	E	40
Hydrocarbons, liquid, n.o.s.	3	UN3295	I	3	144, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
			II	3	144, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
			III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
Hydrochloric acid, anhydrous, see Hydrogen chloride, anhydrous												
Hydrochloric acid	8	UN1789	II	8	A3, A6, B3, B15, IB2, N41, T8, TP2, TP12	154	202	242	1 L	30 L	C	
			III	8	A3, IB3, T4, TP1, TP12	154	203	241	5 L	60 L	C	8
Hydrocyanic acid, anhydrous, see Hydrogen cyanide *etc*												
Hydrocyanic acid, aqueous solutions *or* Hydrogen cyanide, aqueous solutions *with not more than 20 percent hydrogen cyanide.*	6.1	UN1613	I	6.1	2, B61, B65, B77, B82, T20, TP2, TP13	None	195	244	Forbidden	Forbidden	D	40
D Hydrocyanic acid, aqueous solutions *with less than 5 percent hydrogen cyanide*	6.1	NA1613	II	6.1	IB1, T14, TP2, TP13, TP27	None	195	243	Forbidden	5 L	D	40
Hydrocyanic acid, liquefied, see Hydrogen cyanide, *etc*												
Hydrocyanic acid (prussic), unstabilized	Forbidden											
Hydrofluoric acid and Sulfuric acid mixtures	8	UN1786	I	8, 6.1	A6, A7, B15, B23, N5, N34, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D	40
Hydrofluoric acid, anhydrous, see Hydrogen fluoride, anhydrous												
Hydrofluoric acid, *with more than 60 percent strength*	8	UN1790	I	8, 6.1	A6, A7, B4, B15, B23, N5, N34, T10, TP2, TP12, TP13	None	201	243	0.5 L	2.5 L	D	12, 40
Hydrofluoric acid, *with not more than 60 percent strength*	8	UN1790	II	8, 6.1	A6, A7, B15, IB2, N5, N34, T8, TP2, TP12	154	202	243	1 L	30 L	D	12, 40
Hydrofluoroboric acid, see Fluoroboric acid												
Hydrofluorosilicic acid, see Fluorosilicic acid												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Hydrogen and Methane mixtures, compressed	2.1	UN2034		2.1		306	302	302, 314, 315.	Forbidden	150 kg	E	40, 57
	Hydrogen bromide, anhydrous	2.3	UN1048		2.3, 8	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Hydrogen chloride, anhydrous	2.3	UN1050		2.3, 8	3	None	304	None	Forbidden	Forbidden	D	40
	Hydrogen chloride, refrigerated liquid	2.3	UN2186		2.3, 8	3, B6	None	None	314, 315.	Forbidden	Forbidden	B	40
	Hydrogen, compressed	2.1	UN1049		2.1		306	302	302, 314.	Forbidden	150 kg	E	40, 57
	Hydrogen cyanide, solution in alcohol *with not more than 45 percent hydrogen cyanide*	6.1	UN3294	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Hydrogen cyanide, stabilized *with less than 3 percent water*	6.1	UN1051	I	6.1, 3	1, B35, B61, B65, B77, B82	None	195	244	Forbidden	Forbidden	D	40
	Hydrogen cyanide, stabilized, *with less than 3 percent water and absorbed in a porous inert material.*	6.1	UN1614	I	6.1	5	None	195	None	Forbidden	Forbidden	D	25, 40
	Hydrogen fluoride, anhydrous	8	UN1052	I	8, 6.1	3, B7, B46, B71, B77, T10, TP2	None	163	243	Forbidden	Forbidden	D	40
	Hydrogen in a metal hydride storage system	2.1	UN3468		2.1	167	None	214	None	Forbidden	Forbidden	D	
	Hydrogen iodide, anhydrous	2.3	UN2197		2.3	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Hydrogen iodide solution, see Hydriodic acid, solution												
	Hydrogen peroxide and peroxyacetic acid mixtures, stabilized *with acids, water and not more than 5 percent peroxyacetic acid.*	5.1	UN3149	II	5.1, 8	145, A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24	None	202	243	1 L	5 L	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions *with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary).*	5.1	UN2014	II	5.1, 8	12, B53, B80, B81, B85, IB2, T7, TP2, TP6, TP24, TP37	None	202	243	Forbidden	Forbidden	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions *with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary).*	5.1	UN2014	II	5.1, 8	A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37	None	202	243	1 L	5 L	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions *with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary).*	5.1	UN2984	III	5.1	A1, IB2, IP5, T4, TP1, TP6, TP24, TP37	152	203	241	2.5 L	30 L	B	25, 66, 75
	Hydrogen peroxide, stabilized *or* Hydrogen peroxide aqueous solutions, stabilized *with more than 60 percent hydrogen peroxide.*	5.1	UN2015	I	5.1, 8	12, B53, B80, B81, B85, T10, TP2, TP6, TP24, TP37	None	201	243	Forbidden	Forbidden	D	25, 66, 75
	Hydrogen, refrigerated liquid *(cryogenic liquid)*	2.1	UN1966		2.1	T75, TP5	None	316	318, 319.	Forbidden	Forbidden	D	40
	Hydrogen selenide, anhydrous	2.3	UN2202		2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
	Hydrogen sulfate, see Sulfuric acid												
	Hydrogen sulfide	2.3	UN1053		2.3, 2.1.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Hydrogendifluorides, n.o.s.	8	UN1740	II	8	IB8, IP2, IP4, N3, N34, T3, TP33	None	212	240	15 kg	50 kg	A	25, 40, 52
				III	8	IB8, IP3, N3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	25, 40, 52
	Hydroquinone, solid	6.1	UN2662	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Hydroquinone solution	6.1	UN3435	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Hydrosilicofluoric acid, see Fluorosilicic acid												
	Hydroxyl amine iodide	Forbidden											
	Hydroxylamine sulfate	8	UN2865	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	

	Hypochlorite solutions	8	UN1791	II	8	A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24	154	202	242	1 L	30 L	B	26
				III	8	IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26
	Hypochlorites, inorganic, n.o.s.	5.1	UN3212	II	5.1	A9, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	4, 48, 52, 56, 58, 69, 106, 116 118
	Hyponitrous acid	Forbidden											
	Igniter fuse, metal clad, see Fuse, *igniter, tubular, metal clad*												
	Igniters	1.1G	UN0121	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Igniters	1.2G	UN0314	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Igniters	1.3G	UN0315	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Igniters	1.4G	UN0325	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Igniters	1.4S	UN0454	II	1.4S		None	62	None	25 kg	100 kg	05	
	3,3'-Iminodipropylamine	8	UN2269	III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	
G	Infectious substances, affecting animals *only*	6.2	UN2900		6.2	A81, A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40
G	Infectious substances, affecting humans	6.2	UN2814		6.2	A81, A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40
	Inflammable, see Flammable												
	Initiating explosives (dry)	Forbidden											
	Inositol hexanitrate (dry)	Forbidden											
G	Insecticide gases, n.o.s.	2.2	UN1968		2.2		306	304	314, 315.	75 kg	150 kg	A	
G	Insecticide gases, flammable, n.o.s.	2.1	UN3354		2.1	T50	306	304	314, 315.	Forbidden	150 kg	D	40
G	Insecticide gases, toxic, flammable, n.o.s. *Inhalation hazard Zone A*	2.3	UN3355		2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
G	Insecticide gases, toxic, flammable, n.o.s. *Inhalation hazard Zone B*	2.3	UN3355		2.3, 2.1.	2, B9, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	40
G	Insecticide gases, toxic, flammable, n.o.s. *Inhalation hazard Zone C*	2.3	UN3355		2.3, 2.1.	3, B14	None	302, 305.	314, 315.	Forbidden	Forbidden	D	
G	Insecticide gases, toxic, flammable, n.o.s. *Inhalation hazard Zone D*	2.3	UN3355		2.3, 2.1.	4	None	302, 305.	314, 315.	Forbidden	Forbidden	D	
G	Insecticide gases, toxic, n.o.s.	2.3	UN1967		2.3	3	None	193, 334.	245	Forbidden	Forbidden	D	40
	Inulin trinitrate (dry)	Forbidden											
	Iodine azide (dry)	Forbidden											
	Iodine monochloride	8	UN1792	II	8	B6, IB8, IP2, IP4, N41, T7, TP2	None	212	240	Forbidden	50 kg	D	40, 66, 74, 89, 90
	Iodine pentafluoride	5.1	UN2495	I	5.1, 6.1, 8.		None	205	243	Forbidden	Forbidden	D	25, 40, 52, 66, 90
	2-Iodobutane	3	UN2390	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Iodomethylpropanes	3	UN2391	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Iodopropanes	3	UN2392	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Iodoxy compounds (dry)	Forbidden											
	Iridium nitratopentamine iridium nitrate	Forbidden											
	Iron chloride, see Ferric chloride												
	Iron oxide, spent, *or* Iron sponge, spent *obtained from coal gas purification*	4.2	UN1376	III	4.2	B18, IB8, IP3, T1, TP33	None	213	240	Forbidden	Forbidden	E	
	Iron pentacarbonyl	6.1	UN1994	I	6.1, 3	1, B9, B14, B30, B72, B77, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Iron sesquichloride, see Ferric chloride												
	Irritating material, see Tear gas substances, *etc*												
	Isobutane *see also* Petroleum gases, liquefied	2.1	UN1969		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
	Isobutanol *or* Isobutyl alcohol	3	UN1212	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isobutyl acetate	3	UN1213	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isobutyl acrylate, stabilized	3	UN2527	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isobutyl alcohol, *see* Isobutanol												
	Isobutyl aldehyde, *see* Isobutyraldehyde												
D	Isobutyl chloroformate	6.1	NA2742	I	6.1, 3, 8.	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	1 L	30 L	A	12, 13, 22, 25, 40, 48, 100
	Isobutyl formate	3	UN2393	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isobutyl isobutyrate	3	UN2528	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
+	Isobutyl isocyanate	3	UN2486	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP27	None	226	244	Forbidden	Forbidden	D	40
	Isobutyl methacrylate, stabilized	3	UN2283	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isobutyl propionate	3	UN2394	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	B	
	Isobutylamine	3	UN1214	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Isobutylene *see also* Petroleum gases, liquefied	2.1	UN1055		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
	Isobutyraldehyde *or* Isobutyl aldehyde	3	UN2045	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Isobutyric acid	3	UN2529	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
	Isobutyronitrile	3	UN2284	II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	E	40
	Isobutyryl chloride	3	UN2395	II	3, 8	IB1, T7, TP2	150	202	243	1 L	5 L	C	40
G	Isocyanates, flammable, toxic, n.o.s. *or* Isocyanate solutions, flammable, toxic, n.o.s. *flash point less than 23 degrees C.*	3	UN2478	II	3, 6.1	5, A3, A7, IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	D	40
				III	3, 6.1	5, A3, A7, IB3, T7, TP1, TP13, TP28	150	203	242	60 L	220 L	A	
G	Isocyanates, toxic, flammable, n.o.s. *or* Isocyanate solutions, toxic, flammable, n.o.s., *flash point not less than 23 degrees C but not more than 61 degrees C and boiling point less than 300 degrees C.*	6.1	UN3080	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	25, 40, 48
G	Isocyanates, toxic, n.o.s. *or* Isocyanate solutions, toxic, n.o.s., *flash point more than 61 degrees C and boiling point less than 300 degrees C.*	6.1	UN2206	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	E	25, 40, 48
				III	6.1	IB3, T7, TP1, TP13, TP28	153	203	241	60 L	220 L	E	25, 40, 48
	Isocyanatobenzotrifluorides	6.1	UN2285	II	6.1, 3	5, IB2, T7, TP2	153	202	243	5 L	60 L	D	25, 40, 48
	Isoheptenes	3	UN2287	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isohexenes	3	UN2288	II	3	IB2, IP8, T11, TP1	150	202	242	5 L	60 L	E	
	Isooctane, see Octanes												
	Isooctenes	3	UN1216	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isopentane, see Pentane												
	Isopentanoic acid, see Corrosive liquids, n.o.s.												
	Isopentenes	3	UN2371	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	Isophorone diisocyanate	6.1	UN2290	III	6.1	IB3, T4, TP2	153	203	241	60 L	220 L	B	40
	Isophoronediamine	8	UN2289	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Isoprene, stabilized	3	UN1218	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	Isopropanol *or* Isopropyl alcohol	3	UN1219	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isopropenyl acetate	3	UN2403	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isopropenylbenzene	3	UN2303	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isopropyl acetate	3	UN1220	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isopropyl acid phosphate	8	UN1793	III	8	IB2, T4, TP1	154	213	240	25 kg	100 kg	A	
	Isopropyl alcohol, *see* Isopropanol												
	Isopropyl butyrate	3	UN2405	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isopropyl chloroacetate	3	UN2947	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isopropyl chloroformate	6.1	UN2407	I	6.1, 3, 8.	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	40
	Isopropyl 2-chloropropionate	3	UN2934	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isopropyl isobutyrate	3	UN2406	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
+	Isopropyl isocyanate	3	UN2483	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Isopropyl mercaptan, see Propanethiols												
	Isopropyl nitrate	3	UN1222	II	3	IB99	150	202	None	5 L	60 L	D	
	Isopropyl phosphoric acid, see Isopropyl acid phosphate												
	Isopropyl propionate	3	UN2409	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Isopropylamine	3	UN1221	I	3, 8	T11, TP2	None	201	243	0.5 L	2.5 L	E	
	Isopropylbenzene	3	UN1918	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Isopropylcumyl hydroperoxide, with more than 72 percent in solution	Forbidden											

	Isosorbide dinitrate mixture *with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate.*	4.1	UN2907	II	4.1	IB6, IP2, N85	None	212	None	15 kg	50 kg	E	28, 36
	Isosorbide-5-mononitrate	4.1	UN3251	III	4.1	66, IB8	151	213	240	Forbidden	Forbidden	D	12
	Isothiocyanic acid	Forbidden											
	Jet fuel, see Fuel aviation, turbine engine												
D	Jet perforating guns, charged oil well, with detonator	1.1D	NA0124	II	1.1D	55, 56	None	62	None	Forbidden	Forbidden	07	
D	Jet perforating guns, charged oil well, with detonator	1.4D	NA0494	II	1.4D	55, 56	None	62	None	Forbidden	Forbidden	06	
	Jet perforating guns, charged *oil well, without detonator*	1.1D	UN0124	II	1.1D	55	None	62	None	Forbidden	Forbidden	07	
	Jet perforating guns, charged, *oil well, without detonator*	1.4D	UN0494	II	1.4D	55, 114	None	62	None	Forbidden	300 kg	06	
	Jet perforators, see Charges, shaped, *etc*												
	Jet tappers, without detonator, see Charges, shaped, *etc*												
	Jet thrust igniters, for rocket motors or Jato, see Igniters												
	Jet thrust unit (Jato), see Rocket motors												
	Kerosene	3	UN1223	III	3	144, B1, IB3, T2, TP2	150	203	242	60 L	220 L	A	
G	Ketones, liquid, n.o.s.	3	UN1224	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Krypton, compressed	2.2	UN1056		2.2		306	302	None	75 kg	150 kg	A	
	Krypton, refrigerated liquid *(cryogenic liquid)*	2.2	UN1970		2.2	T75, TP5	320	None	None	50 kg	500 kg	B	
	Lacquer base or lacquer chips, nitrocellulose, dry, see Nitrocellulose, *etc. (UN 2557)*												
	Lacquer base or lacquer chips, plastic, wet with alcohol or solvent, see Nitrocellulose *(UN2059, UN2555, UN2556, UN2557) or* Paint *etc.(UN1263).*												
	Lead acetate	6.1	UN1616	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead arsenates	6.1	UN1617	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead arsenites	6.1	UN1618	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead azide (dry)	Forbidden											
	Lead azide, wetted *with not less than 20 percent water or mixture of alcohol and water, by mass.*	1.1A	UN0129	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead compounds, soluble, n.o.s.	6.1	UN2291	III	6.1	138, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead cyanide	6.1	UN1620	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Lead dioxide	5.1	UN1872	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Lead dross, see Lead sulfate, *with more than 3 percent free acid*												
	Lead nitrate	5.1	UN1469	II	5.1, 6.1.	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Lead nitroresorcinate (dry)	Forbidden											
	Lead perchlorate, solid	5.1	UN1470	II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Lead perchlorate, solution	5.1	UN3408	III	5.1, 6.1.	IB2, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58
				II	5.1, 6.1.	IB2, T4, TP1	152	202	243	1 L	5 L	A	56, 58
	Lead peroxide, see Lead dioxide												
	Lead phosphite, dibasic	4.1	UN2989	II	4.1	IB8, IP2, IP4, T3, TP33	None	212	240	5 kg	25 kg	B	34
				III	4.1	IB8, IP3, T1, TP33	151	213	240	15 kg	50 kg	B	34
	Lead picrate (dry)	Forbidden											
	Lead styphnate (dry)	Forbidden											
	Lead styphnate, wetted *or* Lead trinitroresorcinate, wetted *with not less than 20 percent water or mixture of alcohol and water, by mass.*	1.1A	UN0130	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead sulfate *with more than 3 percent free acid*	8	UN1794	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Lead trinitroresorcinate, *see* Lead styphnate, *etc*												
	Life-saving appliances, not self inflating *containing dangerous goods as equipment*	9	UN3072		None		None	219	None	No limit	No limit	A	
	Life-saving appliances, self inflating	9	UN2990		None		None	219	None	No limit	No limit	A	
	Lighter replacement cartridges containing liquefied petroleum gases (and similar devices, each not exceeding 65 grams), see Lighters *or* lighter refills *etc. containing flammable gas.*												
	Lighters, fuse	1.4S	UN0131	II	1.4S		None	62	None	25 kg	100 kg	05	
	Lighters *or* Lighter refills *containing flammable gas*	2.1	UN1057		2.1	N10	None	21, 308	None	1 kg	15 kg	B	40
	Lime, unslaked, see Calcium oxide												
G	Liquefied gas, flammable, n.o.s.	2.1	UN3161		2.1	T50	306	304	314, 315.	Forbidden	150 kg	D	40
G	Liquefied gas, n.o.s.	2.2	UN3163		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
G	Liquefied gas, oxidizing, n.o.s.	2.2	UN3157		2.2, 5.1.	A14	306	304	314, 315.	75 kg	150 kg	D	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G I	Liquefied gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3308		2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3308		2.3, 8	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3308		2.3, 8	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3308		2.3, 8	4	None	304	314, 315.	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3309		2.3, 2.1, 8.	1	None	192	245	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3309		2.3, 2.1, 8.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3309		2.3, 2.1, 8.	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3309		2.3, 2.1, 8.	4	None	304	314, 315.	Forbidden	Forbidden	D	17, 40
G	Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3160		2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3160		2.3, 2.1.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3160		2.3, 2.1.	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3160		2.3, 2.1.	4	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3162		2.3	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3162		2.3	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3162		2.3	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3162		2.3	4	None	304	314, 315.	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3310		2.3, 5.1, 8.	1	None	192	245	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3310		2.3, 5.1, 8.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3310		2.3, 5.1, 8.	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3310		2.3, 5.1, 8.	4	None	304	314, 315.	Forbidden	Forbidden	D	40, 89, 90
G	Liquefied gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone A*	2.3	UN3307		2.3, 5.1.	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3307		2.3, 5.1.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3307		2.3, 5.1.	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3307		2.3, 5.1.	4	None	304	314, 315.	Forbidden	Forbidden	D	40
	Liquefied gases, *non-flammable charged with nitrogen, carbon dioxide or air*	2.2	UN1058		2.2		306	304	None	75 kg	150 kg	A	
	Liquefied hydrocarbon gas, see Hydrocarbon gas mixture, liquefied, n.o.s.												
	Liquefied natural gas, see Methane, *etc. (UN 1972)*												
	Liquefied petroleum gas *see* Petroleum gases, liquefied												
	Lithium	4.3	UN1415	I	4.3	A7, A19, IB4, IP1, N45	None	211	244	Forbidden	15 kg	E	52
	Lithium acetylide ethylenediamine complex, see Water reactive solid *etc*												
	Lithium alkyls, liquid	4.2	UN2445	I	4.2, 4.3.	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	
	Lithium alkyls, solid	4.2	UN3433	I	4.2, 4.3.	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	

Lithium aluminum hydride	4.3	UN1410	I	4.3	A19	None	211	242	Forbidden	15 kg	E	52
Lithium aluminum hydride, ethereal	4.3	UN1411	I	4.3, 3	A2, A3, A11, N34	None	201	244	Forbidden	1 L	D	40
Lithium batteries, contained in equipment	9	UN3091	II	9	29, A54, A55, A102, A104	185	185	None	5 kg	5 kg	A	
Lithium batteries packed with equipment	9	UN3091	II	9	29, A54, A55, A101, A103	185	185	None	5 kg gross	35 kg gross	A	
Lithium battery	9	UN3090	II	9	29, A54, A55, A100	185	185	None	5 kg gross	35 kg gross	A	
Lithium borohydride	4.3	UN1413	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium ferrosilicon	4.3	UN2830	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	40, 85, 103
Lithium hydride	4.3	UN1414	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium hydride, fused solid	4.3	UN2805	II	4.3	A8, A19, A20, IB4, T3, TP33	151	212	241	15 kg	50 kg	E	52
Lithium hydroxide	8	UN2680	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
Lithium hydroxide, solution	8	UN2679	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	29
			III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	29, 96
Lithium hypochlorite, dry *with more than 39% available chlorine (8.8% available oxygen) or* Lithium hypochlorite mixtures, dry *with more than 39% available chlorine (8.8% available oxygen).*	5.1	UN1471	II	5.1	A9, IB8, IP2, IP4, N34	152	212	240	5 kg	25 kg	A	4, 48, 52, 56, 58, 69, 106, 116
Lithium in cartridges, see Lithium												
Lithium nitrate	5.1	UN2722	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Lithium nitride	4.3	UN2806	I	4.3	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg	E	
Lithium peroxide	5.1	UN1472	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	None	5 kg	25 kg	A	13, 52, 66, 75
Lithium silicon	4.3	UN1417	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	A	85, 103
LNG, see Methane *etc. (UN 1972)*												
London purple	6.1	UN1621	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
LPG, see Petroleum gases, liquefied												
Lye, see Sodium hydroxide, solutions												
Magnesium alkyls	4.2	UN3053	I	4.2, 4.3.	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Magnesium aluminum phosphide	4.3	UN1419	I	4.3, 6.1.	A19, N34, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
+ Magnesium arsenate	6.1	UN1622	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Magnesium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
Magnesium bromate	5.1	UN1473	II	5.1	A1, IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium chlorate	5.1	UN2723	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium diamide	4.2	UN2004	II	4.2	A8, A19, A20, IB6, T3, TP33	None	212	241	15 kg	50 kg	C	
Magnesium diphenyl	4.2	UN2005	I	4.2	T21, TP7, TP33	None	187	244	Forbidden	Forbidden	C	
Magnesium dross, wet or hot	Forbidden											
Magnesium fluorosilicate	6.1	UN2853	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Magnesium granules, coated, *particle size not less than 149 microns*	4.3	UN2950	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	240	25 kg	100 kg	A	52
Magnesium hydride	4.3	UN2010	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Magnesium *or* Magnesium alloys *with more than 50 percent magnesium in pellets, turnings or ribbons.*	4.1	UN1869	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	39, 52, 53, 74, 101
Magnesium nitrate	5.1	UN1474	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Magnesium perchlorate	5.1	UN1475	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium peroxide	5.1	UN1476	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
Magnesium phosphide	4.3	UN2011	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Magnesium, powder *or* Magnesium alloys, powder	4.3	UN1418	I	4.3, 4.2.	A19, B56	None	211	244	Forbidden	15 kg	A	39, 52
			II	4.3, 4.2.	A19, B56, IB5, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	39, 52
			III	4.3, 4.2.	A19, B56, IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	A	39, 52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Magnesium scrap, see Magnesium, *etc. (UN 1869)*												
	Magnesium silicide	4.3	UN2624	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	B	85, 103
	Magnetized material, see § 173.21												
	Maleic anhydride	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Maleic anhydride, molten	8	UN2215	III	8	T4, TP3	None	213	240	Forbidden	Forbidden	A	
	Malononitrile	6.1	UN2647	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12
	Mancozeb (manganese ethylenebisdithiocarbamate complex with zinc) see Maneb												
	Maneb *or* Maneb preparations *with not less than 60 percent maneb*	4.2	UN2210	III	4.2, 4.3.	57, A1, A19, IB6, T1, TP33	None	213	242	25 kg	100 kg	A	34
	Maneb stabilized *or* Maneb preparations, stabilized *against self-heating*	4.3	UN2968	III	4.3	54, A1, A19, IB8, IP4, T1, TP33	151	213	242	25 kg	100 kg	B	34, 52
	Manganese nitrate	5.1	UN2724	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Manganese resinate	4.1	UN1330	III	4.1	A1, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	
	Mannitan tetranitrate	Forbidden											
	Mannitol hexanitrate (dry)	Forbidden											
	Mannitol hexanitrate, wetted *or* Nitromannite, wetted *with not less than 40 percent water, or mixture of alcohol and water, by mass.*	1.1D	UN0133	II	1.1D	121	None	62	None	Forbidden	Forbidden	10	
	Marine pollutants, liquid or solid, n.o.s., see Environmentally hazardous substances, liquid *or* solid, n.o.s..												
	Matches, block, see Matches, 'strike anywhere'												
	Matches, fusee	4.1	UN2254	III	4.1		186	186	None	Forbidden	Forbidden	A	
	Matches, safety *(book, card or strike on box)*	4.1	UN1944	III	4.1		186	186	None	25 kg	100 kg	A	
	Matches, strike anywhere	4.1	UN1331	III	4.1		186	186	None	Forbidden	Forbidden	B	
	Matches, wax, Vesta	4.1	UN1945	III	4.1		186	186	None	25 kg	100 kg	B	
	Matting acid, see Sulfuric acid												
	Medicine, liquid, flammable, toxic, n.o.s.	3	UN3248	II	3, 6.1	36, IB2	150	202	None	1 L	5 L	B	40
				III	3, 6.1	36, IB3	150	203	None	5 L	5 L	A	
	Medicine, liquid, toxic, n.o.s.	6.1	UN1851	II	6.1	36	153	202	243	5 L	5 L	C	40
				III	6.1	36	153	203	241	5 L	5 L	C	40
	Medicine, solid, toxic, n.o.s.	6.1	UN3249	II	6.1	36, T3, TP33	153	212	None	5 kg	5 kg	C	40
				III	6.1	36, T1, TP33	153	213	None	5 kg	5 kg	C	40
	Memtetrahydrophthalic anhydride, see Corrosive liquids, n.o.s.												
	Mercaptans, liquid, flammable, n.o.s. *or* Mercaptan mixture, liquid, flammable, n.o.s.	3	UN3336	I	3	T11, TP2	150	201	243	1 L	30 L	E	95
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	95
				III	3	B1, B52, IB3, T4, TP1, TP29	150	203	241	60 L	220 L	B	95
	Mercaptans, liquid, flammable, toxic, n.o.s. *or* Mercaptan mixtures, liquid, flammable, toxic, n.o.s..	3	UN1228	II	3, 6.1	IB2, T11, TP2, TP27	None	202	243	Forbidden	60 L	B	40, 95
				III	3, 6.1	A6, B1, IB3, T7, TP1, TP28	150	203	242	5 L	220 L	A	40, 95
	Mercaptans, liquid, toxic, flammable, n.o.s. *or* Mercaptan mixtures, liquid, toxic, flammable, n.o.s., *flash point not less than 23 degrees C.*	6.1	UN3071	II	6.1, 3	A6, IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	C	40, 121
	5-Mercaptotetrazol-1-acetic acid	1.4C	UN0448	II	1.4C		None	62	None	Forbidden	75 kg	09	
	Mercuric arsenate	6.1	UN1623	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercuric chloride	6.1	UN1624	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercuric compounds, see Mercury compounds, *etc*												
	Mercuric nitrate	6.1	UN1625	II	6.1	IB8, IP2, IP4, N73, T3, TP33	153	212	242	25 kg	100 kg	A	
+	Mercuric potassium cyanide	6.1	UN1626	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52
	Mercuric sulfocyanate, see Mercury thiocyanate												
	Mercurol, see Mercury nucleate												
	Mercurous azide	Forbidden											
	Mercurous compounds, see Mercury compounds, *etc*												
	Mercurous nitrate	6.1	UN1627	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
A W	Mercury	8	UN2809	III	8		164	164	240	35 kg	35 kg	B	40, 97

	Mercury acetate	6.1	UN1629	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury acetylide	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Mercury ammonium chloride	6.1	UN1630	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury based pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2778	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
	.....	.....		II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Mercury based pesticides, liquid, toxic	6.1	UN3012	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Mercury based pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3011	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Mercury based pesticides, solid, toxic	6.1	UN2777	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Mercury benzoate	6.1	UN1631	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury bromides	6.1	UN1634	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury compounds, liquid, n.o.s.	6.1	UN2024	I	6.1		None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3	153	203	241	60 L	220 L	B	40
	Mercury compounds, solid, n.o.s.	6.1	UN2025	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	.....
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
A	Mercury *contained in manufactured articles*	8	UN2809	III	8		None	164	None	No limit	No limit	B	40, 97
	Mercury cyanide	6.1	UN1636	II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Mercury fulminate, wetted *with not less than 20 percent water, or mixture of alcohol and water, by mass.*	1.1A	UN0135	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	.....
	Mercury gluconate	6.1	UN1637	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury iodide	6.1	UN1638	II	6.1	IB2, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury iodide aquabasic ammonobasic (Iodide of Millon's base)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Mercury nitride	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Mercury nucleate	6.1	UN1639	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury oleate	6.1	UN1640	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury oxide	6.1	UN1641	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury oxycyanide	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Mercury oxycyanide, desensitized	6.1	UN1642	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52, 91
	Mercury potassium iodide	6.1	UN1643	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury salicylate	6.1	UN1644	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
+	Mercury sulfates	6.1	UN1645	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mercury thiocyanate	6.1	UN1646	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Mesityl oxide	3	UN1229	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
G	Metal carbonyls, liquid, n.o.s.	6.1	UN3281	I	6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Metal carbonyls, solid, n.o.s.	6.1	UN3466	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	B	40
	Metal catalyst, dry	4.2	UN2881	I	4.2	N34, T21, TP7, TP33	None	187	None	Forbidden	Forbidden	C	.....
	.....	.....		II	4.2	IB6, IP2, N34, T3, TP33	None	187	242	Forbidden	50 kg	C	.....
	.....	.....		III	4.2	IB8, IP3, N34, T1, TP33	None	187	241	25 kg	100 kg	C	.....
	Metal catalyst, wetted *with a visible excess of liquid*	4.2	UN1378	II	4.2	A2, A8, IB1, N34, T3, TP33	None	212	None	Forbidden	50 kg	C	.....
	Metal hydrides, flammable, n.o.s.	4.1	UN3182	II	4.1	A1, IB4, T3, TP33	151	212	240	15 kg	50 kg	E	.....
	.....	.....		III	4.1	A1, IB4, T1, TP33	151	213	240	25 kg	100 kg	E	.....
	Metal hydrides, water reactive, n.o.s.	4.3	UN1409	I	4.3	A19, N34, N40	None	211	242	Forbidden	15 kg	D	52
	.....	.....		II	4.3	A19, IB4, N34, N40, T3, TP33	151	212	242	15 kg	50 kg	D	52
	Metal powder, self-heating, n.o.s.	4.2	UN3189	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	.....
	.....	.....		III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	.....
	Metal powders, flammable, n.o.s.	4.1	UN3089	II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	.....
	.....	.....		III	4.1	IB6, T1, TP33	151	213	240	25 kg	100 kg	B	.....
	Metal salts of methyl nitramine (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
G	Metal salts of organic compounds, flammable, n.o.s.	4.1	UN3181	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	40
	.....	.....		III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	40
	Metaldehyde	4.1	UN1332	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	.....
G	Metallic substance, water-reactive, n.o.s.	4.3	UN3208	I	4.3	A7, IB4	None	211	242	Forbidden	15 kg	E	40
	.....	.....		II	4.3	A7, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	40
	.....	.....		III	4.3	A7, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	40
G	Metallic substance, water-reactive, self-heating, n.o.s.	4.3	UN3209	I	4.3, 4.2.	A7	None	211	242	Forbidden	15 kg	E	40
	.....	.....		II	4.3, 4.2.	A7, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	E	40
	.....	.....		III	4.3, 4.2.	A7, IB8, IP4, T1, TP33	None	213	242	25 kg	100 kg	E	40
	Methacrylaldehyde, stabilized	3	UN2396	II	3, 6.1	45, IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Methacrylic acid, stabilized	8	UN2531	II	8	IB2, T7, TP1, TP18, TP30	154	202	242	1 L	30 L	C	40
+	Methacrylonitrile, stabilized	3	UN3079	I	3, 6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	12, 40, 48
	Methallyl alcohol	3	UN2614	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Methane and hydrogen, mixtures, see Hydrogen and methane, mixtures, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Methane, compressed *or* Natural gas, compressed *(with high methane content)*	2.1	UN1971	.....	2.1		306	302	302	Forbidden	150 kg	E	40
	Methane, refrigerated liquid *(cryogenic liquid) or* Natural gas, refrigerated liquid *(cryogenic liquid), with high methane content).*	2.1	UN1972	.....	2.1	T75, TP5	None	None	318	Forbidden	Forbidden	D	40
	Methanesulfonyl chloride	6.1	UN3246	I	6.1, 8	2, B9, B14, B32, B74, T20, TP2, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40

+ I	Methanol	3	UN1230	II	3, 6.1	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
D	Methanol	3	UN1230	II	3	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
	Methazoic acid	Forbidden											
	4-Methoxy-4-methylpentan-2-one	3	UN2293	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1-Methoxy-2-propanol	3	UN3092	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
+	Methoxymethyl isocyanate	3	UN2605	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Methyl acetate	3	UN1231	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl acetylene and propadiene mixtures, stabilized	2.1	UN1060		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Methyl acrylate, stabilized	3	UN1919	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	
	Methyl alcohol, see Methanol												
	Methyl allyl chloride	3	UN2554	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	E	
	Methyl amyl ketone, see Amyl methyl ketone												
	Methyl bromide	2.3	UN1062		2.3	3, B14, T50	None	193	314, 315.	Forbidden	Forbidden	D	40
	Methyl bromide and chloropicrin mixtures with more than 2 percent chloropicrin, see Chloropicrin and methyl bromide mixtures.												
	Methyl bromide and chloropicrin mixtures with not more than 2 percent chloropicrin, see Methyl bromide.												
	Methyl bromide and ethylene dibromide mixtures, liquid	6.1	UN1647	I	6.1	2, B9, B14, B32, B74, N65, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	C	40
	Methyl bromoacetate	6.1	UN2643	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
	2-Methlybutanal	3	UN3371	II		3IB2, T4, TP1	150	202	242	5 L	60 L	B	
	2-Methyl-1-butene	3	UN2459	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	2-Methyl-2-butene	3	UN2460	II	3	IB2, IP8, T7, TP1	None	202	242	5 L	60 L	E	
	3-Methyl-1-butene	3	UN2561	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	Methyl tert-butyl ether	3	UN2398	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
	Methyl butyrate	3	UN1237	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl chloride, *or* Refrigerant gas R 40	2.1	UN1063		2.1	T50	306	304	314, 315.	5 kg	100 kg	D	40
	Methyl chloride and chloropicrin mixtures, see Chloropicrin and methyl chloride mixtures												
	Methyl chloride and methylene chloride mixtures	2.1	UN1912		2.1	T50	306	304	314, 315.	Forbidden	150 kg	D	40
	Methyl chloroacetate	6.1	UN2295	I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	D	
	Methyl chlorocarbonate, see Methyl chloroformate												
	Methyl chloroform, see 1,1,1-Trichloroethane												
	Methyl chloroformate	6.1	UN1238	I	6.1, 3, 8.	1, B9, B14, B30, B72, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	21, 40, 100
	Methyl chloromethyl ether	6.1	UN1239	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Methyl 2-chloropropionate	3	UN2933	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl dichloroacetate	6.1	UN2299	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl ethyl ether, see Ethyl methyl ether												
	Methyl ethyl ketone, *see* Ethyl methyl ketone												
	Methyl ethyl ketone peroxide, in solution with more than 9 percent by mass active oxygen	Forbidden											
	2-Methyl-5-ethylpyridine	6.1	UN2300	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl fluoride, *or* Refrigerant gas R 41	2.1	UN2454		2.1		306	304	314, 315.	Forbidden	150 kg	E	40
	Methyl formate	3	UN1243	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	2-Methyl-2-heptanethiol	6.1	UN3023	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 102
	Methyl iodide	6.1	UN2644	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40
	Methyl isobutyl carbinol	3	UN2053	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl isobutyl ketone	3	UN1245	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl isobutyl ketone peroxide, in solution with more than 9 percent by mass active oxygen	Forbidden											
	Methyl isocyanate	6.1	UN2480	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Methyl isopropenyl ketone, stabilized	3	UN1246	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Methyl isothiocyanate	6.1	UN2477	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	
	Methyl isovalerate	3	UN2400	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl magnesium bromide, in ethyl ether	4.3	UN1928	I	4.3, 3		None	201	243	Forbidden	1 L	D	
	Methyl mercaptan	2.3	UN1064		2.3, 2.1.	3, B7, B9, B14, T50	None	304	314, 315.	Forbidden	Forbidden	D	40
	Methyl mercaptopropionaldehyde, see Thia-4-pentanal												
	Methyl methacrylate monomer, stabilized	3	UN1247	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Methyl nitramine (dry)	Forbidden											
	Methyl nitrate	Forbidden											
	Methyl nitrite	Forbidden											
	Methyl norbornene dicarboxylic anhydride, see Corrosive liquids, n.o.s.												
	Methyl orthosilicate	6.1	UN2606	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	E	40
D	Methyl phosphonic dichloride	6.1	NA9206	I	6.1, 8	2, B9, B14, B32, B74, N34, N43, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	
	Methyl phosphonothioic dichloride, anhydrous, see Corrosive liquid, n.o.s.												
D	Methyl phosphonous dichloride, *pyrophoric liquid*	6.1	NA2845	I	6.1, 4.2.	2, B9, B14, B16, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	18
	Methyl picric acid (heavy metal salts of)	Forbidden											
	Methyl propionate	3	UN1248	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl propyl ether	3	UN2612	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40
	Methyl propyl ketone	3	UN1249	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl sulfate, see Dimethyl sulfate												
	Methyl sulfide, see Dimethyl sulfide												
	Methyl trichloroacetate	6.1	UN2533	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl trimethylol methane trinitrate	Forbidden											
	Methyl vinyl ketone, stabilized	6.1	UN1251	I	6.1, 3, 8.	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	B	40
	Methylal	3	UN1234	II	3	IB2, IP8, T7, TP2	None	202	242	5 L	60 L	E	
	Methylamine, anhydrous	2.1	UN1061		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Methylamine, aqueous solution	3	UN1235	II	3, 8	B1, IB2, T7, TP1	150	202	243	1 L	5 L	E	135
	Methylamine dinitramine and dry salts thereof	Forbidden											
	Methylamine nitroform	Forbidden											
	Methylamine perchlorate (dry)	Forbidden											
	Methylamyl acetate	3	UN1233	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	N-Methylaniline	6.1	UN2294	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	alpha-Methylbenzyl alcohol, liquid	6.1	UN2937	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	alpha-Methylbenzyl alcohol, solid	6.1	UN3438	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	3-Methylbutan-2-one	3	UN2397	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	N-Methylbutylamine	3	UN2945	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Methylchlorosilane	2.3	UN2534		2.3, 2.1, 8.	2, B9, B14, N34	None	226	314, 315.	Forbidden	Forbidden	D	17, 40
	Methylcyclohexane	3	UN2296	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methylcyclohexanols, *flammable*	3	UN2617	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylcyclohexanone	3	UN2297	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylcyclopentane	3	UN2298	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
D	Methyldichloroarsine	6.1	NA1556	I	6.1	2, T20, TP4, TP12, TP13, TP38, TP45	None	192	None	Forbidden	Forbidden	D	40

	Methyldichlorosilane	4.3	UN1242	I	4.3, 8, 3.	A2, A3, A7, B6, B77, N34, T10, TP2, TP7, TP13	None	201	243	Forbidden	1 L	D	21, 28, 40, 49, 100
	Methylene chloride, see Dichloromethane												
	Methylene glycol dinitrate	Forbidden											
	2-Methylfuran	3	UN2301	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	a-Methylglucoside tetranitrate	Forbidden											
	a-Methylglycerol trinitrate	Forbidden											
	5-Methylhexan-2-one	3	UN2302	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylhydrazine	6.1	UN1244	I	6.1, 3, 8.	1, B7, B9, B14, B30, B72, B77, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	21, 40, 49, 100
	4-Methylmorpholine *or* n-methylmorpholine	3	UN2535	II	3, 8	B6, IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Methylpentadienes	3	UN2461	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	2-Methylpentan-2-ol	3	UN2560	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylpentanes, see Hexanes												
	Methylphenyldichlorosilane	8	UN2437	II	8	IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
	1-Methylpiperidine	3	UN2399	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
	Methyltetrahydrofuran	3	UN2536	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyltrichlorosilane	3	UN1250	I	3, 8	A7, B6, B77, N34, T11, TP2, TP13	None	201	243	Forbidden	2.5 L	B	40
	alpha-Methylvaleraldehyde	3	UN2367	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Mine rescue equipment containing carbon dioxide, see Carbon dioxide												
	Mines *with bursting charge*	1.1F	UN0136	II	1.1F			62	None	Forbidden	Forbidden	08	
	Mines *with bursting charge*	1.1D	UN0137	II	1.1D			62	None	Forbidden	Forbidden	03	
	Mines *with bursting charge*	1.2D	UN0138	II	1.2D			62	None	Forbidden	Forbidden	03	
	Mines *with bursting charge*	1.2F	UN0294	II	1.2F			62	None	Forbidden	Forbidden	08	
	Mixed acid, see Nitrating acid, mixtures *etc*												
	Mobility aids, see Battery powered equipment *or* Battery powered vehicle'												
D	Model rocket motor	1.4C	NA0276	II	1.4C	51	None	62	None	Forbidden	75 kg	06	
D	Model rocket motor	1.4S	NA0323	II	1.4S	51	None	62	None	25 kg	100 kg	05	
	Molybdenum pentachloride	8	UN2508	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	C	40
	Monochloroacetone (unstabilized)	Forbidden											
	Monochloroethylene, see Vinyl chloride, stabilized												
	Monoethanolamine, see Ethanolamine, solutions												
	Monoethylamine, see Ethylamine												
	Morpholine	8	UN2054	I	8, 3	A6, T10, TP2	None	201	243	0.5 L	2.5 L	A	
	Morpholine, aqueous, mixture, see Corrosive liquids, n.o.s.												
	Motor fuel anti-knock compounds *see* Motor fuel anti-knock mixtures												
+	Motor fuel anti-knock mixtures	6.1	UN1649	I	6.1, 3	14, 151, B9, B90, T14, TP2, TP13	None	201	244	Forbidden	30 L	D	25, 40
	Motor spirit, *see* Gasoline												
	Muriatic acid, see Hydrochloric acid												
	Musk xylene, *see* 5-tert-Butyl-2,4,6-trinitro-m-xylene												
	Naphtha see Petroleum distillates n.o.s.												
	Naphthalene, crude *or* Naphthalene, refined	4.1	UN1334	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Naphthalene diozonide	Forbidden											
	beta-Naphthylamine	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	beta-Naphthylamine, solid	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	beta-Naphthylamine solution	6.1	UN3411	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB2, T7, TP2	153	203	241	60 L	220 L	A	
	alpha-Naphthylamine	6.1	UN2077	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Naphthalene, molten	4.1	UN2304	III	4.1	IB1, T1, TP3	151	213	241	Forbidden	Forbidden	C	
	Naphthylamineperchlorate	Forbidden											
	Naphthylthiourea	6.1	UN1651	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Naphthylurea	6.1	UN1652	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Natural gases (with high methane content), see Methane, *etc. (UN 1971, UN 1972)*												
	Neohexane, see Hexanes												
	Neon, compressed	2.2	UN1065		2.2		306	302	302	75 kg	150 kg	A	
	Neon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1913		2.2	T75, TP5	320	316	None	50 kg	500 kg	B	
	New explosive or explosive device, see §§ 173.51 and 173.56												
	Nickel carbonyl	6.1	UN1259	I	6.1, 3	1	None	198	None	Forbidden	Forbidden	D	18, 40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Nickel cyanide	6.1	UN1653	II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Nickel nitrate	5.1	UN2725	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Nickel nitrite	5.1	UN2726	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nickel picrate	Forbidden											
	Nicotine	6.1	UN1654	II	6.1	IB2	153	202	243	5 L	60 L	A	
	Nicotine compounds, liquid, n.o.s. *or* Nicotine preparations, liquid, n.o.s.	6.1	UN3144	I	6.1	A4	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	B	40
	Nicotine compounds, solid, n.o.s. *or* Nicotine preparations, solid, n.o.s.	6.1	UN1655	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nicotine hydrochloride liquid *or* solution	6.1	UN1656	II	6.1	IB2	153	202	243	5 L	60 L	A	
				III	6.1	IB3	153	203	241	60 L	220 L	A	
	Nicotine hydrochloride, solid	6.1	UN3444	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine salicylate	6.1	UN1657	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine sulfate solution	6.1	UN1658	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	A	
	Nicotine sulphate, solid	6.1	UN3445	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine tartrate	6.1	UN1659	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitrated paper (unstable)	Forbidden											
	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	UN3218	II	5.1	58, IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
				III	5.1	58, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Nitrates, inorganic, n.o.s.	5.1	UN1477	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
				III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nitrates of diazonium compounds	Forbidden											
	Nitrating acid mixtures, spent *with more than 50 percent nitric acid*	8	UN1826	I	8, 5.1	A7, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures spent *with not more than 50 percent nitric acid*	8	UN1826	II	8	A7, B2, IB2, T8, TP2, TP12	None	158	242	Forbidden	30 L	D	40
	Nitrating acid mixtures *with more than 50 percent nitric acid*	8	UN1796	I	8, 5.1	A7, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures *with not more than 50 percent nitric acid*	8	UN1796	II	8	A7, B2, IB2, T8, TP2, TP12, TP13	None	158	242	Forbidden	30 L	D	40
	Nitric acid *other than red fuming, with more than 70 percent nitric acid*	8	UN2031	I	8, 5.1	A3, B47, B53, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	44, 66, 89, 90, 110, 111
	Nitric acid *other than red fuming, with not more than 70 percent nitric acid*	8	UN2031	II	8	A6, B2, B47, B53, IB2, T8, TP2, TP12	None	158	242	Forbidden	30 L	D	44, 66, 89, 90, 110, 111
+	Nitric acid, red fuming	8	UN2032	I	8, 5.1, 6.1.	2, B9, B32, B74, T20, TP2, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 66, 74, 89, 90
	Nitric oxide, compressed	2.3	UN1660		2.3, 5.1, 8.	1, B37, B46, B50, B60, B77	None	337	None	Forbidden	Forbidden	D	40, 89, 90

	Nitric oxide and dinitrogen tetroxide mixtures *or* Nitric oxide and nitrogen dioxide mixtures	2.3	UN1975		2.3, 5.1, 8.	1, B7, B9, B14, B45, B46, B61, B66, B67, B77	None	337	None	Forbidden	Forbidden	D	40, 89, 90
G	Nitriles, flammable, toxic, n.o.s.	3	UN3273	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40, 52
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40, 52
G	Nitriles, toxic, flammable, n.o.s.	6.1	UN3275	I	6.1, 3	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 52
G	Nitriles, toxic, liquid, n.o.s.	6.1	UN3276	I	6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3439	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	52
G	Nitriles, toxic, liquid, n.o.s.	6.1	UN3276	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3439	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	52
G	Nitriles, toxic, liquid, n.o.s.	6.1	UN3276	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3439	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Nitrites, inorganic, aqueous solution, n.o.s.	5.1	UN3219	II	5.1	IB1, T4, TP1	152	202	242	1 L	5 L	B	46, 56, 58, 133
				III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	46, 56, 58, 133
	Nitrites, inorganic, n.o.s.	5.1	UN2627	II	5.1	33, IB8, IP4, T3, TP33	152	212	None	5 kg	25 kg	A	46, 56, 58, 133
	3-Nitro-4-chlorobenzotrifluoride	6.1	UN2307	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	6-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden											
	Nitro isobutane triol trinitrate	Forbidden											
	N-Nitro-N-methylglycolamide nitrate	Forbidden											
	2-Nitro-2-methylpropanol nitrate	Forbidden											
	Nitro urea	1.1D	UN0147	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	N-Nitroaniline	Forbidden											
+	Nitroanilines (*o-; m-; p-;*)	6.1	UN1661	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitroanisole, liquid	6.1	UN2730	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroanisoles, solid	6.1	UN3458	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
+	Nitrobenzene	6.1	UN1662	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	m-Nitrobenzene diazonium perchlorate	Forbidden											
	Nitrobenzenesulfonic acid	8	UN2305	II	8	B2, B4, IB8, IP2, IP4, T3, TP33	154	202	242	1 L	30 L	A	
	Nitrobenzol, see Nitrobenzene												
	5-Nitrobenzotriazol	1.1D	UN0385	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitrobenzotrifluorides, liquid	6.1	UN2306	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Nitrobenzotrifluorides, solid	6.1	UN3431	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Nitrobromobenzenes, liquid	6.1	UN2732	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitrobromobenzenes, solid	6.1	UN3459	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrocellulose, *dry or wetted with less than 25 percent water (or alcohol), by mass*	1.1D	UN0340	II	1.1D		None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose membrane filters, *with not more than 12.6% nitrogen, by dry mass*	4.1	UN3270	II	4.1	43, A1	151	212	240	1 kg	15 kg	D	
	Nitrocellulose, plasticized *with not less than 18 percent plasticizing substance, by mass*	1.3C	UN0343	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Nitrocellulose, solution, flammable *with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.*	3	UN2059	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
				II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Nitrocellulose, *unmodified or plasticized with less than 18 percent plasticizing substance, by mass.*	1.1D	UN0341	II	1.1D		None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose, wetted *with not less than 25 percent alcohol, by mass*	1.3C	UN0342	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Nitrocellulose with alcohol *with not less than 25 percent alcohol by mass, and with not more than 12.6 percent nitrogen, by dry mass.*	4.1	UN2556	II	4.1		151	212	None	1 kg	15 kg	D	28
	Nitrocellulose, *with not more than 12.6 percent nitrogen, by dry mass, or* Nitrocellulose mixture with pigment *or* Nitrocellulose mixture with plasticizer *or* Nitrocellulose mixture with pigment and plasticizer.	4.1	UN2557	II	4.1	44	151	212	None	1 kg	15 kg	D	28
	Nitrocellulose with water *with not less than 25 percent water, by mass*	4.1	UN2555	II	4.1		151	212	None	15 kg	50 kg	E	28
	Nitrochlorobenzene, see Chloronitrobenzenes *etc*												
	Nitrocresols, solid	6.1	UN2446	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrocresols, liquid	6.1	UN3434	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroethane	3	UN2842	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Nitroethyl nitrate	Forbidden											
	Nitroethylene polymer	Forbidden											
	Nitrogen, compressed	2.2	UN1066		2.2		306	302	314, 315.	75 kg	150 kg	A	
	Nitrogen dioxide, *see* Dinitrogen tetroxide												
	Nitrogen fertilizer solution, see Fertilizer ammoniating solution *etc*												
	Nitrogen, mixtures with rare gases, see Rare gases and nitrogen mixtures												
	Nitrogen peroxide, see Dinitrogen tetroxide												
	Nitrogen, refrigerated liquid *cryogenic liquid*	2.2	UN1977		2.2	T75, TP5	320	316	318	50 kg	500 kg	D	
	Nitrogen tetroxide and nitric oxide mixtures, see Nitric oxide and nitrogen tetroxide mixtures												
	Nitrogen tetroxide, see Dinitrogen tetroxide												
	Nitrogen trichloride	Forbidden											
	Nitrogen trifluoride	2.2	UN2451		2.2, 5.1.		None	302	None	75 kg	150 kg	D	40
	Nitrogen triiodide	Forbidden											
	Nitrogen triiodide monoamine	Forbidden											
	Nitrogen trioxide	2.3	UN2421		2.3, 5.1, 8.	1	None	336	245	Forbidden	Forbidden	D	40, 89, 90
	Nitroglycerin, desensitized *with not less than 40 percent non-volatile water insoluble phlegmatizer, by mass.*	1.1D	UN0143	II	1.1D, 6.1.	125	None	62	None	Forbidden	Forbidden	13	21E
	Nitroglycerin, liquid, not desensitized	Forbidden											
	Nitroglycerin mixture, desensitized, liquid, flammable, n.o.s. *with not more than 30 percent nitroglycerin, by mass.*	3	UN3343		3	129	None	214	None	Forbidden	Forbidden	D	
	Nitroglycerin mixture, desensitized, liquid, n.o.s. *with not more than 30% nitroglycerin, by mass*	3	UN3357	II	3	142	None	202	243	5 L	60 L	E	
	Nitroglycerin mixture, desensitized, solid, n.o.s. *with more than 2 percent but not more than 10 percent nitroglycerin, by mass.*	4.1	UN3319	II	4.1	118	None	None	None	Forbidden	0.5 kg	E	
	Nitroglycerin, solution in alcohol, *with more than 1 percent but not more than 5 percent nitroglycerin.*	3	UN3064	II	3	N8	None	202	None	Forbidden	5 L	E	
	Nitroglycerin, solution in alcohol, *with more than 1 percent but not more than 10 percent nitrogylcerin.*	1.1D	UN0144	II	1.1D		None	62	None	Forbidden	Forbidden	10	21E
	Nitroglycerin solution in alcohol *with not more than 1 percent nitroglycerin*	3	UN1204	II	3	IB2, N34	150	202	None	5 L	60 L	B	
	Nitroguanidine nitrate	Forbidden											
	Nitroguanidine *or* Picrite, *dry or wetted with less than 20 percent water, by mass*	1.1D	UN0282	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitroguanidine, wetted *or* Picrite, wetted *with not less than 20 percent water, by mass*	4.1	UN1336	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28
	1-Nitrohydantoin	Forbidden											
	Nitrohydrochloric acid	8	UN1798	I	8	A3, B10, N41, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D	40, 66, 74, 89, 90
	Nitromannite (dry)	Forbidden											
	Nitromannite, wetted, *see* Mannitol hexanitrate, *etc*												
	Nitromethane	3	UN1261	II	3		150	202	None	Forbidden	60 L	A	
	Nitromuriatic acid, see Nitrohydrochloric acid												
	Nitronaphthalene	4.1	UN2538	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	4-Nitrophenylhydrazine, *with not less than 30% water, by mass*	4.1	UN3376	I	4.1	164, A8, A19, A20, N41	None	211	None	Forbidden	15 kg	E	36
+	Nitrophenols (*o-; m-; p-;*)	6.1	UN1663	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	m-Nitrophenyldinitro methane	Forbidden											
	Nitropropanes	3	UN2608	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	p-Nitrosodimethylaniline	4.2	UN1369	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	D	34
	Nitrostarch, *dry or wetted with less than 20 percent water, by mass*	1.1D	UN0146	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitrostarch, wetted *with not less than 20 percent water, by mass*	4.1	UN1337	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	D	28
	Nitrosugars (dry)	Forbidden											
	Nitrosyl chloride	2.3	UN1069		2.3, 8	3, B14	None	304	314, 315.	Forbidden	Forbidden	D	40
	Nitrosylsulfuric acid, liquid	8	UN2308	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	D	40, 66, 74, 89, 90

	Nitrosylsulphuric acid, solid	8	UN3456	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40, 66, 74, 89, 90
	Nitrotoluenes, liquid	6.1	UN1664	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Nitrotoluenes, solid	6.1	UN3446	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitrotoluidines (mono)	6.1	UN2660	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrotriazolone *or* NTO	1.1D	UN0490	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitrous oxide and carbon dioxide mixtures, see Carbon dioxide and nitrous oxide mixtures												
	Nitrous oxide	2.2	UN1070		2.2, 5.1.	A14	306	304	314, 315.	75 kg	150 kg	A	40
	Nitrous oxide, refrigerated liquid	2.2	UN2201		2.2, 5.1.	B6, T75, TP5, TP22	None	304	314, 315.	Forbidden	Forbidden	B	40
	Nitroxylenes, liquid	6.1	UN1665	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Nitroxylenes, solid	6.1	UN3447	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitroxylol, see Nitroxylenes												
	Nonanes	3	UN1920	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Non-flammable gas, n.o.s., see Compressed gas, *etc. or* Liquefied gas, *etc*												
	Nonliquefied gases, see Compressed gases, *etc*												
	Nonliquefied hydrocarbon gas, see Hydrocarbon gas mixture, compressed, n.o.s.												
	Nonyltrichlorosilane	8	UN1799	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Nordhausen acid, see Sulfuric acid, fuming *etc*												
	2,5-Norbornadiene, stabilized, *see* Bicyclo *2,2,1* hepta-2,5-diene, stabilized												
	Octadecyltrichlorosilane	8	UN1800	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Octadiene	3	UN2309	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	1,7-Octadine-3,5-diyne-1,8-dimethoxy-9-octadecynoic acid	Forbidden											
	Octafluorobut-2-ene *or* Refrigerant gas R 1318	2.2	UN2422		2.2		None	304	314, 315.	75 kg	150 kg	A	
	Octafluorocyclobutane, *or* Refrigerant gas RC 318	2.2	UN1976		2.2	T50	None	304	314, 315.	75 kg	150 kg	A	
	Octafluoropropane*or* Refrigerant gas R 218	2.2	UN2424		2.2	T50	None	304	314, 315.	75 kg	150 kg	A	
	Octanes	3	UN1262	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Octogen, *etc. see* Cyclotetramethylene tetranitramine, *etc.*												
	Octolite *or* Octol, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0266	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Octonal	1.1D	UN0496		1.1D		None	62	None	Forbidden	Forbidden	10	
	Octyl aldehydes	3	UN1191	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Octyltrichlorosilane	8	UN1801	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Oil gas, compressed	2.3	UN1071		2.3, 2.1.	6	None	304	314, 315.	Forbidden	25 kg	D	40
	Oleum, see Sulfuric acid, fuming												
	Organic peroxide type A, liquid or solid	Forbidden											
G	Organic peroxide type B, liquid	5.2	UN3101	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
G	Organic peroxide type B, liquid, temperature controlled	5.2	UN3111	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type B, solid	5.2	UN3102	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
G	Organic peroxide type B, solid, temperature controlled	5.2	UN3112	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type C, liquid	5.2	UN3103	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type C, liquid, temperature controlled	5.2	UN3113	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type C, solid	5.2	UN3104	II	5.2		152	225	None	5 kg	10 kg	D	12, 40, 52, 53
G	Organic peroxide type C, solid, temperature controlled	5.2	UN3114	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type D, liquid	5.2	UN3105	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type D, liquid, temperature controlled	5.2	UN3115	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type D, solid	5.2	UN3106	II	5.2		152	225	None	5 kg	10 kg	D	12, 40, 52, 53
G	Organic peroxide type D, solid, temperature controlled	5.2	UN3116	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type E, liquid	5.2	UN3107	II	5.2		152	225	None	10 L	25 L	D	12, 40, 52, 53

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Organic peroxide type E, liquid, temperature controlled	5.2	UN3117	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type E, solid	5.2	UN3108	II	5.2		152	225	None	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type E, solid, temperature controlled	5.2	UN3118	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type F, liquid	5.2	UN3109	II	5.2	IP5	152	225	225	10 L	25 L	D	12, 40, 52, 53
G	Organic peroxide type F, liquid, temperature controlled	5.2	UN3119	II	5.2	IP5	None	225	225	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type F, solid	5.2	UN3110	II	5.2	TP33	152	225	225	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type F, solid, temperature controlled	5.2	UN3120	II	5.2	TP33	None	225	225	Forbidden	Forbidden	D	2, 52, 53
D	Organic phosphate, mixed with compressed gas *or* Organic phosphate compound, mixed with compressed gas *or* Organic phosphorus compound, mixed with compressed gas.	2.3	NA1955		2.3	3	None	334	None	Forbidden	Forbidden	D	40
	Organic pigments, self-heating	4.2	UN3313	II	4.2	IB8, IP2, IP4, T3, TP33	None	212	241	15 kg	50 kg	C	
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Organoarsenic compound, liquid, n.o.s.	6.1	UN3280	I	6.1	5, T14, TP2, TP13, TP27	None	211	242	5 kg	50 kg	B	
				II	6.1	IB2, T11, TP2, TP27	153	212	242	25 kg	100 kg	B	
				III	6.1	IB3, T7, TP1, TP28	153	213	240	100 kg	200 kg	A	
G	Organoarsenic compound, solid, n.o.s.	6.1	UN3465	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Organochlorine pesticides liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2762	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Organochlorine pesticides, liquid, toxic	6.1	UN2996	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Organochlorine pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN2995	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Organochlorine pesticides, solid, toxic	6.1	UN2761	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
G	Organometallic compound, toxic, liquid, n.o.s.	6.1	UN3282	I	6.1	T14, TP2, TP13, TP27	None	211	242	5 kg	50 kg	B	
				II	6.1	IB2, T11, TP2, TP27	153	212	242	25 kg	100 kg	B	
				III	6.1	IB3, T7, TP1, TP28	153	213	240	100 kg	200 kg	A	
G	Organometallic compound, toxic, solid, n.o.s.	6.1	UN3467	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	

	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
G	Organometallic substance, liquid, pyrophoric	4.2	UN3392	I	4.2	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	143
G	Organometallic substance, liquid, pyrophoric, water-reactive	4.2	UN3394	I	4.2, 4.3.	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	.....
G	Organometallic substance, liquid, water-reactive	4.3	UN3398	I	4.3	T13, TP2, TP7	None	201	244	Forbidden	Forbidden	E	40, 52
	.....	.....		II	4.3	IB1, T7, TP2, TP7	None	202	243	1 L	5 L	E	40, 52
	.....	.....		III	4.3	IB2, T7, TP2, TP7	None	203	242	5 L	60 L	E	40, 52
G	Organometallic substance, liquid, water-reactive, flammable	4.3	UN3399	I	4.3, 3	T13, TP2, TP7	None	201	244	Forbidden	Fobidden	E	40, 52
	.....	.....		II	4.3, 3	IB1, T7, TP2, TP7	None	202	243	Forbidden	Forbidden	E	40, 52
	.....	.....		III	4.3, 3	IB2, T7, TP2, TP7	None	203	242	Forbidden	Forbidden	E	40, 52
G	Organometallic substance, solid, pyrophoric	4.2	UN3391	I	4.2	T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	.....
G	Organometallic substance, solid, pyrophoric, water-reactive	4.2	UN3393	I	4.2, 4.3.	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	52
G	Organometallic substance, solid, self-heating	4.2	UN3400	II	4.2	IB6, T3, TP33	None	212	242	15 kg	50 kg	C	.....
	.....	.....		III	4.2	IB8, T1, TP33	None	203	242	25 kg	100 kg	C	.....
G	Organometallic substance, solid, water-reactive	4.3	UN3395	I	4.3	N40, T9, TP7, TP33	None	211	242	Forbidden	Forbidden	E	40, 52
	.....	.....		II	4.3	IB4, T3, TP33	151	212	242	15 kg	50 kg	E	40, 52
	.....	.....		III	4.3	IB6, T1, TP33	151	213	241	25 kg	100 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, flammable	4.3	UN3396	I	4.3, 4.1.	N40, T9, TP7, TP33	None	211	242	Forbidden	Forbidden	E	40, 52
	.....	.....		II	4.3, 4.1.	IB4, T3, TP33	151	212	242	15 kg	50 kg	E	40, 52
	.....	.....		III	4.3, 4.1.	IB6, T1, TP33	151	213	241	25 kg	100 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating	4.3	UN3397	I	4.3, 4.2.	N40, T9, TP7, TP33	None	211	242	Forbidden	Forbidden	E	40, 52
	.....	.....		II	4.3, 4.2.	IB4, T3, TP33	None	212	242	15 kg	50 kg	E	40, 52
	.....	.....		III	4.3, 4.2.	IB6, T1, TP33	None	213	241	25 kg	100 kg	E	40, 52
	Organophosphorus compound, toxic, flammable, n.o.s.	6.1	UN3279	I	6.1, 3	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
G	Organophosphorus compound, toxic, liquid, n.o.s.	6.1	UN3278	I	6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	.....
	.....	.....		II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	.....
	.....	.....		III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	.....
G	Organophosphorus compound, toxic, solid, n.o.s.	6.1	UN3464	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	.....
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	.....
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Organophosphorus pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2784	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
	.....	.....		II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Organophosphorus pesticides, liquid, toxic	6.1	UN3018	I	6.1	N76, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1	IB2, N76, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1	IB3, N76, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Organophosphorus pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C* ..	6.1	UN3017	I	6.1, 3	N76, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, N76, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1, 3	B1, IB3, N76, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Organophosphorus pesticides, solid, toxic	6.1	UN2783	I	6.1	IB7, IP1, N77, T6, TP33	None	211	242	5 kg	50 kg	A	40
	.....	.....		II	6.1	IB8, IP2, IP4, N77, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, N77, T1, TP33	153	213	240	100 kg	200 kg	A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Organotin compounds, liquid, n.o.s.	6.1	UN2788	I	6.1	A3, N33, N34, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	A3, IB2, N33, N34, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Organotin compounds, solid, n.o.s.	6.1	UN3146	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Organotin pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2787	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Organotin pesticides, liquid, toxic	6.1	UN3020	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Organotin pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3019	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Organotin pesticides, solid, toxic	6.1	UN2786	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Orthonitroaniline, see Nitroanilines *etc*												
	Osmium tetroxide	6.1	UN2471	I	6.1	A8, IB7, IP1, N33, N34, T6, TP33	None	211	242	5 kg	50 kg	B	40
D G	Other regulated substances, liquid, n.o.s.	9	NA3082	III	9	IB3, T2, TP1	155	203	241	No limit	No limit	A	
D G	Other regulated substances, solid, n.o.s.	9	NA3077	III	9	B54, IB8, IP2, T1, TP33	155	213	240	No limit	No limit	A	
G	Oxidizing liquid, corrosive, n.o.s.	5.1	UN3098	I	5.1, 8	A6	None	201	244	Forbidden	2.5 L	D	13, 56, 58, 106, 138
				II	5.1, 8	IB1	None	202	243	1 L	5 L	B	34, 56, 58, 106, 138
				III	5.1, 8	IB2	152	203	242	2.5 L	30 L	B	34, 56, 58, 106, 138
G	Oxidizing liquid, n.o.s.	5.1	UN3139	I	5.1	127, A2, A6	None	201	243	Forbidden	2.5 L	D	56, 58, 106, 138
				II	5.1	127, A2, IB2	152	202	242	1 L	5 L	B	56, 58, 106, 138
				III	5.1	127, A2, IB2	152	203	241	2.5 L	30 L	B	56, 58, 106, 138

G	Oxidizing liquid, toxic, n.o.s.	5.1	UN3099	I	5.1, 6.1.	A6	None	201	244	Forbidden	2.5 L	D	56, 58, 106, 138
				II	5.1, 6.1.	IB1	152	202	243	1 L	5 L	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	IB2	152	203	242	2.5 L	30 L	B	56, 58, 95, 106, 138
G	Oxidizing solid, corrosive, n.o.s.	5.1	UN3085	I	5.1, 8		None	211	242	1 kg	15 kg	D	13, 56, 58, 106, 138
				II	5.1, 8	IB6, IP2, T3, TP33	None	212	242	5 kg	25 kg	B	13, 34, 56, 58, 106, 138
				III	5.1, 8	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	13, 34, 56, 58, 106, 138
G	Oxidizing solid, flammable, n.o.s.	5.1	UN3137	I	5.1, 4.1.		None	214	214	Forbidden	Forbidden		
G	Oxidizing solid, n.o.s.	5.1	UN1479	I	5.1	IB5, IP1	None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	B	56, 58, 106, 138
				III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 106, 138
G	Oxidizing solid, self-heating, n.o.s.	5.1	UN3100	I	5.1, 4.2.		None	214	214	Forbidden	Forbidden		
				II	5.1, 4.2.		None	214	214	Forbidden	Forbidden		
G	Oxidizing solid, toxic, n.o.s.	5.1	UN3087	I	5.1, 6.1.		None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 95, 106, 138
G	Oxidizing solid, water-reactive, n.o.s.	5.1	UN3121		5.1, 4.3.		None	214	214	Forbidden	Forbidden		
	Oxygen and carbon dioxide mixtures, see Carbon dioxide and oxygen mixtures												
	Oxygen, compressed	2.2	UN1072		2.2, 5.1.	A14, A52	306	302	314, 315.	75 kg	150 kg	A	
	Oxygen difluoride, compressed	2.3	UN2190		2.3, 5.1, 8.	1	None	304	None	Forbidden	Forbidden	D	13, 40, 89, 90
	Oxygen generator, chemical *(including when contained in associated equipment, e.g., passenger service units (PSUs), portable breathing equipment (PBE), etc)*..	5.1	UN3356	II	5.1	60, A51	None	212	None	Forbidden	25 kg gross	D	56, 58, 69, 106
+	Oxygen generator, chemical, spent	9	NA3356	III	9	61	None	213	None	Forbidden	Forbidden	A	
	Oxygen, mixtures with rare gases, see Rare gases and oxygen mixtures												
	Oxygen, refrigerated liquid *(cryogenic liquid)*	2.2	UN1073		2.2, 5.1.	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	
	Paint *including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.*	3	UN1263	I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	
	Paint *or* Paint related material	8	UN3066	II	8	B2, IB2, T7, TP2	154	173	242	1 L	30 L	A	
				III	8	B52, IB3, T4, TP1	154	173	241	5 L	60 L	A	
	Paint related material *including paint thinning, drying, removing, or reducing compound*	3	UN1263	I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	.....
	Paper, unsaturated oil treated *incompletely dried (including carbon paper)*	4.2	UN1379	III	4.2	IB8, IP3	None	213	241	Forbidden	Forbidden	A	.....
	Paraformaldehyde	4.1	UN2213	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	.....
	Paraldehyde	3	UN1264	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Paranitroaniline, solid, see Nitroanilines *etc*	.....			.....		.....	.....	.....	.....	.....		.....
D	Parathion and compressed gas mixture	2.3	NA1967	.....	2.3	3	None	334	245	Forbidden	Forbidden	E	40
	Paris green, solid, see Copper acetoarsenite	.....			.....		.....	.....	.....	.....	.....		.....
A W	PCB, *see* Polychlorinated biphenyls	.....			.....		.....	.....	.....	.....	.....		.....
+	Pentaborane	4.2	UN1380	I	4.2, 6.1.	1	None	205	245	Forbidden	Forbidden	D	.....
	Pentachloroethane	6.1	UN1669	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Pentachlorophenol	6.1	UN3155	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Pentaerythrite tetranitrate (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Pentaerythrite tetranitrate mixture, desensitized, solid, n.o.s. *with more than 10 percent but not more than 20 percent PETN, by mass.*	4.1	UN3344	II	4.1	118, N85	None	214	None	Forbidden	Forbidden	E	.....
	Pentaerythrite tetranitrate *or* Pentaerythritol tetranitrate *or* PETN, *with not less than 7 percent wax by mass.*	1.1D	UN0411	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	.....
	Pentaerythrite tetranitrate, wetted *or* Pentaerythritol tetranitrate, wetted, *or* PETN, wetted *with not less than 25 percent water, by mass, or* Pentaerythrite tetranitrate, *or* Pentaerythritol tetranitrate *or* PETN, desensitized *with not less than 15 percent phlegmatizer by mass.*	1.1D	UN0150	II	1.1D ..	121	None	62	None	Forbidden	Forbidden	10	.....
	Pentaerythritol tetranitrate, *see* Pentaerythrite tetranitrate, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Pentafluoroethane *or* Refrigerant gas R 125	2.2	UN3220	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Pentamethylheptane	3	UN2286	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Pentane-2,4-dione	3	UN2310	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	.....
	Pentanes	3	UN1265	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	.....	.....		II	3	IB2, IP8, T4, TP1	150	202	242	5 L	60 L	E	.....
	Pentanitroaniline (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Pentanols	3	UN1105	II	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, B3, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	1-Pentene *(n-amylene)*	3	UN1108	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	1-Pentol	8	UN2705	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	26, 27
	Pentolite, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0151	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	.....
	Pepper spray, see Aerosols, *etc. or* Self-defense spray, non-pressurized	.....			.....		.....	.....	.....	.....	.....		.....
	Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3211	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
	.....	.....		III	5.1	IB2, T4, TP1	152	202	241	2.5 L	30 L	B	56, 58, 69, 133
	Perchlorates, inorganic, n.o.s.	5.1	UN1481	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	.....	.....		III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Perchloric acid, with more than 72 percent acid by mass	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Perchloric acid *with more than 50 percent but not more than 72 percent acid, by mass*	5.1	UN1873	I	5.1, 8	A2, A3, N41, T10, TP1, TP12	None	201	243	Forbidden	2.5 L	D	66
	Perchloric acid *with not more than 50 percent acid by mass*	8	UN1802	II	8, 5.1	IB2, N41, T7, TP2	None	202	243	Forbidden	30 L	C	66
	Perchloroethylene, see Tetrachloroethylene	.....			.....		.....	.....	.....	.....	.....		.....
	Perchloromethyl mercaptan	6.1	UN1670	I	6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Perchloryl fluoride	2.3	UN3083	.....	2.3, 5.1.	2, B9, B14	None	302	314, 315.	Forbidden	Forbidden	D	40
	Percussion caps, see Primers, cap type	.....			.....		.....	.....	.....	.....	.....		.....
	Perfluoro-2-butene, see Octafluorobut-2-ene	.....			.....		.....	.....	.....	.....	.....		.....
	Perfluoro(ethyl vinyl ether)	2.1	UN3154	.....	2.1		306	302, 304, 305.	314, 315.	Forbidden	150 kg	E	40

	Perfluoro(methyl vinyl ether)	2.1	UN3153		2.1	T50	306	302, 304, 305.	314, 315.	Forbidden	150 kg	E	40
	Perfumery products *with flammable solvents*	3	UN1266	II	3	149, IB2, T4, TP1, TP8	150	202	242	15 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Permanganates, inorganic, aqueous solution, n.o.s.	5.1	UN3214	II	5.1	26, IB2, T4, TP1	152	202	242	1 L	5 L	D	56, 58, 133, 138
	Permanganates, inorganic, n.o.s.	5.1	UN1482	II	5.1	26, A30, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
				III	5.1	26, A30, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	D	56, 58, 138
	Peroxides, inorganic, n.o.s.	5.1	UN1483	II	5.1	A7, A20, IB6, IP2, N34, T3, TP33	None	212	242	5 kg	25 kg	A	13, 52, 66, 75
				III	5.1	A7, A20, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg	A	13, 52, 66, 75
	Peroxyacetic acid, with more than 43 percent and with more than 6 percent hydrogen peroxide	Forbidden											
	Persulfates, inorganic, aqueous solution, n.o.s.	5.1	UN3216	III	5.1	IB2, T4, TP1, TP29	152	203	241	2.5 L	30 L	A	56, 133
	Persulfates, inorganic, n.o.s.	5.1	UN3215	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
G	Pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN3021	I	3, 6.1	B5, T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	
G	Pesticides, liquid, toxic, flammable, n.o.s. *flash point not less than 23 degrees C*	6.1	UN2903	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2	153	203	242	60 L	220 L	A	40
G	Pesticides, liquid, toxic, n.o.s.	6.1	UN2902	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
G	Pesticides, solid, toxic, n.o.s.	6.1	UN2588	I	6.1	IB7, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	PETN, *see* Pentaerythrite tetranitrate												
	PETN/TNT, *see* Pentolite, *etc*												
	Petrol, *see* Gasoline												
	Petroleum crude oil	3	UN1267	I	3	144, T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	144, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Petroleum distillates, n.o.s. *or* Petroleum products, n.o.s.	3	UN1268	I	3	144, T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	144, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Petroleum gases, liquefied *or* Liquefied petroleum gas	2.1	UN1075		2.1	T50	306	304	314, 315.	Forbidden	150 kg	E	40
D	Petroleum oil	3	NA1270	I	3	144, T11, TP1	None	201	243	1 L	30 L	E	
				II	3	144, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Phenacyl bromide	6.1	UN2645	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
+	Phenetidines	6.1	UN2311	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Phenol, molten	6.1	UN2312	II	6.1	B14, T7, TP3	None	202	243	Forbidden	Forbidden	B	40
+	Phenol, solid	6.1	UN1671	II	6.1	IB8, IP2, IP4, N78, T3, TP33	153	212	242	25 kg	100 kg	A	
	Phenol solutions	6.1	UN2821	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Phenolsulfonic acid, liquid	8	UN1803	II	8	B2, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	14
	Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic *flash point less than 23 degrees C.*	3	UN3346	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, *flash point not less than 23 degrees C.*	6.1	UN3347	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Phenoxyacetic acid derivative pesticide, solid, toxic	6.1	UN3345	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Phenyl chloroformate	6.1	UN2746	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	Phenyl isocyanate	6.1	UN2487	I	6.1, 3	2, B9, B14, B32, B74, B77, N33, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Phenyl mercaptan	6.1	UN2337	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
	Phenyl phosphorus dichloride	8	UN2798	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
	Phenyl phosphorus thiodichloride	8	UN2799	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
	Phenylacetonitrile, liquid	6.1	UN2470	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
	Phenylacetyl chloride	8	UN2577	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
	Phenylcarbylamine chloride	6.1	UN1672	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	m-Phenylene diaminediperchlorate (dry)	Forbidden											
+	Phenylenediamines *(o-; m-; p-;)*	6.1	UN1673	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Phenylhydrazine	6.1	UN2572	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Phenylmercuric acetate	6.1	UN1674	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Phenylmercuric compounds, n.o.s.	6.1	UN2026	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Phenylmercuric hydroxide	6.1	UN1894	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Phenylmercuric nitrate	6.1	UN1895	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Phenyltrichlorosilane	8	UN1804	II	8	A7, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
	Phosgene	2.3	UN1076		2.3, 8	1, B7, B46	None	192	314	Forbidden	Forbidden	D	40

9-Phosphabicyclononanes *or* Cyclooctadiene phosphines	4.2	UN2940	II	4.2	A19, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	
Phosphine	2.3	UN2199		2.3, 2.1.	1	None	192	245	Forbidden	Forbidden	D	40
Phosphoric acid solution	8	UN1805	III	8	A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
Phosphoric acid, solid	8	UN3453	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Phosphoric acid triethyleneimine, see Tris-(1-aziridiyl)phosphine oxide, solution												
Phosphoric anhydride, see Phosphorus pentoxide												
Phosphorous acid	8	UN2834	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	48
Phosphorus, amorphous	4.1	UN1338	III	4.1	A1, A19, B1, B9, B26, IB8, IP3, T1, TP33	None	213	243	25 kg	100 kg	A	74
Phosphorus bromide, see Phosphorus tribromide												
Phosphorus chloride, see Phosphorus trichloride												
Phosphorus heptasulfide, *free from yellow or white phosphorus*	4.1	UN1339	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus oxybromide	8	UN1939	II	8	B8, IB8, IP2, IP4, N41, N43, T3, TP33	None	212	240	Forbidden	50 kg	C	12, 40
Phosphorus oxybromide, molten	8	UN2576	II	8	B2, B8, IB1, N41, N43, T7, TP3, TP13	None	202	242	Forbidden	Forbidden	C	40
+ Phosphorus oxychloride	8	UN1810	II	8, 6.1	2, B9, B14, B32, B74, B77, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Phosphorus pentabromide	8	UN2691	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	Forbidden	50 kg	B	12, 40, 53, 55
Phosphorus pentachloride	8	UN1806	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	None	212	240	Forbidden	50 kg	C	40, 44, 89, 100, 141
Phosphorus	2.3	UN2198		2.3, 8	2, B9, B14	None	302, 304.	314, 315.	Forbidden	Forbidden	D	40
Phosphorus pentasulfide, *free from yellow or white phosphorus*	4.3	UN1340	II	4.3, 4.1.	A20, B59, IB4, T3, TP33	151	212	242	15 kg	50 kg	B	74
Phosphorus pentoxide	8	UN1807	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
Phosphorus sesquisulfide, *free from yellow or white phosphorus*	4.1	UN1341	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus tribromide	8	UN1808	II	8	A3, A6, A7, B2, B25, IB2, N34, N43, T7, TP2	None	202	242	Forbidden	30 L	C	40
Phosphorus trichloride	6.1	UN1809	I	6.1, 8	2, B9, B14, B15, B32, B74, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Phosphorus trioxide	8	UN2578	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
Phosphorus trisulfide, *free from yellow or white phosphorus*	4.1	UN1343	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus, white dry *or* Phosphorus, white, under water *or* Phosphorus white, in solution *or* Phosphorus, yellow dry *or* Phosphorus, yellow, under water *or* Phosphorus, yellow, in solution.	4.2	UN1381	I	4.2, 6.1.	B9, B26, N34, T9, TP3, TP31	None	188	243	Forbidden	Forbidden	E	
Phosphorus white, molten	4.2	UN2447	I	4.2, 6.1.	B9, B26, N34, T21, TP3, TP7, TP26	None	188	243	Forbidden	Forbidden	D	
Phosphorus (white or red) and a chlorate, mixtures of	Forbidden											
Phosphoryl chloride, see Phosphorus oxychloride												
Phthalic anhydride *with more than .05 percent maleic anhydride*	8	UN2214	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Picolines	3	UN2313	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	40
Picric acid, *see* Trinitrophenol, *etc*												
Picrite, *see* Nitroguanidine, *etc*												
Picryl chloride, *see* Trinitrochlorobenzene												
Pine oil	3	UN1272	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
alpha-Pinene	3	UN2368	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Piperazine	8	UN2579	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12, 52
Piperidine	8	UN2401	I	8, 3	A10, T10, TP2	None	201	243	0.5 L	2.5 L	B	52
Pivaloyl chloride, see Trimethylacetyl chloride												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Plastic molding compound *in dough, sheet or extruded rope form evolving flammable vapor*	9	UN3314	III	9	32, IB8, IP3, IP7	155	221	221	100 kg	200 kg	A	85, 87
	Plastic solvent, n.o.s., see Flammable liquids, n.o.s.												
	Plastics, nitrocellulose-based, self-heating, n.o.s.	4.2	UN2006	III	4.2		None	213	None	Forbidden	Forbidden	C	
	Poisonous gases, n.o.s., see Compressed *or* liquefied gases, flammable *or* toxic, n.o.s.												
	Polyalkylamines, n.o.s., see Amines, *etc*												
	Polychlorinated biphenyls, liquid	9	UN2315	II	9	9, 81, 140, IB3, T4, TP1	155	202	241	100 L	220 L	A	95
	Polychlorinated biphenyls, solid	9	UN3432	II	9	9, 81, 140, IB8, T3, TP33	155	212	240	100 kg	200 kg	A	95
	Polyester resin kit	3	UN3269		3	40, 149	152	225	None	5 kg	5 kg	B	
	Polyhalogenated biphenyls, liquid *or* Polyhalogenated terphenyls liquid	9	UN3151	II	9	IB2	155	204	241	100 L	220 L	A	95
	Polyhalogenated biphenyls, solid *or* Polyhalogenated terphenyls, solid	9	UN3152	II	9	IB8, IP2, IP4, T3, TP33	155	204	241	100 kg	200 kg	A	95
	Polymeric beads, expandable, *evolving flammable vapor*	9	UN2211	III	9	32, IB8, IP3, IP7, T1, TP33	155	221	221	100 kg	200 kg	A	85, 87
	Potassium	4.3	UN2257	I	4.3	A7, A19, A20, B27, IB4, IP1, N6, N34, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
	Potassium arsenate	6.1	UN1677	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium arsenite	6.1	UN1678	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
	Potassium borohydride	4.3	UN1870	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
	Potassium bromate	5.1	UN1484	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium carbonyl	Forbidden											
	Potassium chlorate	5.1	UN1485	II	5.1	A9, IB8, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium chlorate, aqueous solution	5.1	UN2427	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133
				III	5.1	A2, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 69, 133
	Potassium chlorate mixed with mineral oil, see Explosive, blasting, type C												
	Potassium cuprocyanide	6.1	UN1679	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Potassium cyanide, solid	6.1	UN1680	I	6.1	B69, B77, IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52
	Potassium cyanide solution	6.1	UN3413	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52
				II	6.1	B69, B77, IB2, N74, N75, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	52
				III	6.1	B69, B77, IB3, N74, N75, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	52
	Potassium dichloro isocyanurate or Potassium dichloro-s-triazinetrione, see Dichloroisocyanuric acid, dry *or* Dichloroisocyanuric acid salts *etc.*												
	Potassium dithionite *or* Potassium hydrosulfite	4.2	UN1929	II	4.2	A8, A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
	Potassium fluoride, solid	6.1	UN1812	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Potassium fluoride solution	6.1	UN3422	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
	Potassium fluoroacetate	6.1	UN2628	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	E	
	Potassium fluorosilicate	6.1	UN2655	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Potassium hydrate, see Potassium hydroxide, solid												
	Potassium hydrogen fluoride, see Potassium hydrogen difluoride												
	Potassium hydrogen fluoride solution, see Corrosive liquid, n.o.s.												

Potassium hydrogen sulfate	8	UN2509	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
Potassium hydrogendifluoride solid	8	UN1811	II	8, 6.1	IB8, IP2, IP4, N3, N34, T3, TP33	154	212	240	15 kg	50 kg	A	25, 40, 52
Potassium hydrogendifluoride solution	8	UN3421	II	8, 6.1	IB2, N3, N34, T7, TP2	154	202	243	1 L	30 L	A	25, 40, 52
			III	8, 6.1	IB3, N3, N34, T4, TP1	154	203	241	5 L	60 L	A	40, 52
Potassium hydrosulfite, *see* Potassium dithionite												
Potassium hydroxide, liquid, see Potassium hydroxide solution												
Potassium hydroxide, solid	8	UN1813	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
Potassium hydroxide, solution	8	UN1814	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
Potassium hypochlorite, solution, see Hypochlorite solutions, *etc*												
Potassium, metal alloys, liquid	4.3	UN1420	I	4.3	A7, A19, A20, B27	None	201	244	Forbidden	1 L	E	40, 52
Potassium, metal alloys, solid	4.3	UN3403	I	4.3	A19, A20, B27, IB4, IP1, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	
Potassium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s.												
Potassium metavanadate	6.1	UN2864	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Potassium monoxide	8	UN2033	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29
Potassium nitrate	5.1	UN1486	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Potassium nitrate and sodium nitrite mixtures	5.1	UN1487	II	5.1	B78, IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
Potassium nitrite	5.1	UN1488	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Potassium perchlorate	5.1	UN1489	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Potassium permanganate	5.1	UN1490	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	56, 58, 138
Potassium peroxide	5.1	UN1491	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Potassium persulfate	5.1	UN1492	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
Potassium phosphide	4.3	UN2012	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Potassium selenate, see Selenates *or* Selenites												
Potassium selenite, see Selenates *or* Selenites												
Potassium sodium alloys, solid	4.3	UN3404	I	4.3	A19, B27, N34, N40, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
Potassium sodium alloys, liquid	4.3	UN1422	I	4.3	A7, A19, B27, N34, N40, T9, TP3, TP7, TP31	None	201	244	Forbidden	1 L	E	40, 52
Potassium sulfide, anhydrous *or* Potassium sulfide *with less than 30 percent water of crystallization.*	4.2	UN1382	II	4.2	A19, A20, B16, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
Potassium sulfide, hydrated *with not less than 30 percent water of crystallization*	8	UN1847	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
Potassium superoxide	5.1	UN2466	I	5.1	A20, IB6, IP1	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Powder cake, wetted *or* Powder paste, wetted *with not less than 17 percent alcohol by mass*	1.1C	UN0433	II	1.1C		None	62	None	Forbidden	Forbidden	10	
Powder cake, wetted *or* Powder paste, wetted *with not less than 25 percent water, by mass*	1.3C	UN0159	II	1.3C		None	62	None	Forbidden	Forbidden	10	
Powder paste, *see* Powder cake, *etc*												
Powder, smokeless	1.1C	UN0160	II	1.1C		None	62	None	Forbidden	Forbidden		26E
Powder, smokeless	1.3C	UN0161	II	1.3C		None	62	None	Forbidden	Forbidden		26E
Power device, explosive, see Cartridges, power device												
Primers, cap type	1.4S	UN0044	II	None		None	62	None	25 kg	100 kg	05	
Primers, cap type	1.1B	UN0377	II	1.1B		None	62	None	Forbidden	Forbidden	11	
Primers, cap type	1.4B	UN0378	II	1.4B		None	62	None	Forbidden	75 kg	06	
Primers, small arms, see Primers, cap type												
Primers, tubular	1.3G	UN0319	II	1.3G		None	62	None	Forbidden	Forbidden	07	
Primers, tubular	1.4G	UN0320	II	1.4G		None	62	None	Forbidden	75 kg	06	
Primers, tubular	1.4S	UN0376	II	None		None	62	None	25 kg	100 kg	05	
Printing ink, *flammable or* Printing ink related material *(including printing ink thinning or reducing compound), flammable.*	3	UN1210	I	3	T11, TP1, TP8	150	173	243	1 L	30 L	E	
			II	3	149, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
			III	3	B1, IB3, T2, TP1	150	173	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Projectiles, illuminating, see Ammunition, illuminating, *etc*												
	Projectiles, *inert with tracer*	1.4S	UN0345	II	1.4S			62	None	25 kg	100 kg	01	
	Projectiles, *inert, with tracer*	1.3G	UN0424	II	1.3G			62	None	Forbidden	Forbidden	03	
	Projectiles, *inert, with tracer*	1.4G	UN0425	II	1.4G			62	None	Forbidden	75 kg	02	
	Projectiles, *with burster or expelling charge*	1.2D	UN0346	II	1.2D			62	None	Forbidden	Forbidden	03	
	Projectiles, *with burster or expelling charge*	1.4D	UN0347	II	1.4D			62	None	Forbidden	75 kg	02	
	Projectiles, *with burster or expelling charge*	1.2F	UN0426	II	1.2F			62	None	Forbidden	Forbidden	08	
	Projectiles, *with burster or expelling charge*	1.4F	UN0427	II	1.4F			62	None	Forbidden	Forbidden	08	
	Projectiles, *with burster or expelling charge*	1.2G	UN0434	II	1.2G			62	None	Forbidden	Forbidden	03	
	Projectiles, *with burster or expelling charge*	1.4G	UN0435	II	1.4G			62	None	Forbidden	75 kg	02	
	Projectiles, *with bursting charge*	1.1F	UN0167	II	1.1F			62	None	Forbidden	Forbidden	08	
	Projectiles, *with bursting charge*	1.1D	UN0168	II	1.1D			62	None	Forbidden	Forbidden	03	
	Projectiles, *with bursting charge*	1.2D	UN0169	II	1.2D			62	None	Forbidden	Forbidden	03	
	Projectiles, *with bursting charge*	1.2F	UN0324	II	1.2F			62	None	Forbidden	Forbidden	08	
	Projectiles, *with bursting charge*	1.4D	UN0344	II	1.4D			62	None	Forbidden	75 kg	02	
	Propadiene, stabilized	2.1	UN2200		2.1		None	304	314, 315.	Forbidden	150 kg	B	40
	Propadiene mixed with methyl acetylene, see Methyl acetylene and propadiene mixtures, stabilized.												
	Propane *see also* Petroleum gases, liquefied	2.1	UN1978		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
	Propanethiols	3	UN2402	II	3	A6, IB2, T4, TP1, TP13	150	202	242	5 L	60 L	E	95, 102
	n-Propanol *or* Propyl alcohol, normal	3	UN1274	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Propellant, liquid	1.3C	UN0495	II	1.3C	37	None	62	None	Forbidden	Forbidden	10	
	Propellant, liquid	1.1C	UN0497	II	1.1C	37	None	62	None	Forbidden	Forbidden	10	
	Propellant, solid	1.1C	UN0498	II	1.1C		None	62	None	Forbidden	Forbidden		26E
	Propellant, solid	1.3C	UN0499	II	1.3C		None	62	None	Forbidden	Forbidden		26E
	Propellant, solid	1.4C	UN0501		1.4C		None	62	None	Forbidden	Forbidden	A	24E
	Propionaldehyde	3	UN1275	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
	Propionic acid	8	UN1848	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Propionic anhydride	8	UN2496	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Propionitrile	3	UN2404	II	3, 6.1	IB2, T7, TP1, TP13	None	202	243	Forbidden	60 L	E	40
	Propionyl chloride	3	UN1815	II	3, 8	IB1, T7, TP1	150	202	243	1 L	5 L	B	40
	n-Propyl acetate	3	UN1276	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Propyl alcohol, *see* Propanol												
	n-Propyl benzene	3	UN2364	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	n-Propyl chloroformate	6.1	UN2740	I	6.1, 3, 8.	2, B9, B14, B32, B74, B77, N34, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	21, 40, 100
	Propyl chloride see 1-Chloropropane												
	Propyl formates	3	UN1281	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	n-Propyl isocyanate	6.1	UN2482	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Propyl mercaptan, see Propanethiols												
	n-Propyl nitrate	3	UN1865	II	3	IB99	150	202	None	5 L	60 L	D	44, 89, 90, 100
	Propylamine	3	UN1277	II	3, 8	A7, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40
	Propylene *see also* Petroleum gases, liquefied	2.1	UN1077		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg	E	40
	Propylene chlorohydrin	6.1	UN2611	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	12, 40, 48
	Propylene oxide	3	UN1280	I	3	A3, N34, T11, TP2, TP7	None	201	243	1 L	30 L	E	40
	Propylene tetramer	3	UN2850	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1,2-Propylenediamine	8	UN2258	II	8, 3	A3, A6, IB2, N34, T7, TP2	None	202	243	1 L	30 L	A	40
	Propyleneimine, stabilized	3	UN1921	I	3, 6.1	A3, N34, T14, TP2, TP13	None	201	243	1 L	30 L	B	40

	Propyltrichlorosilane	8	UN1816	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
	Prussic acid, see Hydrogen cyanide												
	Pyrethroid pesticide, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN3350	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Pyrethroid pesticide, liquid toxic	6.1	UN3352	I	6.1	T14, TP2, TP13, TP27	None	211	242	1 L	30 L	A	40
				II	6.1	IB2, T11, TP2, TP27	153	212	242	5 L	60 L	A	40
				III	6.1	IB3, T7, TP2, TP28	153	213	240	60 L	220 L	A	40
	Pyrethroid pesticide, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3351	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40
	Pyrethroid pesticide, solid, toxic	6.1	UN3349	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Pyridine	3	UN1282	II	3	IB2, T4, TP2	None	202	242	5 L	60 L	B	21, 100
	Pyridine perchlorate	Forbidden											
G	Pyrophoric liquid, inorganic, n.o.s.	4.2	UN3194	I	4.2		None	181	244	Forbidden	Forbidden	D	18
G	Pyrophoric liquids, organic, n.o.s.	4.2	UN2845	I	4.2	B11, T22, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
G	Pyrophoric metals, n.o.s., *or* Pyrophoric alloys, n.o.s.	4.2	UN1383	I	4.2	B11, T21, TP7, TP33	None	187	242	Forbidden	Forbidden	D	
G	Pyrophoric solid, inorganic, n.o.s.	4.2	UN3200	I	4.2	T21, TP7, TP33	None	187	242	Forbidden	Forbidden	D	
G	Pyrophoric solids, organic, n.o.s.	4.2	UN2846	I	4.2		None	187	242	Forbidden	Forbidden	D	
	Pyrosulfuryl chloride	8	UN1817	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40
	Pyroxylin solution or solvent, see Nitrocellulose												
	Pyrrolidine	3	UN1922	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Quebrachitol pentanitrate	Forbidden											
	Quicklime, see Calcium oxide												
	Quinoline	6.1	UN2656	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
	R 12, see Dichlorodifluoromethane												
	R 12B1, see Chlorodifluorobromomethane												
	R 13, see Chlorotrifluoromethane												
	R 13B1, see Bromotrifluoromethane												
	R 14, see Tetrafluoromethane												
	R 21, see Dichlorofluoromethane												
	R 22, see Chlorodifluoromethane												
	R 114, see Dichlorotetrafluoroethane												
	R 115, see Chloropentafluoroethane												
	R 116, see Hexafluoroethane												
	R 124, see Chlorotetrafluoroethane												
	R 133a, see Chlorotrifluoroethane												
	R 152a, see Difluoroethane												
	R 500, see Dichlorodifluoromethane and difluorethane, *etc*												
	R 502, see Chlorodifluoromethane and chloropentafluoroethane mixture, *etc*												
	R 503, see Chlorotrifluoromethane and trifluoromethane, *etc*												
	Radioactive material, excepted package-articles manufactured from natural uranium *or* depleted uranium *or* natural thorium.	7	UN2909		None		422, 426.	422, 426.	422, 426.			A	
	Radioactive material, excepted package-empty packaging	7	UN2908		Empty		422, 428.	422, 428.	422, 428.			A	
	Radioactive material, excepted package-instruments *or* articles	7	UN2911		None		422, 424.	422, 424.				A	
	Radioactive material, excepted package-limited quantity of material	7	UN2910		None		421, 422.	421, 422.	421, 422.			A	
	Radioactive material, low specific activity (LSA-I) *non fissile or fissile-excepted*	7	UN2912		7	A56, T5, TP4, W7	421, 422, 428.	427	427			A	95, 129
	Radioactive material, low specific activity (LSA-II) *non fissile or fissile-excepted*	7	UN3321		7	A56, T5, TP4, W7	421, 422, 428.	427	427			A	95, 129
	Radioactive material, low specific activity (LSA-III) *non fissile or fissile excepted*	7	UN3322		7	A56, T5, TP4, W7	421, 422, 428.	427	427			A	95, 129

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Radioactive material, surface contaminated objects (SCO-I *or* SCO-II) *non fissile or fissile-excepted.*	7	UN2913	.....	7	A56	421, 422, 428.	427	427	.....	.....	A	95
	Radioactive material, transported under special arrangement, *non fissile or fissile excepted*	7	UN2919	.....	7	A56, 139	.....	.....	.....	.....	.....	A	95, 105
	Radioactive material, transported under special arrangement, fissile	7	UN3331	.....	7	A56, 139	.....	.....	.....	.....	.....	A	95, 105
	Radioactive material, Type A package, fissile *non-special form*	7	UN3327	.....	7	A56, W7, W8	453	417	417	.....	.....	A	95, 105, 131
	Radioactive material, Type A package *non-special form, non fissile or fissile-excepted*	7	UN2915	.....	7	A56, W7, W8	.....	415	415	.....	.....	A	95, 130
	Radioactive material, Type A package, special form *non fissile or fissile-excepted*	7	UN3332	.....	7	A56, W7, W8	.....	415, 476.	415, 476.	.....	.....	A	95
	Radioactive material, Type A package, special form, fissile	7	UN3333	.....	7	A56, W7, W8	453	417, 476.	417, 476.	.....	.....	A	95, 105
	Radioactive material, Type B(M) package, fissile	7	UN3329	.....	7	A56	453	417	417	.....	.....	A	95, 105
	Radioactive material, Type B(M) package *non fissile or fissile-excepted*	7	UN2917	.....	7	A56	.....	416	416	.....	.....	A	95, 105
	Radioactive material, Type B(U) package, fissile	7	UN3328	.....	7	A56	453	417	417	.....	.....	A	95, 105
	Radioactive material, Type B(U) package *non fissile or fissile-excepted*	7	UN2916	.....	7	A56	.....	416	416	.....	.....	A	95, 105
	Radioactive material, uranium hexafluoride *non fissile or fissile-excepted*	7	UN2978	.....	7, 8		423	420, 427.	420, 427.	.....	.....	A	95, 132
I	Radioactive material, uranium hexafluoride, fissile	7	UN2977	.....	7, 8		453	417, 420.	417, 420.	.....	.....	A	95, 132
A W	Rags, oily	4.2	UN1856	III	4.2		151	213	240	Forbidden	Forbidden	A	.....
	Railway torpedo, see Signals, railway track, explosive	.....			.....		.....	.....	.....	.....	.....		.....
	Rare gases and nitrogen mixtures, compressed	2.2	UN1981	.....	2.2		306	302	None	75 kg	150 kg	A	.....
	Rare gases and oxygen mixtures, compressed	2.2	UN1980	.....	2.2	79	306	302	None	75 kg	150 kg	A	.....
	Rare gases mixtures, compressed	2.2	UN1979	.....	2.2		306	302	None	75 kg	150 kg	A	.....
	RC 318, see Octafluorocyclobutane	.....			.....		.....	.....	.....	.....	.....		.....
	RDX and cyclotetramethylenetetranitramine, wetted *or* desensitized *see* RDX and HMX mixtures, wetted or desensitized.	.....			.....		.....	.....	.....	.....	.....		.....
	RDX and HMX mixtures, wetted *with not less than 15 percent water by mass or* RDX and HMX mixtures, desensitized *with not less than 10 percent phlegmatizer by mass.*	1.1D	UN0391	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	.....
	RDX and Octogen mixtures, wetted *or* desensitized *see* RDX and HMX mixtures, wetted *or* desensitized *etc.*	.....			.....		.....	.....	.....	.....	.....		.....
	RDX, see Cyclotrimethylene trinitramine, *etc*	.....			.....		.....	.....	.....	.....	.....		.....
	Receptacles, small, containing gas (gas cartridges) *flammable, without release device, not refillable and not exceeding 1 L capacity.*	2.1	UN2037	.....	2.1		306	304	None	1 kg	15 kg	B	40
	Receptacles, small, containing gas (gas cartridges) *non-flammable, without release device, not refillable and not exceeding 1 L capacity.*	2.2	UN2037	.....	2.2		306	304	None	1 kg	15 kg	B	40
	.....	.....		.....	2.2, 5.1.	A14	306	304	None	1 kg	15 kg	B	40
	Red phosphorus, see Phosphorus, amorphous	.....			.....		.....	.....	.....	.....	.....		.....
	Refrigerant gas R 404A	2.2	UN3337	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Refrigerant gas R 407A	2.2	UN3338	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Refrigerant gas R 407B	2.2	UN3339	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Refrigerant gas R 407C	2.2	UN3340	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
G	Refrigerant gases, n.o.s.	2.2	UN1078	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
D	Refrigerant gases, n.o.s. *or* Dispersant gases, n.o.s.	2.1	NA1954	.....	2.1	T50	306	304	314, 315.	Forbidden	150 kg	D	40
	Refrigerating machines, *containing flammable, non-toxic, liquefied gas*	2.1	UN3358	.....	2.1		306	306	306	Forbidden	Forbidden	C	40
	Refrigerating machines, *containing non-flammable, non-toxic, or ammonia solution (UN2672)* ...	2.2	UN2857	.....	2.2	A53	306, 307.	306	306, 307.	450 kg	450 kg	A	.....
	Regulated medical waste	6.2	UN3291	II	6.2	A13	134	197	197	No limit	No limit	A	40
	Release devices, explosive	1.4S	UN0173	II	1.4S ...		None	62	None	25 kg	100 kg	05	.....
	Resin solution, *flammable*	3	UN1866	I	3	B52, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	.....
	.....	.....		II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	.....
	.....	.....		III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	.....

Resorcinol	6.1	UN2876	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Rifle grenade, see Grenades, *hand or rifle, etc*												
Rifle powder, see Powder, smokeless *(UN 0160)*												
Rivets, explosive	1.4S	UN0174	II	1.4S		None	62	None	25 kg	100 kg	05	
Road asphalt or tar liquid, see Tars, liquid, *etc*												
Rocket motors	1.3C	UN0186	II	1.3C	109	None	62	None	Forbidden	220 kg	03	
Rocket motors	1.1C	UN0280	II	1.1C	109	None	62	None	Forbidden	Forbidden	03	
Rocket motors	1.2C	UN0281	II	1.2C	109	None	62	None	Forbidden	Forbidden	03	
Rocket motors, liquid fueled	1.2J	UN0395	II	1.2J	109	None	62	None	Forbidden	Forbidden	04	23E
Rocket motors, liquid fueled	1.3J	UN0396	II	1.3J	109	None	62	None	Forbidden	Forbidden	04	23E
Rocket motors with hypergolic liquids *with or without an expelling charge*	1.3L	UN0250	II	1.3L	109	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E
Rocket motors with hypergolic liquids *with or without an expelling charge*	1.2L	UN0322	II	1.2L	109	None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E
Rockets, line-throwing	1.2G	UN0238	II	1.2G		None	62	None	Forbidden	Forbidden	07	
Rockets, line-throwing	1.3G	UN0240	II	1.3G		None	62	None	Forbidden	75 kg	07	
Rockets, line-throwing	1.4G	UN0453	II	1.4G		None	62	None	Forbidden	75 kg	06	
Rockets, liquid fueled *with bursting charge*	1.1J	UN0397	II	1.1J		None	62	None	Forbidden	Forbidden	04	23E
Rockets, liquid fueled *with bursting charge*	1.2J	UN0398	II	1.2J		None	62	None	Forbidden	Forbidden	04	23E
Rockets, *with bursting charge*	1.1F	UN0180	II	1.1F		None	62	None	Forbidden	Forbidden	08	
Rockets, *with bursting charge*	1.1E	UN0181	II	1.1E		None	62	None	Forbidden	Forbidden	03	
Rockets, *with bursting charge*	1.2E	UN0182	II	1.2E		None	62	None	Forbidden	Forbidden	03	
Rockets, *with bursting charge*	1.2F	UN0295	II	1.2F		None	62	None	Forbidden	Forbidden	08	
Rockets, *with expelling charge*	1.2C	UN0436	II	1.2C		None	62	None	Forbidden	Forbidden	03	
Rockets, *with expelling charge*	1.3C	UN0437	II	1.3C		None	62	None	Forbidden	Forbidden	03	
Rockets, *with expelling charge*	1.4C	UN0438	II	1.4C		None	62	None	Forbidden	75 kg	02	
Rockets, *with inert head*	1.3C	UN0183	II	1.3C		None	62	None	Forbidden	Forbidden	03	
Rockets, *with inert head*	1.2C	UN0502		1.2C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Rosin oil	3	UN1286	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Rubber solution	3	UN1287	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
Rubber scrap *or* shoddy, *powdered or granulated, not exceeding 840 microns and rubber contend exceeding 45%.*	4.1	UN1345	II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	
Rubber solution	3	UN1287	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Rubidium	4.3	UN1423	I	4.3	22, A7, A19, IB4, IP1, N34, N40, N45	None	211	242	Forbidden	15 kg	D	52
Rubidium hydroxide	8	UN2678	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29
Rubidium hydroxide solution	8	UN2677	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	29
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	29
Safety fuse, see Fuse, safety												
Sand acid, see Fluorosilicic acid												
Seed cake, *containing vegetable oil solvent extractions and expelled seeds, with not more than 10 percent of oil and when the amount of moisture is higher than 11 percent, with not more than 20 percent of oil and moisture combined.*	4.2	UN1386	III	None	IB8, IP3, IP7, N7	None	213	241	Forbidden	Forbidden	A	13
Seed cake *with more than 1.5 percent oil and not more than 11 percent moisture*	4.2	UN1386	III	None	IB8, IP3, IP7, N7	None	213	241	Forbidden	Forbidden	E	13
Seed cake *with not more than 1.5 percent oil and not more than 11 percent moisture*	4.2	UN2217	III	None	IB8, IP3, IP7, N7	None	213	241	Forbidden	Forbidden	A	13
Selenates *or* Selenites	6.1	UN2630	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	E	
Selenic acid	8	UN1905	I	8	IB7, IP1, N34, T6, TP33	None	211	242	Forbidden	25 kg	A	
Selenium compound, solid, n.o.s.	6.1	UN3283	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
Selenium compound, liquid, n.o.s.	6.1	UN3440	I	6.1	T14, TP2, TP27	None	201	243	1 L	30 L	B	
Selenium compound, solid, n.o.s.	6.1	UN3283	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
Selenium compound, liquid, n.o.s.	6.1	UN3440	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	
Selenium compound, solid, n.o.s.	6.1	UN3283	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Selenium compound, liquid, n.o.s.	6.1	UN3440	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
Selenium disulfide	6.1	UN2657	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Selenium hexafluoride	2.3	UN2194		2.3, 8	1	None	302	None	Forbidden	Forbidden	D	40
Selenium nitride	Forbidden											
Selenium oxychloride	8	UN2879	I	8, 6.1	A3, A6, A7, N34, T10, TP2, TP12, TP13	None	201	243	0.5 L	2.5 L	E	40
Self-defense spray, aerosol, see Aerosols, *etc*												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
+ A D	Self-defense spray, non-pressurized	9	NA3334	III	9	A37	155	203	None	No limit	No limit	A	
G	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	UN3188	II	4.2, 8	IB2	None	202	243	1 L	5 L	C	
				III	4.2, 8	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, corrosive, organic, n.o.s.	4.2	UN3185	II	4.2, 8	IB2	None	202	243	1 L	5 L	C	
				III	4.2, 8	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, inorganic, n.o.s.	4.2	UN3186	II	4.2	IB2	None	202	242	1 L	5 L	C	
				III	4.2	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, organic, n.o.s.	4.2	UN3183	II	4.2	IB2	None	202	242	1 L	5 L	C	
				III	4.2	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	UN3187	II	4.2, 6.1.	IB2	None	202	243	1 L	5 L	C	
				III	4.2, 6.1.	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, toxic, organic, n.o.s.	4.2	UN3184	II	4.2, 6.1.	IB2	None	202	243	1 L	5 L	C	
				III	4.2, 6.1.	IB2	None	203	241	5 L	60 L	C	
G	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	UN3192	II	4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
				III	4.2, 8	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-heating, solid, corrosive, organic, n.o.s.	4.2	UN3126	II	4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
				III	4.2, 8	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-heating solid, inorganic, n.o.s.	4.2	UN3190	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Self-heating, solid, organic, n.o.s.	4.2	UN3088	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Self-heating, solid, oxidizing, n.o.s.	4.2	UN3127		4.2, 5.1.		None	214	214	Forbidden	Forbidden		
G	Self-heating solid, toxic, inorganic, n.o.s.	4.2	UN3191	II	4.2, 6.1.	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
				III	4.2, 6.1.	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-heating, solid, toxic, organic, n.o.s.	4.2	UN3128	II	4.2, 6.1.	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
				III	4.2, 6.1.	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
	Self-propelled vehicle, see Engines *or* Batteries *etc*												
G	Self-reactive liquid type B	4.1	UN3221	II	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive liquid type B, temperature controlled	4.1	UN3231	II	4.1	53	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type C	4.1	UN3223	II	4.1		None	224	None	5 L	10 L	D	52, 53
G	Self-reactive liquid type C, temperature controlled	4.1	UN3233	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type D	4.1	UN3225	II	4.1		None	224	None	5 L	10 L	D	52, 53
G	Self-reactive liquid type D, temperature controlled	4.1	UN3235	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type E	4.1	UN3227	II	4.1		None	224	None	10 L	25 L	D	52, 53
G	Self-reactive liquid type E, temperature controlled	4.1	UN3237	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type F	4.1	UN3229	II	4.1	T23	None	224	None	10 L	25 L	D	52, 53
G	Self-reactive liquid type F, temperature controlled	4.1	UN3239	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type B	4.1	UN3222	II	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive solid type B, temperature controlled	4.1	UN3232	II	4.1	53	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type C	4.1	UN3224	II	4.1		None	224	None	5 kg	10 kg	D	52, 53
G	Self-reactive solid type C, temperature controlled	4.1	UN3234	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53

G	Self-reactive solid type D	4.1	UN3226	II	4.1		None	224	None	5 kg	10 kg	D	52, 53
G	Self-reactive solid type D, temperature controlled	4.1	UN3236	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type E	4.1	UN3228	II	4.1		None	224	None	10 kg	25 kg	D	52, 53
G	Self-reactive solid type E, temperature controlled	4.1	UN3238	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type F	4.1	UN3230	II	4.1		None	224	None	10 kg	25 kg	D	52, 53
G	Self-reactive solid type F, temperature controlled	4.1	UN3240	II	4.1		None	224	None	Forbidden	Forbidden	D	2, 52, 53
	Shale oil	3	UN1288	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	B	
				II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Shaped charges, see Charges, shaped, *etc*												
	Signal devices, hand	1.4G	UN0191	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Signal devices, hand	1.4S	UN0373	II	1.4S		None	62	None	25 kg	100 kg	05	
	Signals, distress, *ship*	1.1G	UN0194	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Signals, distress, *ship*	1.3G	UN0195	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Signals, highway, see Signal devices, hand												
	Signals, railway track, explosive	1.1G	UN0192	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4S	UN0193	II	1.4S		None	62	None	25 kg	100 kg	05	
	Signals, railway track, explosive	1.3G	UN0492		1.3G		None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4G	UN0493		1.4G		None	62	None	Forbidden	75 kg	06	
	Signals, ship distress, water-activated, see Contrivances, water-activated, *etc*												
	Signals, smoke	1.1G	UN0196	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	1.4G	UN0197	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Signals, smoke	1.2G	UN0313	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	1.3G	UN0487	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Silane	2.1	UN2203		2.1		None	302	None	Forbidden	Forbidden	E	40, 57, 104
	Silicofluoric acid, see Fluorosilicic acid												
	Silicon chloride, see Silicon tetrachloride												
	Silicon powder, amorphous	4.1	UN1346	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	74
	Silicon tetrachloride	8	UN1818	II	8	A3, A6, B2, B6, IB2, T7, TP2, TP7	154	202	242	1 L	30 L	C	40
	Silicon tetrafluoride	2.3	UN1859		2.3, 8	2	None	302	None	Forbidden	Forbidden	D	40
	Silver acetylide (dry)	Forbidden											
	Silver arsenite	6.1	UN1683	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Silver azide (dry)	Forbidden											
	Silver chlorite (dry)	Forbidden											
	Silver cyanide	6.1	UN1684	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40, 52
	Silver fulminate (dry)	Forbidden											
	Silver nitrate	5.1	UN1493	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Silver oxalate (dry)	Forbidden											
	Silver picrate (dry)	Forbidden											
	Silver picrate, wetted *with not less than 30 percent water, by mass*	4.1	UN1347	I	4.1	23	None	211	None	Forbidden	Forbidden	D	28, 36
	Sludge, acid	8	UN1906	II	8	A3, A7, B2, IB2, N34, T8, TP2, TP12, TP28	None	202	242	Forbidden	30 L	C	14
D	Smokeless powder for small arms (*100 pounds or less*)	4.1	NA3178	I	4.1	16	None	171	None	Forbidden	7.3 kg	A	
	Soda lime *with more than 4 percent sodium hydroxide*	8	UN1907	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Sodium	4.3	UN1428	I	4.3	A7, A8, A19, A20, B9, B48, B68, IB4, IP1, N34, T9, TP7, TP33, TP46	None	211	244	Forbidden	15 kg	D	52
	Sodium aluminate, solid	8	UN2812	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Sodium aluminate, solution	8	UN1819	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Sodium aluminum hydride	4.3	UN2835	II	4.3	A8, A19, A20, IB4, T3, TP33	151	212	242	Forbidden	50 kg	E	52
	Sodium ammonium vanadate	6.1	UN2863	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium arsanilate	6.1	UN2473	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Sodium arsenate	6.1	UN1685	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Sodium arsenite, aqueous solutions	6.1	UN1686	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T4, TP2	153	203	241	60 L	220 L	A	
	Sodium arsenite, solid	6.1	UN2027	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium azide	6.1	UN1687	II	6.1	IB8, IP2, IP4	153	212	242	25 kg	100 kg	A	36, 52, 91
	Sodium bifluoride, see Sodium hydrogendifluoride												
	Sodium bisulfite, solution, see Bisulfites, aqueous solutions, n.o.s.												
	Sodium borohydride	4.3	UN1426	I	4.3	N40	None	211	242	Forbidden	15 kg	E	52
	Sodium borohydride and sodium hydroxide solution, *with not more than 12 percent sodium borohydride and not more than 40 percent sodium hydroxide by mass.*	8	UN3320	II	8	B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	52
				III	8	B2, IB3, N34, T4, TP2	154	203	241	5 L	60 L	A	52
	Sodium bromate	5.1	UN1494	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Sodium cacodylate	6.1	UN1688	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Sodium carbonate peroxyhydrate	5.1	UN3378	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 48, 75
				III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
	Sodium chlorate	5.1	UN1495	II	5.1	A9, IB8, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Sodium chlorate, aqueous solution	5.1	UN2428	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133
				III	5.1	A2, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 69, 133
	Sodium chlorate mixed with dinitrotoluene, see Explosive blasting, type C												
	Sodium chlorite	5.1	UN1496	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	None	212	242	5 kg	25 kg	A	56, 58
	Sodium chloroacetate	6.1	UN2659	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Sodium cuprocyanide, solid	6.1	UN2316	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	52
	Sodium cuprocyanide, solution	6.1	UN2317	I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40, 52
	Sodium cyanide, solid	6.1	UN1689	I	6.1	B69, B77, IB7, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52
	Sodium cyanide solution	6.1	UN3414	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52
				II	6.1	B69, B77, IB2, N74, N75, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	52
				III	6.1	B69, B77, IB3, N74, N75, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	52
	Sodium dichloroisocyanurate or Sodium dichloro-s-triazinetrione, see Dichloroisocyanuric acid *etc.*												
	Sodium dinitro-o-cresolate, *dry or wetted with less than 15 percent water, by mass*	1.3C	UN0234	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
	Sodium dinitro-o-cresolate, wetted *with not less than 10% water, by mass*	4.1	UN3369	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Sodium dinitro-o-cresolate, wetted *with not less than 15 percent water, by mass*	4.1	UN1348	I	4.1, 6.1.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
	Sodium dithionite *or* Sodium hydrosulfite	4.2	UN1384	II	4.2	A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
	Sodium fluoride, solid	6.1	UN1690	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Sodium fluoride solution	6.1	UN3415	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
	Sodium fluoroacetate	6.1	UN2629	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	E	
	Sodium fluorosilicate	6.1	UN2674	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Sodium hydrate, see Sodium hydroxide, solid												
	Sodium hydride	4.3	UN1427	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52

	Sodium hydrogendifluoride	8	UN2439	II	8	IB8, IP2, IP4, N3, N34, T3, TP33	154	212	240	15 kg	50 kg	A	12, 25, 40, 52
	Sodium hydrosulfide, *with less than 25 percent water of crystallization*	4.2	UN2318	II	4.2	A7, A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	
	Sodium hydrosulfide *with not less than 25 percent water of crystallization*	8	UN2949	II	8	A7, IB8, IP2, IP4, T7, TP2	154	212	240	15 kg	50 kg	A	52
	Sodium hydrosulfite, *see* Sodium dithionite												
	Sodium hydroxide, solid	8	UN1823	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Sodium hydroxide solution	8	UN1824	II	8	B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
				III	8	IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
	Sodium hypochlorite, solution, see Hypochlorite solutions *etc*												
	Sodium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s.												
	Sodium methylate	4.2	UN1431	II	4.2, 8	A7, A19, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	
	Sodium methylate solutions *in alcohol*	3	UN1289	II	3, 8	IB2, T7, TP1, TP8	150	202	243	1 L	5 L	B	
				III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
	Sodium monoxide	8	UN1825	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Sodium nitrate	5.1	UN1498	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Sodium nitrate and potassium nitrate mixtures	5.1	UN1499	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Sodium nitrite	5.1	UN1500	III	5.1, 6.1.	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Sodium pentachlorophenate	6.1	UN2567	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium perborate monohydrate	5.1	UN3377	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
	Sodium perchlorate	5.1	UN1502	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Sodium permanganate	5.1	UN1503	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
	Sodium peroxide	5.1	UN1504	I	5.1	A20, IB5, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
	Sodium peroxoborate, anhydrous	5.1	UN3247	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 25
	Sodium persulfate	5.1	UN1505	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Sodium phosphide	4.3	UN1432	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Sodium picramate, *dry or wetted with less than 20 percent water, by mass*	1.3C	UN0235	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
	Sodium picramate, wetted *with not less than 20 percent water, by mass*	4.1	UN1349	I	4.1	23, A8, A19, N41	None	211	None	Forbidden	15 kg	E	28, 36
	Sodium picryl peroxide	Forbidden											
	Sodium potassium alloys, see Potassium sodium alloys												
	Sodium selenate, see Selenates *or* Selenites												
	Sodium sulfide, anhydrous *or* Sodium sulfide *with less than 30 percent water of crystallization*	4.2	UN1385	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
	Sodium sulfide, hydrated *with not less than 30 percent water*	8	UN1849	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	26
	Sodium superoxide	5.1	UN2547	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	E	13, 52, 66, 75
	Sodium tetranitride	Forbidden											
G	Solids containing corrosive liquid, n.o.s.	8	UN3244	II	8	49, IB5, T3, TP33	154	212	240	15 kg	50 kg	B	40
G	Solids containing flammable liquid, n.o.s.	4.1	UN3175	II	4.1	47, IB6, IP2, T3, TP33	151	212	240	15 kg	50 kg	B	
G	Solids containing toxic liquid, n.o.s.	6.1	UN3243	II	6.1	48, IB2, T2, TP33	153	212	240	25 kg	100 kg	B	40
	Sounding devices, explosive	1.2F	UN0204	II	1.2F		None	62	None	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1F	UN0296	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1D	UN0374	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Sounding devices, explosive	1.2D	UN0375	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Spirits of salt, see Hydrochloric acid												
	Squibs, see Igniters *etc*												
	Stannic chloride, anhydrous	8	UN1827	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	
	Stannic chloride pentahydrate	8	UN2440	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Stannic phosphide	4.3	UN1433	I	4.3, 6.1.	A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Steel swarf, see Ferrous metal borings, *etc*												
	Stibine	2.3	UN2676		2.3, 2.1.	1	None	304	None	Forbidden	Forbidden	D	40
	Storage batteries, wet, see Batteries, *wet etc*												
	Strontium arsenite	6.1	UN1691	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Strontium chlorate	5.1	UN1506	II	5.1	A1, A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Strontium nitrate	5.1	UN1507	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Strontium perchlorate	5.1	UN1508	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Strontium peroxide	5.1	UN1509	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
	Strontium phosphide	4.3	UN2013	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Strychnine *or* Strychnine salts	6.1	UN1692	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	Styphnic acid, *see* Trinitroresorcinol, *etc*												
	Styrene monomer, stabilized	3	UN2055	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
G	Substances, explosive, n.o.s.	1.1L	UN0357	II	1.1L	101	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G	Substances, explosive, n.o.s.	1.2L	UN0358	II	1.2L	101	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G	Substances, explosive, n.o.s.	1.3L	UN0359	II	1.3L	101	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G	Substances, explosive, n.o.s.	1.1A	UN0473	II	1.1A	101, 111	None	62	None	Forbidden	Forbidden	12	
G	Substances, explosive, n.o.s.	1.1C	UN0474	II	1.1C	101	None	62	None	Forbidden	Forbidden	10	
G	Substances, explosive, n.o.s.	1.1D	UN0475	II	1.1D	101	None	62	None	Forbidden	Forbidden	10	
G	Substances, explosive, n.o.s.	1.1G	UN0476	II	1.1G	101	None	62	None	Forbidden	Forbidden	08	
G	Substances, explosive, n.o.s.	1.3C	UN0477	II	1.3C	101	None	62	None	Forbidden	Forbidden	10	
G	Substances, explosive, n.o.s.	1.3G	UN0478	II	1.3G	101	None	62	None	Forbidden	Forbidden	08	
G	Substances, explosive, n.o.s.	1.4C	UN0479	II	1.4C	101	None	62	None	Forbidden	75 kg	09	
G	Substances, explosive, n.o.s.	1.4D	UN0480	II	1.4D	101	None	62	None	Forbidden	75 kg	09	
G	Substances, explosive, n.o.s.	1.4S	UN0481	II	1.4S	101	None	62	None	25 kg	75 kg	05	
G	Substances, explosive, n.o.s.	1.4G	UN0485	II	1.4G	101	None	62	None	Forbidden	75 kg	08	
G	Substances, explosive, very insensitive, n.o.s., *or* Substances, EVI, n.o.s.	1.5D	UN0482	II	1.5D	101	None	62	None	Forbidden	Forbidden	10	
	Substituted nitrophenol pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2780	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Substituted nitrophenol pesticides, liquid, toxic	6.1	UN3014	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Substituted nitrophenol pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C.*	6.1	UN3013	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Substituted nitrophenol pesticides, solid, toxic	6.1	UN2779	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40

	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Sucrose octanitrate (dry)	Forbidden											
	Sulfamic acid	8	UN2967	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
D	Sulfur	9	NA1350	III	9	10, IB8, IP2	None	None	240	No limit	No limit	A	19, 74
I	Sulfur	4.1	UN1350	III	4.1	30, IB8, IP3, T1, TP33	None	None	240	No limit	No limit	A	19, 74
	Sulfur and chlorate, loose mixtures of	Forbidden											
	Sulfur chlorides	8	UN1828	I	8	5, A3, A7, A10, B10, B77, N34, T20, TP2, TP12	None	201	243	Forbidden	2.5 L	C	40
	Sulfur dichloride, see Sulfur chlorides												
	Sulfur dioxide	2.3	UN1079		2.3, 8	3, B14, T50, TP19	None	304	314, 315.	Forbidden	Forbidden	D	40
	Sulfur dioxide solution, see Sulfurous acid												
	Sulfur hexafluoride	2.2	UN1080		2.2		306	304	314, 315.	75 kg	150 kg	A	
D	Sulfur, molten	9	NA2448	III	9	30, IB3, T1, TP3	None	213	247	Forbidden	Forbidden	C	61
I	Sulfur, molten	4.1	UN2448	III	4.1	30, IB1, T1, TP3	None	213	247	Forbidden	Forbidden	C	61
	Sulfur tetrafluoride	2.3	UN2418		2.3, 8	1	None	302	245	Forbidden	Forbidden	D	40, 52
+	Sulfur trioxide, stabilized	8	UN1829	I	8, 6.1	2, B9, B14, B32, B49, B74, B77, N34, T20, TP4, TP12, TP13, TP25, TP26, TP38, TP45	None	227	244	Forbidden	Forbidden	A	40
	Sulfuretted hydrogen, see Hydrogen sulfide												
	Sulfuric acid, fuming *with less than 30 percent free sulfur trioxide*	8	UN1831	I	8	B84, N34, T20, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	C	14, 40
+	Sulfuric acid, fuming *with 30 percent or more free sulfur trioxide*	8	UN1831	I	8, 6.1	2, A3, A6, A7, B9, B14, B32, B74, B77, B84, N34, T20, TP2, TP12, TP13	None	227	244	Forbidden	Forbidden	C	14, 40
	Sulfuric acid, spent	8	UN1832	II	8	A3, A7, B2, B83, B84, IB2, N34, T8, TP2, TP12	None	202	242	Forbidden	30 L	C	14
	Sulfuric acid *with more than 51 percent acid*	8	UN1830	II	8	A3, A7, B3, B83, B84, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	C	14
	Sulfuric acid *with not more than 51% acid*	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12	154	202	242	1 L	30 L	B	
	Sulfuric and hydrofluoric acid mixtures, *see* Hydrofluoric and sulfuric acid mixtures												
	Sulfuric anhydride, see Sulfur trioxide, stabilized												
	Sulfurous acid	8	UN1833	II	8	B3, IB2, T7, TP2	154	202	242	1 L	30 L	B	40
+	Sulfuryl chloride	8	UN1834	I	8, 6.1	1, B6, B9, B10, B14, B30, B74, B77, N34, T22, TP2, TP12, TP38, TP44	None	226	244	Forbidden	Forbidden	C	40
	Sulfuryl fluoride	2.3	UN2191		2.3	4	None	304	314, 315.	Forbidden	Forbidden	D	40
	Tars, liquid *including road asphalt and oils, bitumen and cut backs*	3	UN1999	II	3	149, B13, IB2, T3, TP3, TP29	150	202	242	5 L	60 L	B	
	.....	.....		III	3	B1, B13, IB3, T1, TP3	150	203	242	60 L	220 L	A	
	Tear gas candles	6.1	UN1700	II	6.1, 4.1.		None	340	None	Forbidden	50 kg	D	40
	Tear gas cartridges, see Ammunition, tear-producing, *etc*												
D	Tear gas devices *with more than 2 percent tear gas substances, by mass*	6.1	NA1693	I	6.1		None	340	None	Forbidden	Forbidden	D	40
	.....	.....		II	6.1		None	340	None	Forbidden	Forbidden	D	40
	Tear gas devices, with not more than 2 percent tear gas substances, by mass, see Aerosols, *etc.*												
	Tear gas grenades, see Tear gas candles												
G	Tear gas substances, liquid, n.o.s.	6.1	UN1693	I	6.1		None	201	None	Forbidden	Forbidden	D	40
	.....	.....		II	6.1	IB2	None	202	None	Forbidden	5 L	D	40
G	Tear gas substance, solid, n.o.s.	6.1	UN3448	I	6.1	T6, TP33	None	211	242	Forbidden	Forbidden	D	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	Forbidden	25 kg	D	40
	Tellurium compound, n.o.s.	6.1	UN3284	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	.....
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Tellurium hexafluoride	2.3	UN2195	.....	2.3, 8	1	None	302	None	Forbidden	Forbidden	D	40
	Terpene hydrocarbons, n.o.s.	3	UN2319	III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
	Terpinolene	3	UN2541	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Tetraazido benzene quinone	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetrabromoethane	6.1	UN2504	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	1,1,2,2-Tetrachloroethane	6.1	UN1702	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
	Tetrachloroethylene	6.1	UN1897	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
	Tetraethyl dithiopyrophosphate	6.1	UN1704	II	6.1	IB2, T7, TP2	153	212	242	25 kg	100 kg	D	40
	Tetraethyl silicate	3	UN1292	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Tetraethylammonium perchlorate (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetraethylenepentamine	8	UN2320	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	1,1,1,2-Tetrafluoroethane *or* Refrigerant gas R 134a	2.2	UN3159	.....	2.2	T50	306	304	314, 315.	75 kg	150 kg	A	.....
	Tetrafluoroethylene, stabilized	2.1	UN1081	.....	2.1		306	304	None	Forbidden	150 kg	E	40
	Tetrafluoromethane *or* Refrigerant gas R 14	2.2	UN1982	.....	2.2		None	302	None	75 kg	150 kg	A	.....
	1,2,3,6-Tetrahydrobenzaldehyde	3	UN2498	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Tetrahydrofuran	3	UN2056	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	.....
	Tetrahydrofurfurylamine	3	UN2943	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Tetrahydrophthalic anhydrides *with more than 0.05 percent of maleic anhydride*	8	UN2698	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
	1,2,3,6-Tetrahydropyridine	3	UN2410	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Tetrahydrothiophene	3	UN2412	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Tetramethylammonium hydroxide, solid	8	UN3423	II	8	B2, IB8, IP2, IP4, T3, TP33	154	213	240	15 kg	50 kg	A	52
	Tetramethylammonium hydroxide solution	8	UN1835	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	52
	.....	.....		III	8	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	52
	Tetramethylene diperoxide dicarbamide	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetramethylsilane	3	UN2749	I	3	A7, T14, TP2	None	201	243	Forbidden	30 L	D	.....
	Tetranitro diglycerin	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetranitroaniline	1.1D	UN0207	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
+	Tetranitromethane	5.1	UN1510	I	5.1, 6.1.	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP44	None	227	None	Forbidden	Forbidden	D	40, 66
	2,3,4,6-Tetranitrophenol	Forbidden			.....		.....	.....	.....	.....	.....		.....
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden			.....		.....	.....	.....	.....	.....		.....
	2,3,4,6-Tetranitrophenylnitramine	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetranitroresorcinol (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden			.....		.....	.....	.....	.....	.....		.....
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetrapropylorthotitanate	3	UN2413	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	.....
	Tetrazene, *see* Guanyl nitrosaminoguanyltetrazene	.....			.....		.....	.....	.....	.....	.....		.....
	Tetrazine (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetrazol-1-acetic acid	1.4C	UN0407	II	1.4C		None	62	None	Forbidden	75 kg	09	.....
	1H-Tetrazole	1.1D	UN0504	.....	1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Tetrazolyl azide (dry)	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Tetryl, *see* Trinitrophenylmethylnitramine	.....			.....		.....	.....	.....	.....	.....		.....
A I W	Textile waste, wet	4.2	UN1857	III	4.2		151	213	240	Forbidden	Forbidden	A	.....
	Thallium chlorate	5.1	UN2573	II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Thallium compounds, n.o.s.	6.1	UN1707	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Thallium nitrate	6.1	UN2727	II	6.1, 5.1.	IB6, IP2, T3, TP33	153	212	242	5 kg	25 kg	A	.....
	4-Thiapentanal	6.1	UN2785	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	D	25, 49
	Thioacetic acid	3	UN2436	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Thiocarbamate pesticide, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2772	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40

			II	3, 6.1	IB2, T11, TP13, TP27	150	202	243	1 L	60 L	B	40
Thiocarbamate pesticide, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3005	I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Thiocarbamate pesticide, liquid, toxic	6.1	UN3006	I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Thiocarbamate pesticides, solid, toxic	6.1	UN2771	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Thiocarbonylchloride, see Thiophosgene												
Thioglycol	6.1	UN2966	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
Thioglycolic acid	8	UN1940	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
Thiolactic acid	6.1	UN2936	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
Thionyl chloride	8	UN1836	I	8	B6, B10, N34, T10, TP2, TP12, TP13	None	201	243	Forbidden	Forbidden	C	40
Thiophene	3	UN2414	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
+ Thiophosgene	6.1	UN2474	II	6.1	2, B9, B14, B32, B74, N33, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
Thiophosphoryl chloride	8	UN1837	II	8	A3, A7, B2, B8, B25, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
Thiourea dioxide	4.2	UN3341	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	D	
			III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	
Tin chloride, fuming, see Stannic chloride, anhydrous												
Tin perchloride or Tin tetrachloride, see Stannic chloride, anhydrous												
Tinctures, medicinal	3	UN1293	II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Tinning flux, see Zinc chloride												
Titanium disulphide	4.2	UN3174	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	A	
Titanium hydride	4.1	UN1871	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	241	15 kg	50 kg	E	
Titanium powder, dry	4.2	UN2546	I	4.2		None	211	242	Forbidden	Forbidden	D	
			II	4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	212	241	15 kg	50 kg	D	
			III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	
Titanium powder, wetted *with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.*	4.1	UN1352	II	4.1	A19, A20, IB6, IP2, N34, T3, TP33	None	212	240	15 kg	50 kg	E	74
Titanium sponge granules *or* Titanium sponge powders	4.1	UN2878	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	D	74
+ Titanium tetrachloride	8	UN1838	II	8, 6.1	2, B7, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Titanium trichloride mixtures	8	UN2869	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	40
			III	8	A7, IB8, IP3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	40
Titanium trichloride, pyrophoric *or* Titanium trichloride mixtures, pyrophoric	4.2	UN2441	I	4.2, 8	N34	None	181	244	Forbidden	Forbidden	D	40
TNT mixed with aluminum, see Tritonal												
TNT, *see* Trinitrotoluene, *etc*												
Toluene	3	UN1294	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
+ Toluene diisocyanate	6.1	UN2078	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	D	25, 40
Toluene sulfonic acid, see Alkyl, *or* Aryl sulfonic acid *etc*												
+ Toluidines, liquid	6.1	UN1708	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Toluidines, solid	6.1	UN3451	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	2,4-Toluylenediamine, solid *or* 2,4-Toluenediamine, solid	6.1	UN1709	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	2,4-Toluylenediamine solution *or* 2,4-Toluenediamine solution	6.1	UN3418	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Torpedoes, liquid fueled, *with inert head*	1.3J	UN0450	II	1.3J			62	None	Forbidden	Forbidden	04	23E
	Torpedoes, liquid fueled, *with or without bursting charge*	1.1J	UN0449	II	1.1J			62	None	Forbidden	Forbidden	04	23E
	Torpedoes *with bursting charge*	1.1E	UN0329	II	1.1E			62	None	Forbidden	Forbidden	03	
	Torpedoes *with bursting charge*	1.1F	UN0330	II	1.1F			62	None	Forbidden	Forbidden	08	
	Torpedoes *with bursting charge*	1.1D	UN0451	II	1.1D			62	None	Forbidden	Forbidden	03	
G	Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.*	6.1	UN3381	I	6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.*	6.1	UN3382	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP4527, TP38, TP4513	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.*	6.1	UN3383	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.*	6.1	UN3384	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.*	6.1	UN3385	I	6.1, 4.3.	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.*	6.1	UN3386	I	6.1, 4.3.	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.*	6.1	UN3387	I	6.1, 5.1.	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.*	6.1	UN3388	I	6.1, 5.1.	2, B9, B14, B32, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.*	6.1	UN3389	I	6.1, 8	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.*	6.1	UN3390	I	6.1, 8	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
G	Toxic liquid, corrosive, inorganic, n.o.s.	6.1	UN3289	I	6.1, 8	T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	A	
				II	6.1, 8	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	A	
G	Toxic liquid, inorganic, n.o.s.	6.1	UN3287	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	A	
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
G	Toxic liquids, corrosive, organic, n.o.s.	6.1	UN2927	I	6.1, 8	T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	6.1, 8	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	B	40

G	Toxic liquids, flammable, organic, n.o.s.	6.1	UN2929	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
G	Toxic, liquids, organic, n.o.s.	6.1	UN2810	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Toxic liquids, oxidizing, n.o.s.	6.1	UN3122	I	6.1, 5.1.	A4	None	201	243	Forbidden	2.5 L	C	
				II	6.1, 5.1.	IB2	153	202	243	1 L	5 L	C	
G	Toxic liquids, water-reactive, n.o.s.	6.1	UN3123	I	6.1, 4.3.	A4	None	201	243	Forbidden	1 L	E	40
				II	6.1, 4.3.	IB2	None	202	243	1 L	5 L	E	40
G	Toxic solid, corrosive, inorganic, n.o.s.	6.1	UN3290	I	6.1, 8	IB7, T6, TP33	None	211	242	1 kg	25 kg	A	
				II	6.1, 8	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	A	
G	Toxic solid, inorganic, n.o.s.	6.1	UN3288	I	6.1	IB7, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
G	Toxic solids, corrosive, organic, n.o.s.	6.1	UN2928	I	6.1, 8	IB7, T6, TP33	None	211	242	1 kg	25 kg	B	40
				II	6.1, 8	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	B	40
G	Toxic solids, flammable, organic, n.o.s.	6.1	UN2930	I	6.1, 4.1.	IB6, T6, TP33	None	211	242	1 kg	15 kg	B	
				II	6.1, 4.1.	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	B	
G	Toxic solids, organic, n.o.s.	6.1	UN2811	I	6.1	IB7, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
G	Toxic solids, oxidizing, n.o.s.	6.1	UN3086	I	6.1, 5.1.	T6, TP33	None	211	242	1 kg	15 kg	C	
				II	6.1, 5.1.	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	C	
G	Toxic solids, self-heating, n.o.s.	6.1	UN3124	I	6.1, 4.2.	A5, T6, TP33	None	211	242	5 kg	15 kg	D	40
				II	6.1, 4.2.	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	40
G	Toxic solids, water-reactive, n.o.s.	6.1	UN3125	I	6.1, 4.3.	A5, T6, TP33	None	211	242	5 kg	15 kg	D	40
				II	6.1, 4.3.	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	D	40
G	Toxins, extracted from living sources, liquid, n.o.s.	6.1	UN3172	I	6.1	141	None	201	243	1 L	30 L	B	40
				II	6.1	141, IB2	None	202	243	5 L	60 L	B	40
				III	6.1	141, IB3	153	203	241	60 L	220 L	B	40
	Toxins, extracted from living sources, solid, n.o.s.	6.1	UN3462	I	6.1	141, IB7, IP1, T6, TP33	None	211	243	5 kg	50 kg	B	
				II	6.1	141, IB8, IP2, IP4, T3, TP33	None	212	243	25 kg	100 kg	B	
				III	6.1	141, IB8, IP3, T1, TP33	153	213	241	100 kg	200 kg	A	
D	Toy Caps	1.4S	NA0337	II	1.4S		None	62	None	25 kg	100 kg	05	
	Tracers for ammunition	1.3G	UN0212	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Tracers for ammunition	1.4G	UN0306	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Tractors, see Vehicle, *etc*												
	Tri-(b-nitroxyethyl) ammonium nitrate	Forbidden											
	Triallyl borate	6.1	UN2609	III	6.1	IB3	153	203	241	60 L	220 L	A	13
	Triallylamine	3	UN2610	III	3, 8	B1, IB3, T4, TP1	None	203	242	5 L	60 L	A	40
	Triazine pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2764	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Triazine pesticides, liquid, toxic	6.1	UN2998	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations Passenger aircraft/rail	Cargo aircraft only	(10) Vessel stowage Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	.....	.....		III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Triazine pesticides, liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN2997	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	.....	.....		II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	.....	.....		III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Triazine pesticides, solid, toxic	6.1	UN2763	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	.....	.....		II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	.....	.....		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Tributylamine	6.1	UN2542	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
	Tributylphosphane	4.2	UN3254	I	4.2	T21, TP7, TP33	None	211	242	Forbidden	Forbidden	D	136
	Trichloro-s-triazinetrione dry, with more than 39 percent available chlorine, see Trichloroisocyanuric acid, dry.	.....			.....		.....	.....	.....	.....	.....		.....
	Trichloroacetic acid	8	UN1839	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	Trichloroacetic acid, solution	8	UN2564	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	B	.....
	.....	.....		III	8	A3, A6, A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	B	8
+	Trichloroacetyl chloride	8	UN2442	II	8, 6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Trichlorobenzenes, liquid	6.1	UN2321	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Trichlorobutene	6.1	UN2322	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	25, 40
	1,1,1-Trichloroethane	6.1	UN2831	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
	Trichloroethylene	6.1	UN1710	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
	Trichloroisocyanuric acid, dry	5.1	UN2468	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13
	Trichloromethyl perchlorate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Trichlorosilane	4.3	UN1295	I	4.3, 3, 8.	N34, T14, TP2, TP7, TP13	None	201	244	Forbidden	Forbidden	D	21, 28, 40, 49, 100
	Tricresyl phosphate *with more than 3 percent ortho isomer*	6.1	UN2574	II	6.1	A3, IB2, N33, N34, T7, TP2	153	202	243	5 L	60 L	A	.....
	Triethyl phosphite	3	UN2323	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Triethylamine	3	UN1296	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Triethylenetetramine	8	UN2259	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	40, 52
	Trifluoroacetic acid	8	UN2699	I	8	A3, A6, A7, B4, N3, N34, N36, T10, TP2, TP12	None	201	243	0.5 L	2.5 L	B	12, 40
	Trifluoroacetyl chloride	2.3	UN3057	.....	2.3, 8	2, B7, B9, B14, T50, TP21	None	304	314, 315.	Forbidden	Forbidden	D	40
	Trifluorochloroethylene, stabilized	2.3	UN1082	.....	2.3, 2.1.	3, B14, T50	None	304	314, 315.	Forbidden	Forbidden	D	40
	Trifluoromethane *or* Refrigerant gas R 23	2.2	UN1984	.....	2.2		306	304	314, 315.	75 kg	150 kg	A	.....
	1,1,1-Trifluoroethane *or* Refrigerant gas, R 143a	2.1	UN2035	.....	2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Trifluoromethane, refrigerated liquid	2.2	UN3136	.....	2.2	T75, TP5	306	None	314, 315.	50 kg	500 kg	D	.....
	2-Trifluoromethylaniline	6.1	UN2942	III	6.1	IB3	153	203	241	60 L	220 L	A	.....
	3-Trifluoromethylaniline	6.1	UN2948	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Triformoxime trinitrate	Forbidden			.....		.....	.....	.....	.....	.....		.....
	Triisobutylene	3	UN2324	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	.....
	Triisopropyl borate	3	UN2616	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	A	.....
	.....	.....		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....

D	Trimethoxysilane	6.1	NA9269	I	6.1, 3	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	E	40
	Trimethyl borate	3	UN2416	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	B	
	Trimethyl phosphite	3	UN2329	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden											
	Trimethylacetyl chloride	6.1	UN2438	I	6.1, 8, 3.	2, B3, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	25, 40
	Trimethylamine, anhydrous	2.1	UN1083		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Trimethylamine, aqueous solutions *with not more than 50 percent trimethylamine by mass*	3	UN1297	I	3, 8	T11, TP1	None	201	243	0.5 L	2.5 L	D	40, 135
				II	3, 8	B1, IB2, T7, TP1	150	202	243	1 L	5 L	B	40, 41
				III	3, 8	B1, IB3, T7, TP1	150	203	242	5 L	60 L	A	40, 41
	1,3,5-Trimethylbenzene	3	UN2325	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Trimethylchlorosilane	3	UN1298	II	3, 8	A3, A7, B77, IB2, N34, T7, TP2, TP13	150	202	243	1 L	5 L	E	40
	Trimethylcyclohexylamine	8	UN2326	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Trimethylene glycol diperchlorate	Forbidden											
	Trimethylhexamethylene diisocyanate	6.1	UN2328	III	6.1	IB3, T4, TP2, TP13	153	203	241	60 L	220 L	B	
	Trimethylhexamethylenediamines	8	UN2327	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Trimethylol nitromethane trinitrate	Forbidden											
	Trinitro-meta-cresol	1.1D	UN0216	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden											
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden											
	Trinitroacetic acid	Forbidden											
	Trinitroacetonitrile	Forbidden											
	Trinitroamine cobalt	Forbidden											
	Trinitroaniline *or* Picramide	1.1D	UN0153	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitroanisole	1.1D	UN0213	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzene (picryl chloride), wetted, *with not less than 10% water by mass*	4.1	UN3365	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene, wetted, *with not less than 10% water, by mass*	4.1	UN3367	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene, *dry or wetted with less than 30 percent water, by mass*	1.1D	UN0214	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzene, wetted *with not less than 30 percent water, by mass*	4.1	UN1354	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrobenzenesulfonic acid	1.1D	UN0386	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitrobenzoic acid, *dry or wetted with less than 30 percent water, by mass*	1.1D	UN0215	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzoic acid, wetted *with not less than 10% water by mass*	4.1	UN3368	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzoic acid, wetted *with not less than 30 percent water, by mass*	4.1	UN1355	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrochlorobenzene *or* Picryl chloride	1.1D	UN0155	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitroethanol	Forbidden											
	Trinitroethylnitrate	Forbidden											
	Trinitrofluorenone	1.1D	UN0387	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitromethane	Forbidden											
	1,3,5-Trinitronaphthalene	Forbidden											
	Trinitronaphthalene	1.1D	UN0217	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrophenetole	1.1D	UN0218	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrophenol (picric acid), wetted, *with not less than 10 percent water by mass*	4.1	UN3364	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrophenol *or* Picric acid, *dry or wetted with less than 30 percent water, by mass*	1.1D	UN0154	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitrophenol, wetted *with not less than 30 percent water, by mass*	4.1	UN1344	I	4.1	23, A8, A19, N41	None	211	None	1 kg	15 kg	E	28, 36
	2,4,6-Trinitrophenyl guanidine (dry)	Forbidden											
	2,4,6-Trinitrophenyl nitramine	Forbidden											
	2,4,6-Trinitrophenyl trimethylol methyl nitramine trinitrate (dry)	Forbidden											
	Trinitrophenylmethylnitramine *or* Tetryl	1.1D	UN0208	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitroresorcinol *or* Styphnic acid, *dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass.*	1.1D	UN0219	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitroresorcinol, wetted *or* Styphnic acid, wetted *with not less than 20 percent water, or mixture of alcohol and water by mass.*	1.1D	UN0394	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	2,4,6-Trinitroso-3-methyl nitraminoanisole	Forbidden											
	Trinitrotetramine cobalt nitrate	Forbidden											
	Trinitrotoluene and Trinitrobenzene mixtures *or* TNT and trinitrobenzene mixtures *or* TNT and hexanitrostilbene mixtures *or* Trinitrotoluene and hexanitrostilnene mixtures.	1.1D	UN0388	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrotoluene mixtures containing Trinitrobenzene and Hexanitrostilbene *or* TNT mixtures containing trinitrobenzene and hexanitrostilbene.	1.1D	UN0389	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrotoluene *or* TNT, *dry or wetted with less than 30 percent water, by mass*	1.1D	UN0209	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrotoluene (TNT), wetted, *with not less than 10 percent water by mass*	4.1	UN3366	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Trinitrotoluene, wetted *with not less than 30 percent water, by mass*	4.1	UN1356	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Tripropylamine	3	UN2260	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
	Tripropylene	3	UN2057	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Tris-(1-aziridinyl)phosphine oxide, solution	6.1	UN2501	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Tris, bis-bifluoroamino diethoxy propane (TVOPA)	Forbidden											
	Tritonal	1.1D	UN0390	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Tungsten hexafluoride	2.3	UN2196		2.3, 8	2	None	338	None	Forbidden	Forbidden	D	40
	Turpentine	3	UN1299	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Turpentine substitute	3	UN1300	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	B	
				II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Undecane	3	UN2330	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Urea hydrogen peroxide	5.1	UN1511	III	5.1, 8	A1, A7, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13
	Urea nitrate, *dry or wetted with less than 20 percent water, by mass*	1.1D	UN0220	II	1.1D	119	None	62	None	Forbidden	Forbidden	10	
	Urea nitrate, wetted, *with not less than 10 percent water by mass*	4.1	UN3370	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Urea nitrate, wetted *with not less than 20 percent water, by mass*	4.1	UN1357	I	4.1	23, 39, A8, A19, N41	None	211	None	1 kg	15 kg	E	28, 36
	Urea peroxide, see Urea hydrogen peroxide												
	Valeraldehyde	3	UN2058	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Valeric acid, see Corrosive liquids, n.o.s.												
	Valeryl chloride	8	UN2502	II	8, 3	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	243	1 L	30 L	C	40
	Vanadium compound, n.o.s.	6.1	UN3285	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Vanadium oxytrichloride	8	UN2443	II	8	A3, A6, A7, B2, B16, IB2, N34, T7, TP2	154	202	242	Forbidden	30 L	C	40
	Vanadium pentoxide, *non-fused form*	6.1	UN2862	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Vanadium tetrachloride	8	UN2444	I	8	A3, A6, A7, B4, N34, T10, TP2	None	201	243	Forbidden	2.5 L	C	40
	Vanadium trichloride	8	UN2475	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	40
	Vanadyl sulfate	6.1	UN2931	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Vehicle, flammable gas powered	9	UN3166		9	135, 157	220	220	220	Forbidden	No limit	A	
	Vehicle, flammable liquid powered	9	UN3166		9	135, 157	220	220	220	No limit	No limit	A	
	Very signal cartridge, see Cartridges, signal												
	Vinyl acetate, stabilized	3	UN1301	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Vinyl bromide, stabilized	2.1	UN1085		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Vinyl butyrate, stabilized	3	UN2838	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Vinyl chloride, stabilized	2.1	UN1086		2.1	21, B44, T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Vinyl chloroacetate	6.1	UN2589	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Vinyl ethyl ether, stabilized	3	UN1302	I	3	A3, T11, TP2	None	201	243	1 L	30 L	D	
	Vinyl fluoride, stabilized	2.1	UN1860		2.1		306	304	314, 315.	Forbidden	150 kg	E	40
	Vinyl isobutyl ether, stabilized	3	UN1304	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Vinyl methyl ether, stabilized	2.1	UN1087		2.1	B44, T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Vinyl nitrate polymer	Forbidden											
	Vinylidene chloride, stabilized	3	UN1303	I	3	T12, TP2, TP7	150	201	243	1 L	30 L	E	40

	Vinylpyridines, stabilized	6.1	UN3073	II	6.1, 3, 8.	IB1, T7, TP2, TP13	153	202	243	1 L	30 L	B	40
	Vinyltoluenes, stabilized	3	UN2618	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Vinyltrichlorosilane, stabilized	3	UN1305	I	3, 8	A3, A7, B6, N34, T11, TP2, TP13	None	201	243	Forbidden	2.5 L	B	40
	Warheads, rocket *with burster or expelling charge*	1.4D	UN0370	II	1.4D		None	62	None	Forbidden	75 kg	02	
	Warheads, rocket *with burster or expelling charge*	1.4F	UN0371	II	1.4F		None	62	None	Forbidden	Forbidden	08	
	Warheads, rocket *with bursting charge*	1.1D	UN0286	II	1.1D		None	62	None	Forbidden	Forbidden	03	
	Warheads, rocket *with bursting charge*	1.2D	UN0287	II	1.2D		None	62	None	Forbidden	Forbidden	03	
	Warheads, rocket *with bursting charge*	1.1F	UN0369	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	Warheads, torpedo *with bursting charge*	1.1D	UN0221	II	1.1D		None	62	None	Forbidden	Forbidden	03	
G	Water-reactive liquid, corrosive, n.o.s.	4.3	UN3129	I	4.3, 8		None	201	243	Forbidden	1 L	D	
				II	4.3, 8	IB1	None	202	243	1 L	5 L	E	85
				III	4.3, 8	IB2	None	203	242	5 L	60 L	E	
G	Water-reactive liquid, n.o.s.	4.3	UN3148	I	4.3		None	201	244	Forbidden	1 L	E	40
				II	4.3	IB1	None	202	243	1 L	5 L	E	40
				III	4.3	IB2	None	203	242	5 L	60 L	E	40
G	Water-reactive liquid, toxic, n.o.s.	4.3	UN3130	I	4.3, 6.1.	A4	None	201	243	Forbidden	1 L	D	
				II	4.3, 6.1.	IB1	None	202	243	1 L	5 L	E	85
				III	4.3, 6.1.	IB2	None	203	242	5 L	60 L	E	85
G	Water-reactive solid, corrosive, n.o.s.	4.3	UN3131	I	4.3, 8	IB4, IP1, N40	None	211	242	Forbidden	15 kg	D	
				II	4.3, 8	IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	85
				III	4.3, 8	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	85
G	Water-reactive solid, flammable, n.o.s.	4.3	UN3132	I	4.3, 4.1.	IB4, N40	None	211	242	Forbidden	15 kg	D	
				II	4.3, 4.1.	IB4, T3, TP33	151	212	242	15 kg	50 kg	E	
				III	4.3, 4.1.	IB6, T1, TP33	151	213	241	25 kg	100 kg	E	
G	Water-reactive solid, n.o.s.	4.3	UN2813	I	4.3	IB4, N40	None	211	242	Forbidden	15 kg	E	40
				II	4.3	IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	40
				III	4.3	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	40
G	Water-reactive, solid, oxidizing, n.o.s.	4.3	UN3133	II	4.3, 5.1.		None	214	214	Forbidden	Forbidden	E	40
				III	4.3, 5.1.		None	214	214	Forbidden	Forbidden	E	40
G	Water-reactive solid, self-heating, n.o.s.	4.3	UN3135	I	4.3, 4.2.	N40	None	211	242	Forbidden	15 kg	E	
				II	4.3, 4.2.	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	E	
				III	4.3, 4.2.	IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	E	
G	Water-reactive solid, toxic, n.o.s.	4.3	UN3134	I	4.3, 6.1.	A8, IB4, IP1, N40	None	211	242	Forbidden	15 kg	D	
				II	4.3, 6.1.	IB5, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	85
				III	4.3, 6.1.	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	85
	Wheel chair, electric, see Battery powered vehicle *or* Battery powered equipment												
	White acid, see Hydrofluoric acid												
I	White asbestos *(chrysotile, actinolite, anthophyllite, tremolite)*	9	UN2590	III	9	156, IB8, IP2, IP3, T1, TP33	155	216	240	200 kg	200 kg	A	34, 40
	Wood preservatives, liquid	3	UN1306	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
A I W	Wool waste, wet	4.2	UN1387	III	4.2		151	213	240	Forbidden	Forbidden	A	
	Xanthates	4.2	UN3342	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	D	40
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	40
	Xenon	2.2	UN2036		2.2		306	302	None	75 kg	150 kg	A	
	Xenon, refrigerated liquid *(cryogenic liquids)*	2.2	UN2591		2.2	T75, TP5	320	None	None	50 kg	500 kg	B	
	Xylenes	3	UN1307	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Xylenols, solid	6.1	UN2261	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Xylenols, liquid	6.1	UN3430	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Xylidines, liquid	6.1	UN1711	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Xylidines, solid	6.1	UN3452	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Xylyl bromide, liquid	6.1	UN1701	II	6.1	A3, A6, A7, IB2, N33, T7, TP2, TP13	None	340	None	Forbidden	60 L	D	40
	Xylyl bromide, solid	6.1	UN3417	II	6.1	A3, A6, A7, IB8, IP2, IP4, N33, T3, TP33	None	340	None	25 kg	100 kg	B	40
	p-Xylyl diazide	Forbidden											
	Zinc ammonium nitrite	5.1	UN1512	II	5.1	IB8, IP4, T3, TP33	None	212	242	5 kg	25 kg	E	
	Zinc arsenate *or* Zinc arsenite *or* Zinc arsenate and zinc arsenite mixtures	6.1	UN1712	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Zinc ashes	4.3	UN1435	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	
	Zinc bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
	Zinc bromate	5.1	UN2469	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Zinc chlorate	5.1	UN1513	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Zinc chloride, anhydrous	8	UN2331	III	8	IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	
	Zinc chloride, solution	8	UN1840	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Zinc cyanide	6.1	UN1713	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	52
	Zinc dithionite *or* Zinc hydrosulfite	9	UN1931	III	None	IB8, IP3, T1, TP33	155	204	240	100 kg	200 kg	A	49
	Zinc ethyl, see Diethylzinc												
	Zinc fluorosilicate	6.1	UN2855	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Zinc hydrosulfite, *see* Zinc dithionite												
	Zinc muriate solution, see Zinc chloride, solution												
	Zinc nitrate	5.1	UN1514	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	
	Zinc permanganate	5.1	UN1515	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
	Zinc peroxide	5.1	UN1516	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
	Zinc phosphide	4.3	UN1714	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Zinc powder *or* Zinc dust	4.3	UN1436	I	4.3, 4.2.	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg	A	52, 53
				II	4.3, 4.2.	A19, IB7, IP2, T3, TP33	None	212	242	15 kg	50 kg	A	52, 53
				III	4.3, 4.2.	IB8, IP4, T1, TP33	None	213	242	25 kg	100 kg	A	52, 53
	Zinc resinate	4.1	UN2714	III	4.1	A1, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	
	Zinc selenate, see Selenates *or* Selenites												
	Zinc selenite, see Selenates *or* Selenites												
	Zinc silicofluoride, see Zinc fluorosilicate												
	Zirconium, dry, *coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns).*	4.1	UN2858	III	4.1	A1	151	213	240	25 kg	100 kg	A	
	Zirconium, dry, *finished sheets, strip or coiled wire*	4.2	UN2009	III	4.2	A1, A19	None	213	240	25 kg	100 kg	D	
	Zirconium hydride	4.1	UN1437	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	E	
	Zirconium nitrate	5.1	UN2728	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Zirconium picramate, *dry or wetted with less than 20 percent water, by mass*	1.3C	UN0236	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
	Zirconium picramate, wetted *with not less than 20 percent water, by mass*	4.1	UN1517	I	4.1	23, N41	None	211	None	1 kg	15 kg	D	28, 36
	Zirconium powder, dry	4.2	UN2008	I	4.2	T21, TP7, TP33	None	211	242	Forbidden	Forbidden	D	
				II	4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	212	241	15 kg	50 kg	D	

.....	.....		III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	.....
Zirconium powder, wetted *with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.*	4.1	UN1358	II	4.1	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	E	74
Zirconium scrap	4.2	UN1932	III	4.2	IB8, IP3, N34, T1, TP33	None	213	240	Forbidden	Forbidden	D	.....
Zirconium suspended in a liquid	3	UN1308	I	3		None	201	243	Forbidden	Forbidden	B	.....
.....	.....		II	3	IB2	None	202	242	5 L	60 L	B	.....
.....	.....		III	3	B1, IB2	150	203	242	60 L	220 L	B	.....
Zirconium tetrachloride	8	UN2503	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....

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■ 10. In Appendix B to § 172.101, the List of Marine Pollutants is amended by removing three entries, revising one entry and adding one entry in appropriate alphabetical order to read as follows:

Appendix B to § 172.101—List of Marine Pollutants.

* * * * *

LIST OF MARINE POLLUTANTS

S, M, P (1)	Marine Pollutant (2)
[Remove:] ..	Diphenyl oxide and biphenyl phenyl ether mixtures
	Isoamyl mercaptan
	Pentanethiols
	Tetrachlorophenol
[Revise:]	
PP	2, 6-Di-tert-Butylphenol
[Add:]	
* *	* * *
	Chloropicrin
* *	* * *

■ 11. In § 172.102:

■ a. Paragraphs (b)(3), (b)(4), (b)(7) and (b)(8) are revised and a new paragraph (b)(9) is added.

■ b. In paragraph (c)(1), Special Provisions 47, 135, and 137 are revised; Special Provisions 163, 164, 165, 166, 167, 170 and 171 are added; and Special Provision 143 and 153 are removed.

■ c. In paragraph (c)(2), a new Special Provision A14 is added.

■ d. The introductory text of paragraph (c)(3) is revised; in paragraph (c)(3) Special Provision B69 is revised and paragraph (c)(4) is revised.

■ e. Paragraphs (c)(7)(viii) and (c)(8) are redesignated as paragraphs (c)(8) and (c)(9) respectively, the introductory paragraph of (c)(8) is revised, a new paragraph (c)(8)(ii) is added, Special Provisions TP3 and TP6 are revised and a new Special Provision TP32 and TP33 are added.

■ f. Paragraph (c)(7) is revised.

The additions and revisions read as follows:

§ 172.102 Special provisions.

* * * * *

(b) * * *

(3) A code containing the letter ''B'' refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN, IM Specification portable tanks or IBCs.

(4) A code containing the letters ''IB'' or ''IP'' refers to a special provision that applies only to transportation in IBCs.

* * * * *

(7) A code containing the letter ''T'' refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

(8) A code containing the letters ''TP'' refers to a portable tank special provision for UN or IM Specification portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter ''W'' refers to a special provision that applies only to transportation by water.

(c) * * *

(1) * * *

Code/Special Provisions

* * * * *

47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Small inner packagings consisting of sealed packets containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed into a solid material are not subject to this subchapter provided there is no free liquid in the packet.

* * * * *

135 The entries ''Vehicle, flammable gas powered'' or ''Vehicle, flammable liquid powered,'' as appropriate, must be used when internal combustion engines are installed in a vehicle. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries.

* * * * *

137 Cotton, dry; flax, dry; and sisal, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, ''Cotton Bales—Dimensions and Density'' (IBR, see § 171.7 of this subchapter) to a density of not less than 360 kg/m^3 (22.1 lb/ft^3) for cotton, 400 kg/m^3 (24.97 lb/ft^3) for flax and 620 kg/m^3 (38.71 lb/ft^3) for sisal and transported in a freight container or closed transport vehicle.

* * * * *

163 Substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).

164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). The material must be packaged so that the percentage of diluent does not fall below that stated in the approval at any time during transportation.

165 These substances are susceptible to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of transportation, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

166 When transported in non-friable tablet form calcium hypochlorite, dry or hydrated, may be transported as a Packing Group III material.

167 These storage systems shall always be considered as containing hydrogen.

170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powered mixtures that have been shown to meet the PG III criteria in § 173.127.

(2) *''A'' codes.* These provisions apply only to transportation by aircraft:

Code/Special Provisions

* * * * *

A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with § 173.306 of this subchapter when transported aboard an aircraft.

* * * * *

(3) *''B'' codes.* These provisions apply only to bulk packagings. Except as otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

* * * * *

B69 Dry sodium cyanide or potassium cyanide may be shipped in sift-proof weather-resistant metal covered hopper cars, covered motor vehicles, portable tanks or non-specification bins. Bins must approved by the Associate Administrator.

* * * * *

(4) *Table 1 and Table 2—IB Codes and IP Special IBC Packing Provisions.* These provisions apply only to

transportation in IBCs. When no IBC code is assigned in the § 172.101 Table for a specific proper shipping name, or in § 173.225(e) for Type F organic peroxides, an IBC may not be used unless authorized by the Associate Administrator. The letter ''Z'' shown in the marking code for composite IBCs must be replaced with a capital code letter designation found in § 178.702(a)(2) of this subchapter to specify the material used for the outer packaging. Tables 1 and 2 follow:

TABLE 1.—IB CODES (IBC CODES)

IBC Code	Authorized IBCs
IB1	*Authorized IBCs:* Metal (31A, 31B and 31N). *Additional Requirement:* Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
B2	*Authorized IBCs:* Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). *Additional Requirement:* Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB3	*Authorized IBCs:* Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). *Additional Requirement:* Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 3 for UN2672).
IB4	*Authorized IBCs:* Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	*Authorized IBCs:* Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	*Authorized IBCs:* Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2). *Additional Requirement:* Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	*Authorized IBCs:* Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Wooden (11C, 11D and 11F). *Additional Requirement:* Liners of wooden IBCs must be sift- proof.
IB8	*Authorized IBCs:* Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IB9	IBCs are only authorized if approved by the Associate Administrator.

TABLE 2.—IP CODES

IBC Code	Authorized IBCs
IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 °C (131 °F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air shall be eliminated from the vapor space by nitrogen or other means.
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

* * * * *

(7) *''T'' codes.* (i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through T22 specify the applicable minimum test pressure, the minimum shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.

(ii) The following table specifies the portable tank requirements applicable to ''T'' Codes T1 through T22. Column 1 specifies the ''T'' Code. Column 2 specifies the minimum test pressure, in bar (1 bar = 14.5 psig), at which the periodic hydrostatic testing required by § 180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of § 178.275(g)(3) of this subchapter for the pressure relief devices. When the word ''Normal'' is indicated, § 178.275(g)(3) of this subchapter does not apply. Column 5 references the applicable requirements for bottom openings in part 178 of this

subchapter or references ''Prohibited'' which means bottom openings are prohibited. The table follows:

TABLE OF PORTABLE TANK T CODES T1–T22

[Portable tank codes T1–T22 apply to liquid and solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction (1)	Minimum test pressure (bar) (2)	Minimum shell thickness (in mm-reference steel) (*See* § 178.274(d)) (3)	Pressure-relief requirements (*See* § 178.275(g)) (4)	Bottom opening requirements (*See* § 178.275(d)) (5)
T1	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)0
T2	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T3	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T4	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T5	2.65	§ 178.274(d)(2)	§ 178.275(g)(3)	Prohibited
T6	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T7	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T8	4	§ 178.274(d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited
T10	4	6 mm	§ 178.275(g)(3)	Prohibited
T11	6	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T12	6	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275(g)(3)	Prohibited
T15	10	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T16	10	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T17	10	6 mm	Normal	§ 178.275(d)(3)
T18	10	6 mm	§ 178.275(g)(3)	§ 178.275(d)(3)
T19	10	6 mm	§ 178.275(g)(3)	Prohibited
T20	10	8 mm	§ 178.275(g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited
T22	10	10 mm	§ 178.275(g)(3)	Prohibited

(iii) *T50.* When portable tank instruction T50 is referenced in Column (7) of the § 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of § 173.313 of this subchapter.

(iv) *T75.* When portable tank instruction T75 is referenced in Column (7) of the § 172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of § 178.277 of this subchapter.

(v) *UN and IM portable tank codes/special provisions.* When a specific portable tank instruction is specified by a ''T'' Code in Column (7) of the § 172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in the ''T'' Code. If a frangible disc is required in series with the reclosing pressure relief device for the specified portable tank, the alternative portable tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings—

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank ''T'' Code, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) *''TP'' codes.* (i) These provisions apply to the transportation of hazardous materials in IM and UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with the abbreviation TP (tank provision) and are assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

* * * * *

Code/Special Provisions

* * * * *

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

$$\left(\text{Degree of filling} = 95\frac{dr}{df}\right).$$

Where: d_f and d_r are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

* * * * *

TP6 The tank must be equipped with a pressure release device which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S–1.2 (see § 171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking

into account the properties of the hazardous material to be transported.

* * * * *

TP32 Portable tanks may be used subject to the following conditions:

a. Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

b. The suitability for transport in tanks must be demonstrated using test 8(d) in Test Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see § 171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

* * * * *

■ 12. In § 172.202, paragraphs (a)(2)(iii) and (a)(5)(i) are revised to read as follows:

§ 172.202 Description of hazardous material on shipping papers.

(a) * * *

(2) * * *

(iii) For domestic shipments, primary and subsidiary hazard class or division names may be entered following the numerical hazard class or division, or following the basic description.

(5) * * *

(i) For Class I materials, the quantity must be the net explosive mass. For an explosive that is an article, such as Cartridges, small arms, the net explosive mass may be expressed in terms of the net mass of either the article or the explosive materials contained in the article.

* * * * *

■ 13. In § 172.203, paragraphs (f), (m)(2) and (o)(3) are revised and a new paragraph (i)(3) is added to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(f) *Transportation by air.* A statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo aircraft only must be entered on the shipping paper.

* * * * *

(i) * * *

(3) For a hazardous material consigned under an ''n.o.s.'' entry not included in the segregation groups listed in section 3.1.4 of the IMDG Code but belonging, in the opinion of the consignor, to one of these groups, the appropriate segregation group must be shown in association with the basic description (for example, IMDG Code segregation group—1 Acids). When no segregation group is applicable, there is no requirement to indicate that condition.

* * * * *

(m) * * *

(2) For materials that are poisonous by inhalation (see § 171.8 of this subchapter), the words ''Poison-Inhalation Hazard'' or ''Toxic-Inhalation Hazard'' and the words ''Zone A'', ''Zone B'', ''Zone C'', or ''Zone D'', for gases or ''Zone A'' or ''Zone B'' for liquids, as appropriate, must be entered on the shipping description. The word ''Poison'' or ''Toxic'' or the phrase ''Poison-Inhalation Hazard'' or ''Toxic Inhalation Hazard'' need not be repeated if it otherwise appears in the shipping description.

* * * * *

(o) * * *

(3) The word ''SAMPLE'' must be included in association with the basic description when a sample of a Division 4.1 (self-reactive) material (see § 173.224(c)(3) of this subchapter) or Division 5.2 (organic peroxide) material (see § 173.225(b)(2) of this subchapter) is offered for transportation.

■ 14. In § 172.204, paragraph (c)(3) is revised to read as follows:

§ 172.204 Shipper's certification.

* * * * *

(c) * * *

(3) *Additional certification requirements.* Effective October 1, 2006, each person who offers a hazardous material for transportation by air must add to the certification required in this section the following statement:

''I declare that all of the applicable air transport requirements have been met.''

(i) Each person who offers any package or overpack of hazardous materials for transport by air must ensure that:

(A) The articles or substances are not prohibited for transport by air (see the § 172.101 Table);

(B) The articles or substances are properly classed, marked and labeled and otherwise in a condition for transport as required by this subchapter;

(C) The articles or substances are packaged in accordance with all the applicable air transport requirements, including appropriate types of packaging that conform to the packing requirements and the ''A'' Special Provisions in § 172.102; inner packaging and maximum quantity per package limits; the compatibility requirements (see, for example, § 173.24 of this subchapter); and requirements for closure for both inner and outer packagings, absorbent materials, and pressure differential in § 173.27 of this subchapter. Other requirements may also apply. For example, single packagings may be prohibited, inner packaging may need to be packed in intermediate packagings, and certain materials may be required to be transported in packagings meeting a more stringent performance level.

(ii) [Reserved]

* * * * *

■ 14a. The introductory text of § 172.315 is revised to read as follows:

§ 172.315 Packages containing limited quantities.

Except for transportation by aircraft or as otherwise provided in this subchapter, a package containing a limited quantity of hazardous materials is not required to be marked with the proper shipping name provided it is marked with the identification (ID) number, preceded by the letters ''UN'' or ''NA,'' as applicable, for the entry as shown in the § 172.101 Table, and placed within a square-on-point border in accordance with the following:

* * * * *

■ 15. A new § 172.317 is added to read as follows:

§ 172.317 KEEP AWAY FROM HEAT handling mark.

(a) *General.* For transportation by aircraft, each package containing self-

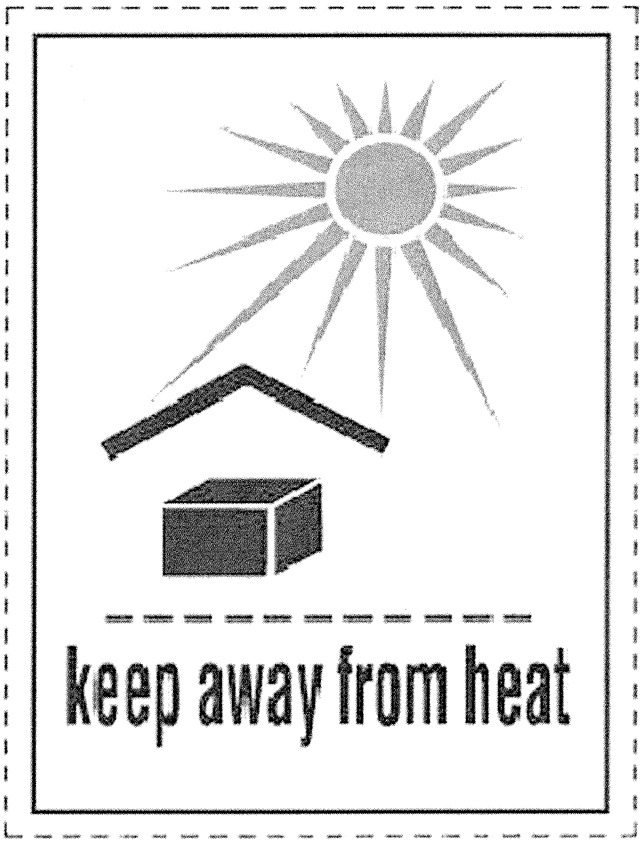
reactive substances of Division 4.1 or organic peroxides of Division 5.2 must be marked with the KEEP AWAY FROM HEAT handling mark specified in this section.

(b) *Location and design.* The marking must be a rectangle measuring at least 105 mm (4.1 inches) in height by 74 mm (2.9 inches) in width. Markings with not less than half this dimension are permissible where the dimensions of the package can only bear a smaller mark.

(c) *KEEP AWAY FROM HEAT handling mark.* The KEEP AWAY FROM HEAT handling mark must conform to the following:

(1) Except for size, the KEEP AWAY FROM HEAT handling mark must appear as follows:

BILLING CODE 4910–60–U



(2) The symbol, letters and border must be black and the background white, except for the starburst which must be red.

(3) The KEEP AWAY FROM HEAT handling marking required by paragraph (a) of this section must be durable, legible and displayed on a background of contrasting color.

§ 172.321 [Removed]

■ 16. Section 172.321 is removed.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

■ 17. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 44701; 49 CFR 1.45, 1.53.

■ 18. In § 173.3, paragraph (c) introductory text is revised to read as follows:

§ 173.3 Packaging and exceptions.

* * * * *

(c) *Salvage drums.* During transportation, as defined in 49 U.S.C. 5102(12), damaged or defective hazardous materials packages, hazardous materials packages that are found not to conform with the requirements of this subchapter, leaking hazardous materials packages, or hazardous materials that have spilled or leaked may be placed for repackaging or disposal in a metal or plastic removable head salvage drum that is compatible with the lading under the following conditions:

* * * * *

■ 19. In § 173.24, paragraphs (g) and (i) are revised to read as follows:

§ 173.24 General requirements for packagings and packages.

* * * * *

(g) *Venting.* Venting of packagings, to reduce internal pressure which may develop by the evolution of gas from the contents, is permitted only when—

(1) Transportation by aircraft is not involved;

(2) Except as otherwise provided in this subchapter, the evolved gases are not poisonous, likely to create a flammable mixture with air or be an asphyxiant under normal conditions of transportation;

(3) The packaging is designed so as to preclude an unintentional release of hazardous materials from the receptacle;

(4) For bulk packagings, other than IBCs, venting is authorized for the specific hazardous material by a special provision in the § 172.101 table or by the applicable bulk packaging specification in part 178 of this subchapter; and

(5) Intermediate bulk packagings (IBCs) may be vented when required to reduce internal pressure that may develop by the evolution of gas subject to the requirements of paragraphs (g)(1) through (g)(3) of this section. The IBC

must be of a type that has successfully passed (with the vent in place) the applicable design qualification tests with no release of hazardous material.

* * * * *

(i) *Air transportation.* Packages offered or intended for transportation by aircraft are subject to requirements additional to those of other modes of transport (*e.g.*, quantity limitations, requirements for absorbent material, pressure differential requirements, appropriate closure procedures, and specific packaging requirements) and must conform to the general requirements for transportation by aircraft in § 173.27.

■ 20. In § 173.25, paragraphs (a)(2) and (a)(4) are revised to read as follows:

§ 173.25 Authorized packagings and overpacks.

(a) * * *

* * * * *

(2) The overpack is marked with the proper shipping name and identification number, when applicable, and is labeled as required by this subchapter for each hazardous material contained therein, unless marking and labels representative of each hazardous material in the overpack are visible.

* * * * *

(4) The overpack is marked with the word ''OVERPACK'' when specification packagings are required, unless specification markings on the inside packages are visible. Alternatively, until October 1, 2007, the overpack may be marked with a statement indicating that the ''inside (inner) packages comply with prescribed specifications.''

* * * * *

■ 21. In § 173.27, paragraph (i) is revised to read as follows:

§ 173.27 General requirements for transportation by aircraft.

* * * * *

(i) Effective October 1, 2006, each person who offers a hazardous material for transportation by aircraft must include the certification statement specified in § 172.204(c)(3).

■ 22. In § 173.28, paragraph (c)(2) introductory text is revised to read as follows:

§ 173.28 Reuse, reconditioning and remanufacture of packagings.

* * * * *

(c) * * *

(2) For the purpose of this subchapter, reconditioning of a non-bulk packaging other than a metal drum includes:

* * * * *

■ 23. In § 173.115, a new paragraph (k) is added to read as follows:

§ 173.115 Class 2, Division 2.1, 2.2 and 2.3—Definitions.

* * * * *

(k) The following applies to aerosols (see § 171.8 of this subchapter):

(1) An aerosol must be assigned to Division 2.1 if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

(2) An aerosol must be assigned to Division 2.2 if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.

(3) Aerosols not meeting the provisions of paragraphs (a) or (b) of this section must be classed in accordance with the appropriate tests of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

(4) Division 2.3 gases may not be transported in an aerosol container.

(5) When the contents are classified as Division 6.1 or Class 8, PG III, the aerosol must be assigned a subsidiary hazard of Division 6.1 or Class 8.

(6) Substances of Division 6.1, PG I or II, and substances of Class 8, PG I are forbidden from transportation in an aerosol container.

(7) Flammable components are Class 3 flammable liquids, Class 4.1 flammable solids, or Division 2.1 flammable gases. The chemical heat of combustion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

■ 24. In § 173.128, paragraph (d)(1) is revised to read as follows:

§ 173.128 Class 5, Division 5.2—Definitions and types.

* * * * *

(d) *Approvals.* (1) An organic peroxide must be approved, in writing, by the Associate Administrator, before being offered for transportation or transported, including assignment of a generic type and shipping description, except for—

(i) An organic peroxide which is identified by technical name in the Organic Peroxides Table in § 173.225(c);

(ii) A mixture of organic peroxides prepared according to § 173.225(b); or

(iii) An organic peroxide which may be shipped as a sample under the provisions of § 173.225(b).

* * * * *

■ 25. In 173.132, paragraph (b)(1) is revised to read as follows:

§ 173.132 Class 6, Division 6.1—Definitions.

* * * * *

(b) * * *

(1) LD_{50} (median lethal dose) for acute oral toxicity is the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50% of young adult albino rats when administered by the oral route. The LD_{50} value is expressed in terms of mass of test substance per mass of test animal (mg/kg).

* * * * *

■ 26. In § 173.136, paragraph (d) is added to read as follows:

§ 173.136 Class 8—Definitions.

* * * * *

(d) Steel or aluminum corrosion test data produced no later than September 30, 2005, using the procedures of § 173.137(c)(2), in effect on September 30, 2004 (see 49 CFR 173.137 revised as of October 1, 2003), for appropriate steel or aluminum types may be used for classification and assignment of packing group for Class 8 materials corrosive to steel or aluminum.

■ 27. In § 173.137, paragraph (c)(2) is revised to read as follows:

§ 173.137 Class 8—Assignment of packing group.

* * * * *

(c) * * *

* * * * *

(2) That do not cause full thickness destruction of intact skin tissue but exhibit a corrosion on steel or aluminum surfaces exceeding 6.25 mm (0.25 inch) a year at a test temperature of 55 °C (130 °F). The corrosion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

■ 28. In § 173.150, paragraph (a), the introductory text of paragraph (b), paragraph (b)(2) and paragraph (c) are revised to read as follows:

§ 173.150 Exceptions for Class 3 (flammable) and combustible liquids.

(a) *General.* Exceptions for hazardous materials shipments in the following paragraphs are permitted only if this section is referenced for the specific hazardous material in the § 172.101 Table of this subchapter.

(b) *Limited quantities.* Limited quantities of flammable liquids (Class 3) and combustible liquids are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging

requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

(2) For flammable liquids in Packing Group II, inner packagings not over 1.0 L (0.3 gallons) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) net capacity each, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section and is a ''consumer commodity'' as defined in 171.8 of this subchapter, may be renamed ''Consumer commodity'' and reclassed as ORM–D material. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM–D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

■ 29. In 173.151, paragraphs (b) and (c), and the introductory text of paragraph (d) are revised to read as follows:

§ 173.151 Exceptions for Class 4.

* * * * *

(b) *Limited quantities of Division 4.1.* Limited quantities of flammable solids (Division 4.1) in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For flammable solids in Packing Group II, inner packagings not over 1.0 kg (2.2 pounds) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 0.5 kg (1.1 pounds) net capacity each, packed in a strong outer packaging.

(2) For flammable solids in Packing Group III, inner packagings not over 5.0 kg (11 pounds) net capacity each, packed in a strong outer packaging.

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and charcoal briquettes in packagings not exceeding 30 kg (66 pounds) gross weight, may be renamed ''Consumer commodity'' and reclassed as ORM–D material if the material is a ''consumer commodity'' as defined in 171.8 of this subchapter. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM–D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

(d) *Limited quantities of Division 4.3.* Limited quantities of dangerous when wet (Division 4.3) solids in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

■ 30. In § 173.152, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.152 Exceptions for Division 5.1 (oxidizers) and Division 5.2 (organic peroxides).

* * * * *

(b) *Limited quantities.* Limited quantities of oxidizers (Division 5.1) in Packing Group II and III and organic peroxides are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For oxidizers in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a ''consumer commodity'' as defined in § 171.8 of this subchapter, may be renamed ''Consumer commodity'' and reclassed as ORM–D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM–D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

■ 31. In § 173.153, paragraph (b), and paragraph (c)(1) are revised to read as follows:

§ 173.153 Exceptions for Division 6.1 (poisonous materials).

* * * * *

(b) *Limited quantities.* The exceptions in this paragraph do not apply to poison-by-inhalation materials. Limited quantities of poisonous materials (Division 6.1) in Packing Group II and III are excepted from the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight.

The following combination packagings are authorized:

(1) For poisonous materials in Packing Group II, inner packagings not over 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids, packed in a strong outer packaging.

(2) For poisonous materials in Packing Group III, inner packagings not over 4 L (1.0 gallon) each for liquids or 5.0 kg (11 pounds) each for solids, packed in a strong outer packaging.

(c) * * *

(1) A limited quantity of poisonous material in Packing Group III which conforms to the provisions of paragraph (b) of this section, and is a ''consumer commodity'' as defined in § 171.8 of this subchapter, may be renamed ''Consumer commodity'' and reclassed as ORM–D.

* * * * *

■ 32. In § 173.154, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.154 Exceptions for Class 8 (corrosive materials).

* * * * *

(b) *Limited quantities.* Limited quantities of corrosive materials (Class 8) in Packing Group II and III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For corrosive materials in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a ''consumer commodity'' as defined in § 171.8 of this subchapter, may be renamed ''Consumer commodity'' and reclassed as ORM–D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM–D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

■ 33. In § 173.185, paragraphs (c)(3) and (e)(6) are revised to read as follows:

§ 173.185 Lithium batteries and cells.

* * * * *

(c) * * *

(3) Each cell or battery is of the type proven to be non-dangerous by testing in accordance with Tests in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). Such testing must be carried out on each type of cell or battery prior to the initial transport of that type. A cell or battery and equipment containing a cell or battery which was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested;

* * * * *

(e) * * *

(6) Each cell or battery is of the type proven to meet the lithium battery requirements in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). A cell or battery and equipment containing a cell or battery which was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested.

* * * * *

■ 34. In § 173.186, paragraph (e) is revised to read as follows:

§ 173.186 Matches.

* * * * *

(e) Packagings. Strike-anywhere matches must be tightly packed in securely closed chipboard, fiberboard, wooden, or metal inner packagings to prevent accidental ignition under conditions normally incident to transportation. Each inner packaging may contain no more than 700 strike-anywhere matches and must be packed in outer steel drums (1A2), aluminum drums (1B2), steel jerricans (3A2), wooden (4C1, 4C2), plywood (4D), reconstituted wood (4F) or fiberboard (4G) boxes, plywood (1D) or fiber (1G) drums. Gross weight of fiberboard boxes (4G) must not exceed 30 kg (66 pounds). Gross weight of other outer packagings must not exceed 45 kg (100 pounds).

■ 35. In § 173.187, a new paragraph (f) is added to read as follows:

§ 173.187 Pyrophoric solids, metals or alloys, n.o.s.

* * * * *

(f) In specification cylinders, as prescribed for any compressed gas, except for Specifications 8 and 3HT.

■ 36. In § 173.211, paragraph (c) is revised to read as follows:

§ 173.211 Non-bulk packagings for solid hazardous materials in Packing Group I.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
Aluminum drum: 1B1 or 1B2
Metal drum other than steel or aluminum: 1N1 or 1N2
Plastic drum: 1H1 or 1H2
Fiber drum: 1G
Steel jerrican: 3A1 or 3A2
Plastic jerrican: 3H1 or 3H2
Aluminum jerrican: 3B1 or 3B2
Steel box with liner: 4A
Aluminum box with liner: 4B
Natural wood box, sift proof: 4C2
Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB2, 6PC or 6PG2
Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 37. In § 173.212, paragraph (c) is revised to read as follows:

§ 173.212 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
Aluminum drum: 1B1 or 1B2
Plywood drum: 1D
Plastic drum: 1H1 or 1H2
Fiber drum: 1G
Metal drum other than steel or aluminum: 1N1 or 1N2

Wooden barrel: 2C1 or 2C2
Steel jerrican: 3A1 or 3A2
Plastic jerrican: 3H1 or 3H2
Aluminum jerrican: 3B1 or 3B2
Steel box: 4A
Steel box with liner: 4A
Aluminum box: 4B
Aluminum box with liner: 4B
Natural wood box: 4C1
Natural wood box, sift proof: 4C2
Plywood box: 4D
Reconstituted wood box: 4F
Fiberboard box: 4G
Expanded plastic box: 4H1
Solid plastic box: 4H2
Bag, woven plastic: 5H1, 5H2 or 5H3
Bag, plastic film: 5H4
Bag, textile: 5L1, 5L2 or 5L3
Bag, paper, multiwall, water resistant: 5M2
Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
Plastic receptacle in steel, aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 38. In § 173.213, paragraph (c) is revised to read as follows:

§ 173.213 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) The following single packagings are authorized:

Steel drum: 1A1 or 1A2
Aluminum drum: 1B1 or 1B2
Plywood drum: 1D
Plastic drum: 1H1 or 1H2
Fiber drum: 1G
Metal drum other than steel or aluminum: 1N1 or 1N2
Wooden barrel: 2C1 or 2C2
Steel jerrican: 3A1 or 3A2
Plastic jerrican: 3H1 or 3H2
Aluminum jerrican: 3B1 or 3B2
Steel box: 4A
Steel box with liner: 4A
Aluminum box: 4B
Aluminum box with liner: 4B
Natural wood box: 4C1
Natural wood box, sift proof: 4C2
Plywood box: 4D
Reconstituted wood box: 4F
Fiberboard box: 4G
Expanded plastic box: 4H1
Solid plastic box: 4H2
Bag, woven plastic: 5H1, 5H2 or 5H3
Bag, plastic film: 5H4
Bag, textile: 5L1, 5L2 or 5L3
Bag, paper, multiwall, water resistant: 5M2
Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
Plastic receptacle in steel, aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 39. Section 173.219 is revised to read as follows:

§ 173.219 Life-saving appliances.

(a) A life-saving appliance, self-inflating or non-self-inflating, containing small quantities of hazardous materials that are required as part of the life-saving appliance must conform to the requirements of this section. Packagings must conform to the general packaging requirements of subpart B of this part but need not conform to the requirements of part 178 of this subchapter. The appliances must be packed, so that they cannot be accidentally activated and, except for life vests, the hazardous materials must be in inner packagings packed so as to prevent movement. The hazardous materials must be an integral part of the appliance and in quantities that do not exceed those appropriate for the actual appliance when in use.

(b) Life saving appliances may contain:

(1) Division 2.2 compressed gases, including oxygen. However, oxygen generators are not permitted;

(2) Signal devices (Class 1), which may include smoke and illumination signal flares;

(3) Electric storage batteries and lithium batteries (Life saving appliances containing lithium batteries must be transported in accordance with § 173.185.);

(4) First aid or repair kits conforming to the applicable material and quantity limitations of § 173.161 of this subchapter;

(5) Strike-anywhere matches;

(6) For self-inflating life saving appliances only, cartridges power device of Division 1.4S, for purposes of the self-inflating mechanism provided that the quantity of explosives per appliance does not exceed 3.2 g; or

(7) Limited quantities of other hazardous materials.

(c) Hazardous materials in life saving appliances must be packaged as follows:

(1) Division 2.2 compressed gases must be packaged in cylinders in accordance with the requirements of this subchapter;

(2) Signal devices (Class 1) must be in packagings that prevent them from being inadvertently activated;

(3) Strike-anywhere matches must be cushioned to prevent movement or friction in a metal or composition receptacle with a screw-type closure in a manner that prevents them from being inadvertently activated;

(4) Limited quantities of other hazardous materials must be packaged in accordance with the requirements of this subchapter; and

(5) For other than transportation by aircraft, life saving appliances containing no hazardous materials other than carbon dioxide cylinders with a capacity not exceeding 100 cm^3 are not subject to the provisions of this subchapter provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg.

■ 40. In § 173.220, paragraph (b)(2) is revised to read as follows:

§ 173.220 Internal combustion engines, self-propelled vehicles, mechanical equipment containing internal combustion engines, and battery powered vehicles or equipment.

* * * * *

(b) * * *

(2) *Flammable liquefied or compressed gas fuel.* (i) For transportation by motor vehicle, rail car or vessel, fuel tanks and fuel systems containing flammable liquefied or compressed gas fuel must be securely closed. For transportation by vessel, the requirements of §§ 176.78(k) and 176.905 of this subchapter apply.

(ii) For transportation by aircraft:

(A) Flammable gas-powered vehicles, machines, equipment or cylinders containing the flammable gas must be completely emptied of flammable gas. Lines from vessels to gas regulators, and gas regulators themselves, must also be drained of all traces of flammable gas. To ensure that these conditions are met, gas shut-off valves must be left open and connections of lines to gas regulators must be left disconnected upon delivery of the vehicle to the operator. Shut-off valves must be closed and lines reconnected at gas regulators before loading the vehicle aboard the aircraft; or alternatively

(B) Flammable gas powered vehicles, machines or equipment, which have

cylinders (fuel tanks) that are equipped with electrically operated valves, may be transported under the following conditions:

(1) The valves must be in the closed position and in the case of electrically operated valves, power to those valves must be disconnected;

(2) After closing the valves, the vehicle, equipment or machinery must be operated until it stops from lack of fuel before being loaded aboard the aircraft;

(3) In no part of the system between the pressure receptacle and the shut off valve shall the pressure exceed more than 5% of the maximum allowable working pressure of the system; and

(4) There must not be any residual liquefied gas in the system, including the fuel tank.

■ 41. In § 173.224, paragraph (b)(4) is revised to read as follows:

§ 173.224 Packaging and control and emergency temperatures for self-reactive materials.

* * * * *

(b) * * *

(4) *Packing method.* Column 4 specifies the highest packing method which is authorized for the self-reactive material. A packing method corresponding to a smaller package size may be used, but a packing method corresponding to a larger package size may not be used. The Table of Packing Methods in § 173.225(d) defines the packing methods. Bulk packagings for Type F self-reactive substances are authorized by § 173.225(f) for IBCs and § 173.225(h) for bulk packagings other than IBCs. Additional bulk packagings are authorized if approved by the Associate Administrator.

* * * * *

■ 42. Section 173.225 is revised to read as follows:

§ 173.225 Packaging requirements and other provisions for organic peroxides.

(a) *General.* When the § 172.101 table specifies that an organic peroxide must be packaged under this section, the organic peroxide must be packaged and offered for transportation in accordance with the provisions of this section. Each packaging must conform to the general requirements of subpart B of part 173 and to the applicable requirements of part 178 of this subchapter. Non-bulk packagings must meet Packing Group II performance levels. To avoid unnecessary confinement, metallic non-bulk packagings meeting Packing Group I are not authorized. No used material, other than production residues or regrind from the same production process, may be used in plastic packagings. Organic peroxides that require temperature control are subject to the provisions of § 173.21(f). When an IBC or bulk packaging is authorized and meets the requirements of paragraph (f) or (h) of this section, respectively, lower control temperatures than those specified for non-bulk packaging may be required. An organic peroxide not identified in paragraph (c), (e), or (g) of this section by technical name, or not assigned to a generic type in accordance with the provisions in paragraph (b)(3) of this section, must conform to the provisions of paragraph (c) of § 173.128.

(b) *New organic peroxides, formulations and samples.* (1) Except as provided for samples in paragraph (b)(2) of this section, no person may offer for transportation an organic peroxide that is not identified by technical name in the Organic Peroxides Table, Organic Peroxide IBC Table, or the Organic Peroxide Portable Tank Table of this section, or a formulation of one or more organic peroxides that are identified by technical name in one of those tables, unless the organic peroxide is assigned a generic type and shipping description and is approved by the Associate Administrator under the provisions of § 173.128(d) of this subchapter.

(2) *Samples.* Samples of new organic peroxides or new formulations of organic peroxides identified in the Organic Peroxides Table in paragraph (c) of this section, for which complete test data are not available, and that are to be transported for further testing or product evaluation, may be assigned an appropriate shipping description for organic peroxide Type C, packaged and offered for transportation, under the following conditions:

(i) Data available to the person offering the material for transportation must indicate that the sample would pose a level of hazard no greater than that of an organic peroxide Type B and that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation;

(ii) The sample must be packaged in accordance with packing method OP2, for a liquid or solid, respectively;

(iii) Packages of the organic peroxide may be offered for transportation and transported in a quantity not to exceed 10 kg (22 pounds) per transport vehicle; and

(iv) One of the following shipping descriptions must be assigned:

(A) Organic peroxide Type C, liquid, 5.2, UN 3103;

(B) Organic peroxide Type C, solid, 5.2, UN 3104;

(C) Organic peroxide Type C, liquid, temperature controlled, 5.2, UN 3113; or

(D) Organic peroxide Type C, solid, temperature controlled, 5.2, UN 3114.

(3) *Mixtures.* Mixtures of organic peroxides individually identified in the Organic Peroxides Table in paragraph (c) of this section may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions for transportation given for this type. If the stable components form a thermally less stable mixture, the SADT of the mixture must be determined and the new control and emergency temperature derived under the provisions of § 173.21(f).

(c) *Organic peroxides table.* The following Organic Peroxides Table specifies by technical name those organic peroxides that are authorized for transportation and not subject to the approval provisions of § 173.128 of this part. An organic peroxide identified by technical name in the following table is authorized for transportation only if it conforms to all applicable provisions of the table. The column headings of the Organic Peroxides Table are as follows:

(1) *Technical name.* The first column specifies the technical name.

(2) *ID number.* The second column specifies the identification (ID) number which is used to identify the proper shipping name in the § 172.101 table. The word ''EXEMPT'' appearing in the column denotes that the material is not regulated as an organic peroxide.

(3) *Concentration of organic peroxide.* The third column specifies concentration (mass percent) limitations, if any, in mixtures or solutions for the organic peroxide. Limitations are given as minimums, maximums, or a range, as appropriate. A range includes the lower and upper limits (*i.e.*, ''53–100'' means from, and including, 53% to, and including 100%). See introductory paragraph of § 172.203(k) of this subchapter for additional description requirements for an organic peroxide that may qualify for more than one generic listing, depending on its concentration.

(4) *Concentration of diluents.* The fourth column specifies the type and concentration (mass percent) of diluent or inert solid, when required. Other types and concentrations of diluents may be used if approved by the Associate Administrator.

(i) The required mass percent of ''Diluent type A'' is specified in column 4a. A diluent type A is an organic liquid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide and with a boiling point not less than 150 °C at

atmospheric pressure. Type A diluents may be used for desensitizing all organic peroxides.

(ii) The required mass percent of ''Diluent type B'' is specified in column 4b. A diluent type B is an organic liquid which is compatible with the organic peroxide and which has a boiling point, at atmospheric pressure, of less than 150 °C (302 °F) but at least 60 °C (140 °F), and a flash point greater than 5 °C (41 °F). Type B diluents may be used for desensitizing all organic peroxides, when specified in the organic peroxide tables, provided that the boiling point is at least 60 °C (140 °F) above the SADT of the peroxide in a 50 kg (110 lbs) package. A type A diluent may be used to replace a type B diluent in equal concentration.

(iii) The required mass percent of ''Inert solid'' is specified in column 4c. An inert solid is a solid that does not detrimentally affect the thermal stability or hazard of the organic peroxide.

(5) *Concentration of water.* Column 5 specifies, in mass percent, the minimum amount of water, if any, which must be in formulation.

(6) *Packing method.* Column 6 specifies the highest packing method (largest packaging capacity) authorized for the organic peroxide. Lower numbered packing methods (smaller packaging capacities) are also authorized. For example, if OP3 is specified, then OP2 and OP1 are also authorized. The Table of Packing Methods in paragraph (d) of this section defines the non-bulk packing methods.

(7) *Temperatures.* Column 7a specifies the control temperature. Column 7b specifies the emergency temperature. Temperatures are specified only when temperature controls are required. (See § 173.21(f)).

(8) *Notes.* Column 8 specifies other applicable provisions, as set forth in notes following the table.

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ORGANIC PEROXIDE TABLE

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Acetyl acetone peroxide	UN3105	≤42	≥48			≥8	OP7			2
Acetyl acetone peroxide [as a paste].	UN3106	≤32					OP7			21
Acetyl cyclohexanesulfonyl peroxide.	UN3112	≤82				≥12	OP4	−10	0	
Acetyl cyclohexanesulfonyl peroxide.	UN3115	≤32		≥68			OP7	−10	0	
tert-Amyl hydroperoxide	UN3107	≤88	≥6			≥6	OP8			
tert-Amyl peroxyacetate	UN3105	≤62	≥38				OP7			
tert-Amyl peroxybenzoate	UN3103	≤100					OP5			
tert-Amyl peroxy-2-ethylhexanoate.	UN3115	≤100					OP7	+20	+25	
tert-Amyl peroxy-2-ethylhexyl carbonate.	UN3105	≤100					OP7			
tert-Amyl peroxy isopropyl carbonate.	UN3103	≤77	≥23				OP5			
tert-Amyl peroxyneodecanoate.	UN3115	≤77		≥23			OP7	0	+10	
tert-Amyl peroxypivalate	UN3113	≤77		≥23			OP5	+10	+15	
tert-Amyl peroxy-3,5,5-trimethylhexanoate.	UN3101	≤100					OP5			
tert-Butyl cumyl peroxide	UN3107	>42–100					OP8			9
tert-Butyl cumyl peroxide	UN3108	≤52			≥48		OP8			9
n-Butyl-4,4-di-(tert-butylperoxy)valerate.	UN3103	>52–100					OP5			
n-Butyl-4,4-di-(tert-butylperoxy)valerate.	UN3108	≤52			≥48		OP8			
tert-Butyl hydroperoxide	UN3103	>79–90				≥10	OP5			13
tert-Butyl hydroperoxide	UN3105	≤80	≥20				OP7			4, 13
tert-Butyl hydroperoxide	UN3107	≤79				>14	OP8			13, 16
tert-Butyl hydroperoxide	UN3109	≤72				≥28	OP8			13
tert-Butyl hydroperoxide [and] Di-tert-butylperoxide.	UN3103	<82+>9				≥7	OP5			13
tert-Butyl monoperoxymaleate.	UN3102	>52–100					OP5			
tert-Butyl monoperoxymaleate.	UN3103	≤52	≥48				OP6			
tert-Butyl monoperoxymaleate.	UN3108	≤52			≥48		OP8			
tert-Butyl monoperoxymaleate [as a paste].	UN3108	≤52					OP8			
tert-Butyl peroxyacetate	UN3101	>52–77	≥23				OP5			
tert-Butyl peroxyacetate	UN3103	>32–52	≥48				OP6			
tert-Butyl peroxyacetate	UN3109	≤32		≥68			OP8			
tert-Butyl peroxybenzoate	UN3103	>77–100					OP5			

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
tert-Butyl peroxybenzoate	UN3105	>52–77	≥23				OP7			1
tert-Butyl peroxybenzoate	UN3106	≤52			≥48		OP7			
tert-Butyl peroxybutyl fumarate.	UN3105	≤52	≥48				OP7			
tert-Butyl peroxycrotonate	UN3105	≤77	≥23				OP7			
tert-Butyl peroxydiethylacetate.	UN3113	≤100					OP5	+20	+25	
tert-Butyl peroxy-2-ethylhexanoate.	UN3113	>52–100					OP6	+20	+25	
tert-Butyl peroxy-2-ethylhexanoate.	UN3117	>32–52		≥48			OP8	+30	+35	
tert-Butyl peroxy-2-ethylhexanoate.	UN3118	≤52			≥48		OP8	+20	+25	
tert-Butyl peroxy-2-ethylhexanoate.	UN3119	≤32		≥68			OP8	+40	+45	
tert-Butyl peroxy-2-ethylhexanoate [and] 2,2-di-(tert-Butylperoxy)butane.	UN3106	≤12+≤14	≥14		≥60		OP7			
tert-Butyl peroxy-2-ethylhexanoate [and] 2,2-di-(tert-Butylperoxy)butane.	UN3115	≤31+≤36		≥33			OP7	+35	+40	
tert-Butyl peroxy-2-ethylhexylcarbonate.	UN3105	≤100					OP7			
tert-Butyl peroxyisobutyrate.	UN3111	>52–77		≥23			OP5	+15	+20	
tert-Butyl peroxyisobutyrate.	UN3115	≤52		≥48			OP7	+15	+20	
tert-Butylperoxy isopropylcarbonate.	UN3103	≤77	≥23				OP5			
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene.	UN3105	≤77	≥23				OP7			
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene.	UN3108	≤42			≥58		OP8			
tert-Butyl peroxy-2-methylbenzoate.	UN3103	≤100					OP5			
tert-Butyl peroxyneodecanoate.	UN3115	>77–100					OP7	−5	+5	
tert-Butyl peroxyneodecanoate.	UN3115	≤77		≥23			OP7	0	+10	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52					OP8	0	+10	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water (frozen)].	UN3118	≤42					OP8	0	+10	
tert-Butyl peroxyneodecanoate.	UN3119	≤32	≥68				OP8	0	+10	
tert-Butyl peroxyneoheptanoate.	UN3115	≤77	≥23				OP7	0	+10	
tert-Butyl peroxyneoheptanoate [as a stable dispersion in water].	UN3117	≤42					OP8	0	+10	
tert-Butyl peroxypivalate	UN3113	>67–77	≥23				OP5	0	+10	
tert-Butyl peroxypivalate	UN3115	>27–67		≥33			OP7	0	+10	
tert-Butyl peroxypivalate	UN3119	≤27		≥73			OP8	+30	+35	
tert-Butylperoxy stearylcarbonate.	UN3106	≤100					OP7			
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3105	>32–100					OP7			

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3109	≤32		≥68			OP8			
3-Chloroperoxybenzoic acid.	UN3102	>57–86			≥14		OP1			
3-Chloroperoxybenzoic acid.	UN3106	≤57			≥3	≥40	OP7			
3-Chloroperoxybenzoic acid.	UN3106	≤77			≥6	≥17	OP7			
Cumyl hydroperoxide	UN3107	>90–98	≤10				OP8			13
Cumyl hydroperoxide	UN3109	≤90	≥10				OP8			13, 15
Cumyl peroxyneodecanoate.	UN3115	≤77		≥23			OP7	−10	0	
Cumyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52					OP8	−10	0	
Cumyl peroxyneoheptanoate.	UN3115	≤77	≥23				OP7	−10	0	
Cumyl peroxypivalate	UN3115	≤77		≥23			OP7	−5	+5	
Cyclohexanone peroxide(s).	UN3104	≤91				≥9	OP6			13
Cyclohexanone peroxide(s).	UN3105	≤72	≥28				OP7			5
Cyclohexanone peroxide(s) [as a paste].	UN3106	≤72					OP7			5, 21
Cyclohexanone peroxide(s).	Exempt	≤32			≥68		Exempt			
Diacetone alcohol peroxides.	UN3115	≤57		≥26		≥8	OP7	+40	+45	5
Diacetyl peroxide	UN3115	≤27		≥73			OP7	+20	+25	8,13
Di-tert-amyl peroxide	UN3107	≤100					OP8			
1,1-Di-(tert-amylperoxy)cyclohexane.	UN3103	≤82	≥18				OP6			
Dibenzoyl peroxide	UN3102	>51–100			≤48		OP2			3
Dibenzoyl peroxide	UN3102	>77–94				≥6	OP4			3
Dibenzoyl peroxide	UN3104	≤77				≥23	OP6			
Dibenzoyl peroxide	UN3106	≤62			≥28	≥10	OP7			
Dibenzoyl peroxide [as a paste].	UN3106	>52–62					OP7			21
Dibenzoyl peroxide	UN3106	>35–52			≥48		OP7			
Dibenzoyl peroxide	UN3107	>36–42	≥18			≤40	OP8			
Dibenzoyl peroxide [as a paste].	UN3108	≤56.5				≥15	OP8			
Dibenzoyl peroxide [as a paste].	UN3108	≤52					OP8			21
Dibenzoyl peroxide [as a stable dispersion in water].	UN3109	≤42					OP8			
Dibenzoyl peroxide	Exempt	≤35			≥65		Exempt			
Di-(4-tert-butylcyclohexyl)peroxydicarbonate.	UN3114	≤100					OP6	+30	+35	
Di-(4-tert-butylcyclohexyl)peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42					OP8	+30	+35	
Di-tert-butyl peroxide	UN3107	>52–100					OP8			
Di-tert-butyl peroxide	UN3109	≤52		≥48			OP8			24
Di-tert-butyl peroxyazelate	UN3105	≤52	≥48				OP7			
2,2-Di-(tert-butylperoxy)butane.	UN3103	≤52	≥48				OP6			
1,6-Di-(tert-butylperoxycarbonyloxy)hexane.	UN3103	≤72	≥28				OP5			

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3101	>80–100					OP5			
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3103	>52–80	≥20				OP5			
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3105	>42–52	≥48				OP7			
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3106	≤42	≥13		≥45		OP7			
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3107	≤27	≥25				OP8			22
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤42	≥58				OP8			
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤25	≥25	≥50			OP8			29
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤13	≥13	≥74			OP8			
Di-n-butyl peroxydicarbonate.	UN3115	>27–52		≥48			OP7	−15	−5	
Di-n-butyl peroxydicarbonate.	UN3117	≤27		≥73			OP8	−10	0	
Di-n-butyl peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3118	≤42					OP8	−15	−5	
Di-sec-butyl peroxydicarbonate.	UN3113	>52–100					OP4	−20	−10	6
Di-sec-butyl peroxydicarbonate.	UN3115	≤52		≥48			OP7	−15	−5	
Di-(2-tert-butylperoxyisopropyl)benzene(s).	UN3106	>42–100			≤57		OP7			1, 9
Di-(2-tert-butylperoxyisopropyl)benzene(s).	Exempt	≤42			≥58		Exempt			
Di-(tert-butylperoxy)phthalate.	UN3105	>42–52	≥48				OP7			
Di-(tert-butylperoxy)phthalate [as a paste].	UN3106	≤52					OP7			21
Di-(tert-butylperoxy)phthalate.	UN3107	≤42	≥58				OP8			
2,2-Di-(tert-butylperoxy)propane.	UN3105	≤52	≥48				OP7			
2,2-Di-(tert-butylperoxy)propane.	UN3106	≤42	≥13		≥45		OP7			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3101	>90–100					OP5			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	>57–90	≥10				OP5			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	≤77		≥23			OP5			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3110	≤57			≥43		OP8			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤57	≥43				OP8			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤32	≥26	≥42			OP8			
Dicetyl peroxydicarbonate	UN3116	≤100					OP7	+30	+35	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Dicetyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42	.....	.....	.....	.....	OP8	+30	+35	
Di-4-chlorobenzoyl peroxide.	UN3102	≤77	.....	.....	.....	≥23	OP5	.....	.....	
Di-4-chlorobenzoyl peroxide [as a paste].	UN3106	≤52	.....	.....	.....	.....	OP7	.....	.....	21
Di-4-chlorobenzoyl peroxide.	Exempt	≤32	.....	.....	≥68	.....	Exempt	.....	.....	
Dicumyl peroxide	UN3110	>52–100	.....	.....	≤48	.....	OP8	.....	.....	
Dicumyl peroxide	Exempt	≤52	.....	.....	≥48	.....	Exempt	.....	.....	
Dicyclohexyl peroxydicarbonate.	UN3112	>91–100	.....	.....	.....	.....	OP3	+10	+15	
Dicyclohexyl peroxydicarbonate.	UN3114	≤91	.....	.....	.....	≥9	OP5	+10	+15	
Dicyclohexyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42	.....	.....	.....	.....	OP8	+15	+20	
Didecanoyl peroxide	UN3114	≤100	.....	.....	.....	.....	OP6	+30	+35	
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3106	≤42	.....	.....	≥58	.....	OP7	.....	.....	
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3107	≤22	.....	≥78	.....	.....	OP8	.....	.....	
Di-2,4-dichlorobenzoyl peroxide.	UN3102	≤77	.....	.....	.....	≥23	OP5	.....	.....	
Di-2,4-dichlorobenzoyl peroxide [as a paste with silicone oil].	UN3106	≤52	.....	.....	.....	.....	OP7	.....	.....	
Di-(2-ethoxyethyl) peroxydicarbonate.	UN3115	≤52	.....	≥48	.....	.....	OP7	−10	0	
Di-(2-ethylhexyl) peroxydicarbonate.	UN3113	>77–100	.....	.....	.....	.....	OP5	−20	−10	
Di-(2-ethylhexyl) peroxydicarbonate.	UN3115	≤77	.....	≥23	.....	.....	OP7	−15	−5	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3117	≤62	.....	.....	.....	.....	OP8	−15	−5	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3119	≤52	.....	.....	.....	.....	OP8	−15	−5	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3120	≤52	.....	.....	.....	.....	OP8	−15	−5	
2,2-Dihydroperoxypropane	UN3102	≤27	.....	.....	≥73	.....	OP5	.....	.....	
Di-(1-hydroxycyclohexyl)peroxide.	UN3106	≤100	.....	.....	.....	.....	OP7	.....	.....	
Diisobutyryl peroxide	UN3111	>32–52	.....	≥48	.....	.....	OP5	−20	−10	
Diisobutyryl peroxide	UN3115	≤32	.....	≥68	.....	.....	OP7	−20	−10	
Diisopropylbenzene dihydroperoxide.	UN3106	≤82	≥5	.....	.....	≥5	OP7	.....	.....	17
Diisopropyl peroxydicarbonate.	UN3112	>52–100	.....	.....	.....	.....	OP2	−15	−5	
Diisopropyl peroxydicarbonate.	UN3115	≤52	.....	≥48	.....	.....	OP7	−20	−10	
Diisopropyl peroxydicarbonate.	UN3115	≤28	≥72	.....	.....	.....	OP7	−15	−5	
Dilauroyl peroxide	UN3106	≤100	.....	.....	.....	.....	OP7	.....	.....	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Dilauroyl peroxide [as a stable dispersion in water].	UN3109	≤42	.....	.....	.....	.....	OP8	.....	.....	
Di-(3-methoxybutyl) peroxydicarbonate.	UN3115	≤52	.....	≥48	.....	.....	OP7	−5	+5	
Di-(2-methylbenzoyl)peroxide.	UN3112	≤87	.....	.....	.....	≥13	OP5	+30	+35	
Di-(4-methylbenzoyl)peroxide [as a paste with silicone oil].	UN3106	≤52	.....	.....	.....	.....	OP7	.....	.....	
Di-(3-methylbenzoyl) peroxide + Benzoyl (3-methylbenzoyl) peroxide + Dibenzoyl peroxide.	UN3115	≤20+≤18+≤4	.....	≥58	.....	.....	OP7	+35	+40	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3102	>82–100	.....	.....	.....	.....	OP5	.....	.....	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3106	≤82	.....	.....	≥18	.....	OP7	.....	.....	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3104	≤82	.....	.....	.....	≥18	OP5	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3105	>52–100	.....	.....	.....	.....	OP7	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3108	≤77	.....	.....	≥23	.....	OP8	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3109	≤52	≥48	.....	.....	.....	OP8	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane [as a paste].	UN3108	≤47	.....	.....	.....	.....	OP8	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3101	>86–100	.....	.....	.....	.....	OP5	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3103	>52–86	≥14	.....	.....	.....	OP5	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3106	≤52	.....	.....	≥48	.....	OP7	.....	.....	
2,5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane.	UN3113	≤100	.....	.....	.....	.....	OP5	+20	+25	
2,5-Dimethyl-2,5-dihydroperoxyhexane.	UN3104	≤82	.....	.....	.....	≥18	OP6	.....	.....	
2,5-Dimethyl-2,5-di-(3,5,5-trimethylhexanoylperoxy)hexane.	UN3105	≤77	≥23	.....	.....	.....	OP7	.....	.....	
1,1-Dimethyl-3-hydroxybutylperoxyneoheptanoate.	UN3117	≤52	≥48	.....	.....	.....	OP8	0	+10	
Dimyristyl peroxydicarbonate.	UN3116	≤100	.....	.....	.....	.....	OP7	+20	+25	
Dimyristyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42	.....	.....	.....	.....	OP8	+20	+25	
Di-(2-neodecanoylperoxyisopropyl)benzene.	UN3115	≤52	≥48	.....	.....	.....	OP7	−10	0	
Di-n-nonanoyl peroxide	UN3116	≤100	.....	.....	.....	.....	OP7	0	+10	
Di-n-octanoyl peroxide	UN3114	≤100	.....	.....	.....	.....	OP5	+10	+15	
Di-(2-phenoxyethyl)peroxydicarbonate.	UN3102	>85–100	.....	.....	.....	.....	OP5	.....	.....	
Di-(2-phenoxyethyl)peroxydicarbonate.	UN3106	≤85	.....	.....	.....	≥15	OP7	.....	.....	
Dipropionyl peroxide	UN3117	≤27	.....	≥73	.....	.....	OP8	+15	+20	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Di-n-propyl peroxydicarbonate.	UN3113	≤100	.....	.....	.....	.....	OP3	−25	−15	
Di-n-propyl peroxydicarbonate.	UN3113	≤77	.....	≥23	.....	.....	OP5	−20	−10	
Disuccinic acid peroxide	UN3102	>72–100	.....	.....	.....	.....	OP4	.....	.....	18
Disuccinic acid peroxide	UN3116	≤72	.....	.....	.....	≥28	OP7	+10	+15	
Di-(3,5,5-trimethylhexanoyl)peroxide.	UN3115	>38–82	≥18	.....	.....	.....	OP7	0	+10	
Di-(3,5,5-trimethylhexanoyl)peroxide [as a stable dispersion in water].	UN3119	≤52	.....	.....	.....	.....	OP8	+10	+15	
Di-(3,5,5-trimethylhexanoyl)peroxide.	UN3119	≤38	≥62	.....	.....	.....	OP8	+20	+25	
Ethyl 3,3-di-(tert-amylperoxy)butyrate.	UN3105	≤67	≥33	.....	.....	.....	OP7	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3103	>77–100	.....	.....	.....	.....	OP5	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3105	≤77	≥23	.....	.....	.....	OP7	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3106	≤52	.....	.....	≥48	.....	OP7	.....	.....	
1-(2-ethylhexanoylperoxy)-1,3-Dimethylbutyl peroxypivalate.	UN3115	≤52	≥45	≥10	.....	.....	OP7	−20	−10	
tert-Hexyl peroxyneodecanoate.	UN3115	≤71	≥29	.....	.....	.....	OP7	0	+10	
tert-Hexyl peroxypivalate	UN3115	≤72	.....	≥28	.....	.....	OP7	+10	+15	
Isopropyl sec-butyl peroxydicarbonat +Di-sec-butyl peroxydicarbonate+Di-isopropyl peroxydicarbonate.	UN3111	≤52+≤28+≤22	.....	.....	.....	.....	OP5	−20	−10	
Isopropyl sec-butyl peroxydicarbonate+Di-sec-butyl peroxydicarbonate+Di-isopropyl peroxydicarbonate.	UN3115	≤32+≤15−18+≤12−15	≥38	.....	.....	.....	OP7	−20	−10	
Isopropylcumyl hydroperoxide.	UN3109	≤72	≥28	.....	.....	.....	OP8	.....	.....	13
p-Menthyl hydroperoxide	UN3105	> 72–100	.....	.....	.....	.....	OP7	.....	.....	13
p-Menthyl hydroperoxide	UN3109	≤72	≥28	.....	.....	.....	OP8	.....	.....	
Methylcyclohexanone peroxide(s).	UN3115	≤67	.....	≥33	.....	.....	OP7	+35	+40	
Methyl ethyl ketone peroxide(s).	UN3101	≤52	≥48	.....	.....	.....	OP5	.....	.....	5, 13, 29
Methyl ethyl ketone peroxide(s).	UN3105	≤45	≥55	.....	.....	.....	OP7	.....	.....	5, 29
Methyl ethyl ketone peroxide(s).	UN3107	≤40	≥60	.....	.....	.....	OP8	.....	.....	7
Methyl isobutyl ketone peroxide(s).	UN3105	≤62	≥19	.....	.....	.....	OP7	.....	.....	5, 23
Organic peroxide, liquid, sample.	UN3103	.....	.....	.....	.....	.....	OP2	.....	.....	12
Organic peroxide, liquid, sample, temperature controlled.	UN3113	.....	.....	.....	.....	.....	OP2	.....	.....	12
Organic peroxide, solid, sample.	UN3104	.....	.....	.....	.....	.....	OP2	.....	.....	12
Organic peroxide, solid, sample, temperature controlled.	UN3114	.....	.....	.....	.....	.....	OP2	.....	.....	12

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Peroxyacetic acid, type D, stabilized.	UN3105	≤43	.....	.....	.....	.....	OP7	.....	.....	13, 20
Peroxyacetic acid, type E, stabilized.	UN3107	≤43	.....	.....	.....	.....	OP8	.....	.....	13, 20
Peroxyacetic acid, type F, stabilized.	UN3109	≤43	.....	.....	.....	.....	OP8	.....	.....	13, 20, 28
Peroxyacetic acid or peracetic acid [with not more than 7% hydrogen peroxide].	UN3107	≤36	.....	.....	.....	≥15	OP8	.....	.....	13, 20, 28, 29
Peroxyacetic acid or peracetic acid [with not more than 20% hydrogen peroxide].	Exempt	≤6	.....	.....	.....	≥60	Exempt	.....	.....	28, 29
Peroxyacetic acid or peracetic acid [with not more than 26% hydrogen peroxide].	UN3109	≤17	.....	.....	.....	.....	OP8	.....	.....	13, 20, 28, 29
Peroxylauric acid	UN3118	≤100	.....	.....	.....	.....	OP8	+35	+40	
Pinanyl hydroperoxide	UN3105	>56–100	.....	.....	.....	.....	OP7	.....	.....	13
Pinanyl hydroperoxide	UN3109	≤56	≥44	.....	.....	.....	OP8	.....	.....	
Polyether poly-tert-butylperoxycarbonate.	UN3107	≤52	.....	≥48	.....	.....	OP8	.....	.....	
Tetrahydronaphthyl hydroperoxide.	UN3106	≤100	.....	.....	.....	.....	OP7	.....	.....	
1,1,3,3-Tetramethylbutyl hydroperoxide.	UN3105	≤100	.....	.....	.....	.....	OP7	.....	.....	
1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate.	UN3115	≤100	.....	.....	.....	.....	OP7	+15	+20	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate.	UN3115	≤72	.....	≥28	.....	.....	OP7	-5	+5	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52	.....	.....	.....	.....	OP8	−5	+5	
1,1,3,3-tetramethylbutyl peroxypivalate.	UN3115	≤77	≥23	.....	.....	.....	OP7	0	+10	
3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane.	UN3105	≤42	≥58	.....	.....	.....	OP7	.....	.....	26

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Notes

1. For domestic shipments, OP8 is authorized.
2. Available oxygen must be <4.7%.
3. For concentrations <80% OP5 is allowed. For concentrations of at least 80% but <85%, OP4 is allowed. For concentrations of at least 85%, maximum package size is OP2.
4. The diluent may be replaced by di-tert-butyl peroxide.
5. Available oxygen must be ≤9% with or without water.
6. For domestic shipments, OP5 is authorized.
7. Available oxygen must be ≤8.2% with or without water.
8. Only non-metallic packagings are authorized.
9. For domestic shipments this material maybe transported under the provisions of paragraph (h)(3)(xii) of this section.
10. [Reserved]
11. [Reserved]
12. Samples may only be offered for transportation under the provisions of paragraph (c)(2) of this section.
13. ''Corrosive'' subsidiary risk label is required.
14. [Reserved]
15. No ''Corrosive'' subsidiary risk label is required for concentrations below 80%.
16. With <6% di-tert-butyl peroxide.
17. With ≥8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.
18. Addition of water to this organic peroxide will decrease its thermal stability.
19. [Reserved]
20. Mixtures with hydrogen peroxide, water and acid(s).
21. With diluent type A, with or without water.
22. With ≥36% diluent type A by mass, and in addition ethylbenzene.
23. With ≥19% diluent type A by mass, and in addition methyl isobutyl ketone.
24. Diluent type B with boiling point >100 C.
25. No ''Corrosive'' subsidiary risk label is required for concentrations below 56%.
26. Available oxygen must be ≤7.6%.
27. Formulations derived from distillation of peroxyacetic acid originating from peroxyacetic acid in a concentration of not more than 41% with water, total active oxygen less than or equal to 9.5% (peroxyacetic acid plus hydrogen peroxide).
28. For the purposes of this section, the names ''Peroxyacetic acid'' and ''Peracetic acid'' are synonymous.
29. For international transportation, shipments of this material must be accompanied by a Competent Authority approval from the Associate Administrator.

(d) *Packing Method Table.* Packagings for organic peroxides and self-reactive substances are listed in the Maximum

Quantity per Packing Method Table. The packing methods are designated OP1 to OP8. The quantities specified for each packing method represent the maximum that is authorized.

(1) The following types of packagings are authorized:

(i) Drums: 1A1, 1A2, 1B1, 1B2, 1D, 1G, 1H1, 1H2;

(ii) Jerricans: 3A1, 3A2, 3B1, 3B2, 3H1, 3H2;

(iii) Boxes: 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 4A, 4B; or

(iv) Composite packagings with a plastic inner receptacle: 6HA1, 6HA2, 6HB1, 6HB2, 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6HH1, 6HH2.

(2) Metal packaging (including inner packagings of combination packagings and outer packagings of combination or composite packagings) are used only for packing methods OP7 and OP8.

(3) In combination packagings, glass receptacles are used only as inner packagings with a maximum content of 0.5 kg for solids or 0.5 L for liquids.

(4) The maximum quantity per packaging or package for Packing Methods OP1–OP8 must be as follows:

MAXIMUM QUANTITY PER PACKAGING/PACKAGE

[For Packing Methods OP1 to OP8]

Maximum quantity	Packing Method							
	OP1	OP2	OP3	OP4 [1]	OP5	OP6	OP7	OP8
Solids and combination packagings (liquid and solid) (kg)	0.5	0.5/10	5	5	25	50	50	[2] 400
Liquids (L)	0.5	.....	5	.....	30	60	60	[3] 225

[1] If two values are given, the first applies to the maximum net mass per inner packaging and the second to the maximum net mass of the complete package.

[2] 60 kg for jerricans/200 kg for boxes and, for solids, 400 kg in combination packagings with outer packagings comprising boxes (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and with inner packagings of plastics or fiber with a maximum net mass of 25 kg.

[3] 60 L for jerricans.

(e) *Organic Peroxide IBC Table.* The following Organic Peroxide IBC Table specifies, by technical name, those organic peroxides that are authorized for transportation in certain IBCs and not subject to the approval provisions of § 173.128 of this part. Additional requirements for authorized IBCs are found in paragraph (f) of this section.

ORGANIC PEROXIDE IBC TABLE

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
3109	ORGANIC PEROXIDE, TYPE F, LIQUID.				
	tert-Butyl hydroperoxide, not more than 72% with water.	31A	1250		
	tert-Butyl peroxyacetate, not more than 32% in diluent type A.	31A	1250		
	.....	31HA1	1000		
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type A.	31A	1250		
	.....	31HA1	1000		
	Cumyl hydroperoxide, not more than 90% in diluent type A.	31HA1	1250		
	Dibenzoyl peroxide, not more than 42% as a stable dispersion.	31H1	1000		
	Di-tert-butyl peroxide, not more than 52% in diluent type B.	31A	1250		
	.....	31HA1	1000		
	1,1-Di-(tert-butylperoxy) cyclohexane, not more than 42% in diluent type A.	31H1	1000		
	Dicumyl peroxide, less than or equal to 100%	31A	1250		
	.....	31HA1	1000		
	Dilauroyl peroxide, not more than 42%, stable dispersion, in water.	31HA1	1000		
	Isopropyl cumyl hydroperoxide, not more than 72% in diluent type A.	31HA1	1250		
	p-Menthyl hydroperoxide, not more than 72% in diluent type A.	31HA1	1250		
	Peroxyacetic acid, stabilized, not more than 17%	31H1	1500		
	.....	31HA1	1500		
	.....	31A	1500		
	Peroxyacetic acid, with not more than 26% hydrogen peroxide.	31A	1500		
	.....	31HA1	1500		
	Peroxyacetic acid, type F, stabilized	31A	1500		
	.....	31HA1	1500		
3110	ORGANIC PEROXIDE TYPE F, SOLID.				
	Dicumyl peroxide, less than or equal to 100%	31A	2000		

ORGANIC PEROXIDE IBC TABLE—Continued

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
	.....	31H1			
	.....	31HA1			
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED.				
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B.	31HA1	1000	+30 °C	+35 °C
	.....	31A	1250	+30 °C	+35 °C
	tert-Butyl peroxyneodecanoate, not more than 32% in diluent type A.	31A	1250	0 °C	+10 °C
	tert-Butyl peroxyneodecanoate, not more than 42% stable dispersion, in water.	31A	1250	−5 °C	+5 °C
	tert-Butyl peroxypivalate, not more than 27% in diluent type B.	31HA1	1000	+10 °C	+15 °C
	.....	31A	1250	+10 °C	+15 °C
	Cumyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	−15 °C	−5 °C
	Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water.	31A	1250	+10 °C	+15 °C
	Di-(4-tert-butylcyclohexyl) peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30 °C	+35 °C
	Dicetyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30 °C	+35 °C
	Di-(2-ethylhexyl) peroxydicarbonate, not more than 52%, stable dispersion, in water.	31A	1250	−20 °C	−10 °C
	Dimyristyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+15 °C	+20 °C
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A.	31HA1	1000	+10 °C	+15 °C
	.....	31A	1250	+10 °C	+15 °C
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 52%, stable dispersion, in water.	31A	1250	+10 °C	+15 °C
	1,1,3,3-Tetramethylbutyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	−5 °C	+5 °C

(f) *IBCs.* IBCs are authorized subject to the conditions and limitations of this section if the IBC type is authorized according to paragraph (e) of this section, as applicable, and the IBC conforms to the requirements in subpart O of part 178 of this subchapter at the Packing Group II performance level. Type F organic peroxides or self-reactive substances are not authorized for transportation in IBCs other than those specified, unless approved by the Associate Administrator.

(1) IBCs shall be provided with a device to allow venting during transportation. The inlet to the pressure relief device shall be sited in the vapor space of the IBC under maximum filling conditions during transportation.

(2) To prevent explosive rupture of metal IBCs or composite IBCs with a complete metal casing, the emergency-relief devices shall be designed to vent all the decomposition products and vapors evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire-engulfment as calculated by the formula in paragraph (h)(3)(v) of this section. The control and emergency temperatures specified in the Organic Peroxide IBC Table are based on a non-insulated IBC.

(g) Organic Peroxide Portable Tank Table. The following Organic Peroxide Portable Tank Table provides certain portable tank requirements and identifies, by technical name, those organic peroxides that are authorized for transportation in the bulk packagings listed in paragraph (h). Organic peroxides listed in this table, provided they meet the specific packaging requirements found in paragraph (h), are not subject to the approval provisions of § 173.128 of this part.

ORGANIC PEROXIDE PORTABLE TANK TABLE

UN No.	Hazardous material	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel) See. . .	Bottom opening requirements See. . .	Pressure-relief requirements See. . .	Filling limits	Control temperature	Emergency temperature
3109	ORGANIC PEROXIDE, TYPE F, LIQUID.							
	tert-Butyl hydroperoxide, not more than 72% with water. *Provided that steps have been taken to achieve the safety equivalence of 65% tert-Butyl hydroperoxide and 35% water.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Cumyl hydro-peroxide, not more than 90% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Di-tert-butyl peroxide, not more 32% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Dicumyl peroxide, less than or equal to 100% in diluent type B.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Isopropyl cumyl hydroperoxide, not more 72% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	p-Menthyl hydro-peroxide, not more 72% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Pinanyl hydro-peroxide, not more than 56% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
3110	ORGANIC PEROXIDE, TYPE F, SOLID.							
	Dicumyl peroxide less than or equal to 100% with inert solids. *Maximum quantity per portable tank 2,000 kg.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED.							
	tert-Butyl peroxyacetate, not more than 32% in diluent type B.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+30 °C	+35 °C
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent B.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+15 °C	+20 °C
	tert-Butylperoxypivalate, not more than 27% in diluent type B.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+5 °C	+10 °C
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type B.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+35 °C	+40 °C

Di-(3,5,5-trimethyl-hexanoyl) peroxide, not more than 38% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	0 °C	+5 °C
Peroxyacetic acid, distilled, stabilized, not more than 41%.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+30 °C	+35 °C

(h) *Bulk packagings other than IBCs.* The following bulk packagings are authorized, subject to the conditions and limitations of this section, if the organic peroxide is listed in the Organic Peroxide Portable Tank Table and bulk packagings are authorized, or if the organic peroxide is specifically authorized for transport in a bulk packaging by this paragraph (h), and the bulk packaging conforms to the requirements of this subchapter:

(1) *Rail cars.* Class DOT 103, 104, 105, 109, 111, 112, 114, 115, or 120 fusion-weld tank car tanks are authorized. DOT 103W, 111A60F1 and 111A60W1 tank car tanks must have bottom outlets effectively sealed from inside. Gauging devices are required on DOT 103W tank car tanks. Riveted tank car tanks are not authorized.

(2) *Cargo tanks.* Specification MC 307, MC 310, MC 311, MC 312, DOT 407, and DOT 412 cargo tank motor vehicles with a tank design pressure of at least 172 kPa (25 psig) are authorized.

(3) *Portable tanks.* The following requirements apply to portable tanks intended for the transport of organic peroxides or self-reactive substances. DOT 51, 57, IM 101 portable tanks, and UN portable tanks that conform to the requirements of paragraph (g) of this section, are authorized. Type F organic peroxide or self-reactive substance formulations other than those indicated in the Organic Peroxide Portable Tank Table may be transported in portable tanks if approved by the Associate Administrator. The following conditions also apply:

(i) The portable tank must be designed for a test pressure of at least 0.4 MPa (4 bar).

(ii) The portable tank must be fitted with temperature-sensing devices.

(iii) The portable tank must be fitted with pressure relief devices and emergency-relief devices. Vacuum-relief devices may also be used. Pressure relief devices must operate at pressures determined according to both the properties of the hazardous material and the construction characteristics of the portable tank. Fusible elements are not allowed in the shell.

(iv) The pressure relief devices must consist of reclosing devices fitted to prevent significant build-up within the portable tank of the decomposition products and vapors released at a temperature of 50 °C (122 °F). The capacity and start-to-discharge pressure of the relief devices must be in accordance with the applicable requirements of this subchapter specified for the portable tank. The pressure relief devices must not allow liquid to escape in the event the portable tank is overturned in a loaded condition.

(v)(A) The emergency-relief devices may be of the reclosing or frangible types, or a combination of the two, designed to vent all the decomposition products and vapors evolved during a period of not less than one hour of complete fire engulfment as calculated by the following formula:

$$q = 70961\ F\ A^{0.82}$$

Where:
q = heat absorption (W)
A = wetted area (m^2)
F = insulation factor (−)

(B) Insulation factor (F) in the formula in paragraph (h)(3)(v)(A) of this section equals 1 for non-insulated vessels and for insulated vessels F is calculated using the following formula:

$$F = \frac{U\left(923 - T_{PO}\right)}{47032}$$

Where:
U = K/L = heat transfer coefficient of the insulation ($W \cdot m^{-2} \cdot K^{-1}$); where K = heat conductivity of insulation layer ($W \cdot m^{-1} \cdot K^{-1}$), and L = thickness of insulation layer (m).
T_{PO} = temperature of material at relieving conditions (K).

(vi) The start-to-discharge pressure of emergency-relief devices must be higher than that specified for the pressure relief devices in paragraph (h)(3)(iv) of this section. The emergency-relief devices must be sized and designed in such a way that the maximum pressure in the shell never exceeds the test pressure of the portable tank.

Note to Paragraph (h)(3)(vi): An example of a method to determine the size of emergency-relief devices is given in Appendix 5 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). A second example of a test method for venting sizing is given in the American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2) (Informational materials not requiring incorporation by reference, see § 171.7(b)).

(vii) For insulated portable tanks, the capacity and setting of emergency-relief devices must be determined assuming a loss of insulation from 1% of the surface area.

(viii) Vacuum-relief devices and reclosing devices on portable tanks used for flammable hazardous materials must be provided with flame arresters. Any reduction of the relief capacity caused by the flame arrester must be taken into account and the appropriate relief capacity must be provided.

(ix) Service equipment such as devices and external piping must be designed and constructed so that no hazardous material remains in them after filling the portable tank.

(x) Portable tanks may be either insulated or protected by a sun-shield. If the SADT of the hazardous material in the portable tank is 55 °C (131 °F) or less, the portable tank must be completely insulated. The outer surface must be finished in white or bright metal.

(xi) The degree of filling must not exceed 90% at 15 °C (59 °F).

(xii) DOT 57 metal portable tanks are authorized only for tert-butyl cumyl peroxide, di-(2-tert-butylperoxyisopropyl-benzene(s)), dicumyl peroxide and mixtures of two or more of these peroxides. DOT 57 portable tanks must conform to the venting requirements of paragraph (f) of this section. These portable tanks are not subject to any other requirements of paragraph (h) of this section.

(4) For tertiary butyl hydroperoxide (TBHP), each tank car, cargo tank or portable tank must contain 7.6 cm (3.0 inches) low density polyethylene (PE) saddles having a melt index of at least 0.2 grams per 10 minutes (for example see, ASTM D1238, condition E) as part of the lading, with a ratio of PE to TBHP over a range of 0.008 to 0.012 by mass. Alternatively, plastic or metal containers equipped with fusible plugs having a melting point between 69 °C (156 °F) and 71 °C (160 °F) and filled with a sufficient quantity of water to dilute the TBHP to 65% or less by mass may be used. The PE saddles must be visually inspected after each trip and, at a minimum, once every 12 months, and replaced when discoloration, fracture, severe deformation, or other indication of change is noted.

■ 43. Section 173.226 is revised to read as follows:

§ 173.226 Materials poisonous by inhalation, Division 6.1, Packing Group I, Hazard Zone A.

Division 6.1, Packing Group I, Zone A poisonous by inhalation (see § 173.133) must be packed in non-bulk packagings in accordance with the following paragraphs:

(a) In seamless specification cylinders conforming to the requirements of § 173.40.

(b) In 1A1, 1B1, 1H1, 1N1, or 6HA1 drums further packed in a 1A2 or 1H2 drum. Both inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packing Group I performance level. The outer drums may be tested either as a package

intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids at a mass corresponding to the mass of the assembled packaging system. All outer drums, even those tested to contain inner packaging or as single packagings for solids, must withstand a hydrostatic test pressure of 100 kPa (15 psig). The outer drum must have a minimum thickness of 1.35 mm (0.053 inch) for a 1A2 outer drum or 6.3 mm (0.248 inch) for a 1H2 outer drum. In addition, the inner drum must—

(1) Be capable of satisfactorily withstanding the hydrostatic pressure test in § 178.605 of this subchapter at a test pressure of 300 kPa (45 psig);

(2) Satisfactorily withstand the leakproofness test in § 178.604 of this subchapter using an internal air pressure of at least twice the vapor pressure at 55 °C (131 °F) of the material to be packaged;

(3) Have screw-type closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(4) Have a minimum thickness as follows:

(i) For a 1A1 or 1N1 drum, 1.3 mm (0.051 inch);

(ii) For a 1B1 drum, 3.9 mm (0.154 inch);

(iii) For a 1H1 drum, 3.16 mm (0.124 inch); and

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0622 inch) and the outer steel drum shall be 0.96 mm (0.0378 inch).

(5) Be isolated from the outer drum by a shock-mitigating, non-reactive material, which completely surrounds the inner packaging on all sides.

(c) In combination packagings, consisting of an inner packaging system and an outer packaging, as follows:

(1) Outer packagings:

Steel drum: 1A2
Aluminum drum: 1B2
Metal drum, other than steel or aluminum: 1N2
Plywood drum: 1D
Fiber drum: 1G
Plastic drum: 1H2
Steel box: 4A
Aluminum box: 4B
Natural wood box: 4C1 or 4C2
Plywood box: 4D
Reconstituted wood box: 4F
Fiberboard box: 4G
Expanded plastic box: 4H2
Solid plastic box: 4H2

(2) Inner packaging system. The inner packaging system consists of two packagings:

(i) an impact-resistant receptacle of glass, earthenware, plastic or metal securely cushioned with a non-reactive, absorbent material, and

(A) Capacity of each inner receptacle may not exceed 4 L (1 gallon).

(B) An inner receptacle that has a closure must have a closure which is physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation.

(ii) Packed within a leak-tight packaging of metal or plastic.

(iii) This combination packaging in turn is packed within the outer packaging.

(A) The total amount of liquid contained in the outer packaging may not exceed 16 L (4 gallons).

(iv) the inner packaging system must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level when subjected to the following tests:

(A) § 178.603—Drop Test

(B) § 178.604—Leakproofness Test

(C) § 178.605—Hydrostatic Pressure Test

(v) The inner packaging system must meet the above tests without the benefit of the outer packaging.

(vi) The leakproofness and hydrostatic pressure test may be conducted on either the inner receptacle or the outer packaging of the inner packaging system.

(vii) In addition to the requirements in § 173.226(b), the outer package must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level as applicable for the type of package being used.

(d) If approved by the Associate Administrator, 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, palletizes the drums, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

(e) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with § 173.28 using a minimum test pressure as indicated in paragraph (b)(2) of this section.

■ 44. Section 173.227 is revised to read as follows:

§ 173.227 Materials poisonous by inhalation. Division 6.1, Packing Group I, Hazard Zone B.

(a) In packagings as authorized in § 173.226 and seamless and welded specification cylinders conforming to the requirements of § 173.40.

(b) 1A1, 1B1, 1N1 or 1H1 drum or 6HA1 composite further packed in a 1A2 or 1H2 drum. Both the inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packing Group I performance level. The outer drums may be tested either as a package intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids at a mass corresponding to the mass of the assembled packaging system. The outer drum must have a minimum thickness of 1.35 mm (0.053 inches) for a 1A2 outer drum or 6.30 mm (0.248 inches) for a 1H2 outer drum. Outer 1A2 and 1H2 drums must withstand a hydrostatic test pressure of 100 kPa (15 psig). Capacity of the inner drum may not exceed 220 liters. In addition, the inner drum must conform to all of the following requirements:

(2) Have screw closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(3) Have a minimum thickness as follows:

(i) For a 1A1 drum, 0.69 mm (0.027 inch);

(ii) For a 1B1 drum, 2.79 mm (0.110 inch);

(iii) For a 1H1 drum, 1.14 mm (0.045 inch); or

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0625 inch), the outer steel drum shall be 0.70 mm (0.027 inch).

(4) Be isolated from the outer drum by a shock-mitigating, non-reactive

material which completely surrounds the inner packaging on all sides.

(5) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with § 173.28 using a minimum test pressure as indicated in paragraph (b)(1) of this section.

(c) 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

■ 45. In § 173.249, paragraph (c) is revised to read as follows:

§ 173.249 Bromine.

* * * * *

(c) UN portable tanks conforming to tank code T22 (see § 172.102 of this subchapter) or specification IM 101 portable tanks conforming with paragraphs (d) through (f) of this section. Except when transported as a residue, the total quantity in one tank may not be less than 88% nor more than 92% of the volume of the tank.

* * * * *

■ 46. In § 173.306, paragraphs (i) and (j) are removed and a new paragraph (i) is added to read as follows:

§ 173.306 Limited quantities of compressed gases.

* * * * *

(i) *Aerosols with a capacity of less than 50 ml.* Aerosols, as defined in § 171.8 of this subchapter, with a capacity not exceeding 50 ml and with a pressure not exceeding 970 kPa (141 psig) at 55 °C (131 °F), containing no hazardous materials other than a Division 2.2 gas, are not subject to the requirements of this subchapter.

* * * * *

§ 173.307 [Amended]

■ 47. In § 173.307, paragraph (a)(5) is removed.

■ 48. Section 173.313 is added to read as follows:

§ 173.313 UN Portable Tank Table for Liquefied Compressed Gases.

The UN Portable Tank Table for Liquefied Compressed Gases is referenced in § 172.102(c)(7)(iii) of this subchapter for portable tanks that are used to transport liquefied compressed gases. The table applies to each liquefied compressed gas that is identified with Special Provision T50 in Column (7) of the § 172.101 Table. In addition to providing the UN identification number and proper shipping name, the table provides maximum allowable working pressures, bottom opening requirements, pressure relief device requirements, and degree of filling requirements for liquefied compressed gas permitted for transportation in a T50 portable tank. In the minimum test pressure column, ''small'' means a portable tank with a diameter of 1.5 meters or less when measured at the widest part of the shell, ''sunshield'' means a portable tank with a shield covering at least the upper third of the shell, ''bare'' means no sunshield or insulation is provided, and ''insulated'' means a complete cladding of sufficient thickness of insulating material necessary to provide a minimum conductance of not more than 0.67 w/m²/k. In the pressure relief requirements column, the word ''Normal'' denotes that a frangible disc as specified in § 178.276(e)(3) of this subchapter is not required.

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (*See* § 178.276(e))	Maximum filling density (kg/l)
1005	Ammonia, anhydrous	29.0 25.7 22.0 19.7	Allowed	§ 178.276(e)(3)	0.53
1009	Bromotrifluoromethane or Refrigerant gas R 13B1	38.0 34.0 30.0 27.5	Allowed	Normal	1.13
1010	Butadienes, stabilized	7.5 7.0 7.0 7.0	Allowed	Normal	0.55
1011	Butane	7.0 7.0 7.0 7.0	Allowed	Normal	0.51
1012	Butylene	8.0 7.0 7.0 7.0	Allowed	Normal	0.53
1017	Chlorine	19.0 17.0 15.0 13.5	Not Allowed	§ 178.276(e)(3)	1.25
1018	Chlorodifluoromethane or Refrigerant gas R 22	26.0 24.0 21.0 19.0	Allowed	Normal	1.03
1020	Chloropentafluoroethane or Refrigerant gas R 115	23.0 20.0 18.0 16.0	Allowed	Normal	1.06

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (*See* § 178.276(e))	Maximum filling density (kg/l)
1021	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124.	10.3 9.8 7.9 7.0	Allowed	Normal	1.2
1027	Cyclopropane	18.0 16.0 14.5 13.0	Allowed	Normal	0.53
1028	Dichlorodifluoromethane or Refrigerant gas R 12	16.0 15.0 13.0 11.5	Allowed	Normal	1.15
1029	Dichlorofluoromethane or Refrigerant gas R 21	7.0 7.0 7.0 7.0	Allowed	Normal	1.23
1030	1,1-Difluoroethane or Refrigerant gas R 152a	16.0 14.0 12.4 11.0	Allowed	Normal	0.79
1032	Dimethylamine, anhydrous	7.0 7.0 7.0 7.0	Allowed	Normal	0.59
1033	Dimethyl ether	15.5 13.8 12.0 10.6	Allowed	Normal	0.58
1036	Ethylamine	7.0 7.0 7.0 7.0	Allowed	Normal	0.61
1037	Ethyl chloride	7.0 7.0 7.0 7.0	Allowed	Normal	0.8
1040	Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 °C.	Only authorized in 10 bar insulated portable tanks—	Not Allowed	§ 178.276(e)(3)	0.78
1041	Ethylene oxide and carbon dioxide mixture with more than 9% but not more than 87% ethylene oxide.	See MAWP definition in § 178.276(a)	Allowed	Normal	*See* § 173.32(f)
1055	Isobutylene	8.1 7.0 7.0 7.0	Allowed	Normal	0.52
1060	Methyl acetylene and propadiene mixture, stabilized	28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1061	Methylamine, anhydrous	10.8 9.6 7.8 7.0	Allowed	Normal	0.58
1062	Methyl bromide	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.51
1063	Methyl chloride *or* Refrigerant gas R 40	14.5 12.7 11.3 10.0	Allowed	Normal	0.81
1064	Methyl mercaptan	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	0.78

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (*See* § 178.276(e))	Maximum filling density (kg/l)
1067	Dinitrogen tetroxide	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.3
1075	Petroleum gas, liquefied	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1077	Propylene	28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1078	Refrigerant gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1079	Sulphur dioxide	11.6 10.3 8.5 7.6	Not Allowed	§ 178.276(e)(3)	1.23
1082	Trifluorochloroethylene, stabilized *or* Refrigerant gas R 1113.	17.0 15.0 13.1 11.6	Not Allowed	§ 178.276(e)(3)	1.13
1083	Trimethylamine, anhydrous	7.0 7.0 7.0 7.0	Allowed	Normal	0.56
1085	Vinyl bromide, stabilized	7.0 7.0 7.0 7.0	Allowed	Normal	1.37
1086	Vinyl chloride, stabilized	10.6 9.3 8.0 7.0	Allowed	Normal	0.81
1087	Vinyl methyl ether, stabilized	7.0 7.0 7.0 7.0	Allowed	Normal	0.67
1581	Chloropicrin and methyl bromide mixture	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.51
1582	Chloropicrin and methyl chloride mixture	19.2 16.9 15.1 13.1	Not Allowed	§ 178.276(e)(3)	0.81
1858	Hexafluoropropylene compressed *or* Refrigerant gas R 1216.	19.2 16.9 15.1 13.1	Allowed	Normal	1.11
1912 1954	Methyl chloride and methylene chloride mixture n.o.s..	15.2 13.0 11.6 10.1	Allowed	Normal	0.811954
NA	Insecticide gases, flammable,	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
1958	1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114.	7.0 7.0 7.0 7.0	Allowed	Normal	1.3
1965	Hydrocarbon gas, mixture liquefied, n.o.s.	See MAWP definition in 178.276(a)	Allowed	Normal	See § 173.32(f)

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (*See* § 178.276(e))	Maximum filling density (kg/l)
1969	Isobutane	8.5 7.5 7.0 7.0	Allowed	Normal	0.49
1973	Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49% chlorodifluoromethane or Refrigerant gas R 502.	28.3 25.3 22.8 20.3	Allowed	Normal	1.05
1974	Chlorodifluorobromomethane *or* Refrigerant gas R 12B1 ...	7.4 7.0 7.0 7.0	Allowed	Normal	1.61
1976	Octafluorocyclobutane *or* Refrigerant gas RC 318	8.8 7.8 7.0 7.0	Allowed	Normal	1.34
1978	Propane	22.5 20.4 18.0 16.5	Allowed	Normal	0.42
1983	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a ...	7.0 7.0 7.0 7.0	Allowed	Normal	1.18
2035	1,1,1-Trifluoroethane compressed or Refrigerant gas R 143a.	31.0 27.5 24.2 21.8	Allowed	Normal	0.76
2424	Octafluoropropane or Refrigerant gas R 218	23.1 20.8 18.6 16.6	Allowed	Normal	1.07
2517	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b	8.9 7.8 7.0 7.0	Allowed	Normal	0.99
2602	Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74% dichlorodifluoromethane or Refrigerant gas R 500.	20.0 18.0 16.0 14.5	Allowed	Normal	1.01
3057	Trifluoroacetyl chloride	14.6 12.9 11.3 9.9	Not allowed	§ 178.276(e)(3)	1.17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide.	14.0 12.0 11.0 9.0	Allowed	§ 178.276(e)(3)	1.09
3153	Perfluoro (methyl vinyl ether)	14.3 13.4 11.2 10.2	Allowed	Normal	1.14
3159	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	17.7 15.7 13.8 12.1	Allowed	Normal	1.04
3161	Liquefied gas, flammable, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
3163	Liquefied gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (*See* § 178.276(e))	Maximum filling density (kg/l)
3220	Pentafluoroethane or Refrigerant gas R 125	34.4 30.8 27.5 24.5	Allowed	Normal	0.95
3252	Difluoromethane or Refrigerant gas R 32	43.0 39.0 34.4 30.5	Allowed	Normal	0.78
3296	Heptafluoropropane or Refrigerant gas R 227	16.0 14.0 12.5 11.0	Allowed	Normal	1.2
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8.8% ethylene oxide.	8.1 7.0 7.0 7.0	Allowed	Normal	1.16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide.	25.9 23.4 20.9 18.6	Allowed	Normal	1.02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide.	16.7 14.7 12.9 11.2	Allowed	Normal	1.03
3318	Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia.	See MAWP definition in § 178.276(a)	Allowed	§ 178.276(e)(3)	§ 173.32(f)
3337	Refrigerant gas R 404A	31.6 28.3 25.3 22.5	Allowed	Normal	0.84
3338	Refrigerant gas R 407A	31.3 28.1 25.1 22.4	Allowed	Normal	0.95
3339	Refrigerant gas R 407B	33.0 29.6 26.5 23.6	Allowed	Normal	0.95
3340	Refrigerant gas R 407C	29.9 26.8 23.9 21.3	Allowed	Normal	0.95

■ 49. In § 173.315, paragraph (a) introductory text is revised to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tanks.

(a) Liquefied compressed gases that are transported in UN portable tanks must be loaded and offered for transportation in accordance with the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313. A liquefied compressed gas offered for transportation in a cargo tank motor vehicle or a portable tank must be prepared in accordance with this section, §§ 173.32 and 173.33 and subpart E or subpart G of part 180 of this subchapter, as applicable. For cryogenic liquids, see § 173.318. For marking requirements, see §§ 172.326 and 172.328 of this subchapter. Except for UN portable tanks, a liquefied compressed gas must be loaded and offered for transportation in accordance with the following table:

* * * * *

■ 50. In § 173.323, paragraph (b) is revised to read as follows:

§ 173.323 Ethylene oxide.

* * * * *

(b) Ethylene oxide must be packaged in one of the following:

(1) In hermetically sealed glass or metal inner packagings suitably cushioned in an outer package authorized by § 173.201(b). The maximum quantity permitted in any glass inner packaging is 100 g (3.5 ounces), and the maximum quantity permitted in any metal inner packaging is 340 g (12 ounces). After filling, each inner packaging shall be determined to be leak-tight by placing the inner packaging in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapor pressure of ethylene oxide at 55 °C is achieved. The total quantity in any outer packaging

shall not exceed 100 g (3.5 ounces), and the total quantity in any outer packaging containing only metal inner packagings shall not exceed 2.5 kg (5.5 pounds). Each completed package must be capable of passing all Packing Group I performance tests.

(2) In specification cylinders, as authorized for any compressed gas except acetylene. Pressurizing valves and insulation are required for cylinders over 4 L (1 gallon) capacity. Eductor tubes must be provided for cylinders over 19 L (5 gallons) capacity. Cylinders must be seamless or welded steel (not brazed) with a nominal capacity of no more than 115 L (30 gallons) and may not be liquid full below 82 °C (180 °F). Before each refilling, each cylinder must be tested for leakage at no less than 103.4 kPa (15 psig) pressure. In addition, each cylinder must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F). The capacity of the relief device and the effectiveness of the insulation must be such that the charged cylinder will not explode when tested by the method described in CGA Pamphlet C–14 or other equivalent method.

(3) In 1A1 steel drums of no more than 231 L (61 gallons) and meeting Packing Group I performance standards. The drum must be lagged of all welded construction with the inner shell having a minimum thickness of 1.7 mm (0.068 inches) and the outer shell having a minimum thickness of 2.4 mm (0.095 inches). Drums must be capable of withstanding a hydrostatic test pressure of 690 kPa (100 psig). Lagging must be of sufficient thickness so that the drum, when filled with ethylene oxide and equipped with the required pressure relief device, will not rupture when exposed to fire. The drum may not be liquid full below 85 °C (185 °F), and must be marked ''THIS END UP'' on the top head. Before each refilling, each drum must be tested for leakage at no less than 103 kPa (15 psig) pressure. Each drum must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F), and the capacity of the relief device must be such that the filled drum is capable of passing, without rupture, the test method described in CGA Pamphlet C–14 or other equivalent method.

* * * * *

■ 50a. In Appendix H to Part 173, the fifth sentence of paragraph 3. and paragraph 3.(a) are revised to read as follows:

Appendix H to Part 173—Method of Testing for Sustained Combustibility

3. * * * A suitable apparatus is shown in Figure 32.5.2.1 of the UN Manual of Test and Criteria, and the essential dimensions are given in Figures 32.5.2.1 and 32.5.2.2 of the UN Manual and Tests and Criteria. * * *

(a) *Gauge,* for checking that the height of the center of the gas jet above the top of the test portion well is 2.2 mm (*see* Figure 32.5.2.1);

* * * * *

PART 175—CARRIAGE BY AIRCRAFT

■ 51. The authority citation for part 175 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 52. In § 175.10, paragraphs (a)(4)(i), (a)(4)(iii), and (a)(18) are revised to read as follows:

§ 175.10 Exceptions.

(a) * * *

(4) * * *

(i) Non-radioactive medicinal and toilet articles (including aerosols) may be carried in checked or carry-on baggage. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(iii) Other aerosols in Division 2.2 with no subsidiary risk may be carried in checked baggage only. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(18) Compressed gas cylinders of Division 2.2 worn by passengers for the operation of mechanical limbs and spare cylinders of a similar size for the same purpose in sufficient quantities to ensure an adequate supply for the duration of the journey.

* * * * *

■ 53. Section 175.85 is revised by adding new paragraph (j) to read as follows:

§ 175.85 Cargo location.

* * * * *

(j) A package bearing a KEEP AWAY FROM HEAT handling marking must be protected from direct sunshine and stored in a cool and ventilated place, away from sources of heat.

PART 176—CARRIAGE BY VESSEL

■ 54. The authority citation for part 176 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 55. In § 176.2:

■ a. The definitions for ''Explosive article'', ''Explosive substance'' and ''Magazine'' are revised.

■ b. The term ''Transport unit'' is revised to read ''Cargo transport unit''.

■ c. In the definition ''In containers or the like'', the term ''transport unit'' is removed and the term ''cargo transport unit'' is added in its place.

The revisions and additions read as follows:

* * * * *

Cargo transport unit means a transport vehicle, a freight container or a portable tank. A *closed cargo transport unit* means a cargo transport unit in which the contents are totally enclosed by permanent structures. An *open cargo transport unit* means a cargo transport unit that is not a closed cargo transport unit. Cargo transport units with fabric sides or tops are not closed cargo transport units for the purposes of this part.

* * * * *

Explosive article means an article or device which contains one or more explosive substances. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

Explosive substance means a solid or liquid material, or a mixture of materials, which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to its surroundings. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

In containers or the like means any clean, substantial, weatherproof box structure which can be secured to the vessel's structure, including a portable magazine or a closed cargo transport unit. Whenever this stowage is specified, stowage in deckhouses, mast lockers and oversized weatherproof packages (overpacks) is also acceptable.

* * * * *

Magazine means an enclosure designed to protect certain goods of Class 1 (explosive) materials from damage by other cargo and adverse weather conditions during loading, unloading, and when in transit; and to prevent unauthorized access. A magazine may be a fixed structure or compartment in the vessel, a closed freight container, a closed transport vehicle, or a portable magazine. Magazines may be positioned in any part of the ship conforming with the relevant provisions for Class 1 (explosive) materials contained in

Subpart G of this part provided that magazines which are fixed structures are sited so that their doors, where fitted, are easily accessible.

* * * * *

■ 56. Section 176.27 is revised to read as follows:

§ 176.27 Certificate.

(a) A carrier may not transport a hazardous material by vessel unless a certificate prepared in accordance with § 172.204 of this subchapter has been received.

(b) In the case of an import or export shipment of a hazardous material that will not be transported by rail, highway, or air, the shipper may certify on the bill of lading or other shipping paper that the hazardous material is properly classed, described, marked, packaged, and labeled according to part 172 of this subchapter or in accordance with the requirements of the IMDG Code (IBR, *see* § 171.7 of this subchapter). *See* § 171.12 of this subchapter.

(c)(1) A person responsible for packing or loading a freight container or transport vehicle with packages of hazardous materials for transportation by a manned vessel in ocean or coastwise service, must provide the vessel operator, at the time the shipment is offered for transportation by vessel, with a signed container packing certificate stating, at a minimum, that—

(i) The freight container or transport vehicle is serviceable for the materials loaded therein, contains no incompatible goods, and is properly marked, labeled or placarded, as applicable; and

(ii) When the freight container or transport vehicle contains packages, those packages have been inspected prior to loading, are properly marked, labeled or placarded, as applicable; are not damaged; and are properly secured.

(2) The certification may appear on a shipping paper or on a separate document as a statement, such as ''It is declared that the packing of the container has been carried out in accordance with the applicable provisions [of 49 CFR], [of the IMDG Code], or [of 49 CFR and the IMDG Code].''

■ 57. In § 176.63, paragraph (e) is revised to read as follows:

§ 176.63 Stowage locations.

* * * * *

(e) *Closed cargo transport unit,* for the purpose of stowage of Class 1 (explosive) materials on board a vessel, means a unit which fully encloses the contents by permanent structures and can be secured to the ship's structure, and includes a magazine. Cargo transport units with fabric sides or tops are not closed cargo transport units. Where this stowage is specified, stowage in small compartments such as deck-houses and mast lockers are acceptable alternatives. The floor of any closed cargo transport unit or compartment shall either be constructed of wood, close-boarded or so arranged that goods are stowed on sparred gratings, wooden pallets or dunnage. Provided that the necessary additional specifications are met, a closed cargo transport unit may be used for type ''A'' or ''C'' class 1 stowage or as a magazine.''

* * * * *

■ 58. In § 176.76, paragraphs (h) and (i) are revised to read as follows:

§ 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.

* * * * *

(h) A fumigated cargo transport unit may only be transported on board a vessel subject to the following conditions and limitations:

(1) The fumigated cargo transport unit may be placed on board a vessel only if at least 24 hours have elapsed since the unit was last fumigated;

(2) The fumigated cargo transport unit is accompanied by a document showing the date of fumigation and the type and amount of fumigant used;

(3) Prior to loading, the master is informed of the intended placement of the fumigated cargo transport unit on board the vessel and the information provided on the accompanying document;

(4) Equipment that is capable of detecting the fumigant and instructions for the equipment's use is provided on the vessel;

(5) The fumigated cargo transport unit must be stowed at least 5 m from any opening to accommodation spaces;

(6) Fumigated cargo transport units may only be transported on deck on vessels carrying more than 25 passengers; and

(7) Fumigants may not be added to cargo transport units while on board a vessel.

(i) A cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck must be stowed ''away from'' possible sources of ignition. In the case of container ships, a distance equivalent to one container space athwartships away from possible sources of ignition applied in any direction will satisfy this requirement.

■ 59. In § 176.83:

■ a. Paragraphs (a)(5), (d), (e), (f)(1), (f)(3), (g)(1), (g)(2), (g)(3), and (l) are revised;

■ b. The headings to paragraphs (g) and (f) and the title to Table 176.83(g) are revised; and

■ c. A new paragraph (m) is added.

The revisions and additions read as follows:

§ 176.83 Segregation.

* * * * *

(a) * * *

(5) Whenever hazardous materials are stowed together, whether or not in a cargo transport unit, the segregation of such hazardous materials from others must always be in accordance with the most restrictive requirements for any of the hazardous materials concerned.

* * * * *

(d) *Segregation in cargo transport units:* Two hazardous materials for which any segregation is required may not be stowed in the same cargo transport unit.

(e) *Segregation of hazardous materials stowed as breakbulk cargo from those packed in cargo transport units:* (1) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in open cargo transport units in accordance with paragraph (c) of this section.

(2) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in closed cargo transport units in accordance with paragraph (c) of this section, except that:

(i) Where ''away from'' is required, no segregation between packages and the closed cargo transport units is required; and

(ii) Where ''separated from'' is required, the segregation between the packages and the closed cargo transport units may be the same as for ''away from''.

(f) *Segregation of cargo transport units on board container vessels:* (1) Except for hatchless container ships, this paragraph applies to segregation of cargo transport units that are carried on board container vessels, or on other types of vessels, provided these cargo spaces are properly fitted for permanent stowage of containers during transport.

* * * * *

(3) *Segregation Table.* Table § 176.83(f) sets forth the general requirements for segregation between cargo transport units on board container vessels.

* * * * *

(g) *Segregation of cargo transport units on board trailerships and trainships:* (1) The requirements of this paragraph apply to the segregation of

cargo transport units which are carried on board trailerships and trainships or in ''roll-on/roll-off'' cargo spaces.

(2) For trailerships and trainships which have spaces suitable for breakbulk cargo, containers, or any other method of stowage, the appropriate paragraph of this section applies to the relevant cargo space.

(3) *Segregation Table.* Table § 176.83(g) sets forth the general requirements for segregation between transport units on board trailerships and trainships.

Table 176.83(g).—Segregation of Cargo Transport Units on Board Trailerships and Trainships

* * * * *

(1) *Segregation of containers on board hatchless (open-top) container ships:* (1) This paragraph applies to the segregation of cargo transport units that are transported on board hatchless container ships provided that the cargo spaces are properly fitted to give permanent stowage of the cargo transport units during transport.

(2) For container ships that have both hatchless container spaces and other spaces suitable for breakbulk cargo, conventional container stowage, or any other method of stowage, the appropriate requirements of this section apply to the relevant cargo space.

(3) *Segregation Table.* Table § 176.83(l)(3) sets forth the general requirements for segregation of cargo transport units on board hatchless container ships.

(4) In Table § 176.83(l)(3), a container space means a distance of not less than 6 m (20 feet) fore and aft or not less than 2.5 m (8 feet) athwartship.

TABLE 176.83(L)(3)—SEGREGATION OF CARGO TRANSPORT UNITS ON BOARD HATCHLESS CONTAINER SHIPS

Segregation requirement	VERTICAL			HORIZONTAL						
	Closed versus closed	Closed versus open	Open versus open		Closed versus closed		Closed versus open		Open versus open	
					On deck	Under deck	On deck	Under deck	On deck	Under deck
"Away from" 1.	One on top of the other permitted.	Open on top of closed permitted.	.....	Fore and AFT.	No restriction ...	No restriction ...	No restriction ...	No restriction ...	one container space.	one container space or *one* bulkhead
	.....	Otherwise as for "Open versus open".	.....	Athwartships.	No restriction ...	No restriction ...	No restriction ...	No restriction ...	One container space.	One container space
"Separated from" 2.	.....	.....	*Not* in the same vertical line.	Fore and AFT.	One container space.	One container space or one bulkhead.	One container space.	one container space or one bulkhead.	One container space and not in or above same hold.	One bulkhead
	Not in the same vertical line.	As for "open versus open".	.....	Athwartships.	One container space.	One container space.	Two container spaces.	Two container spaces.	Two container spaces and not in or above same hold.	One bulkhead
"Separated by a complete compartment or hold from". 3.	.....	.....	.....	Fore and AFT.	One container space and not in or above same hold.	One bulkhead ..	One container space and not in or above same hold.	One bulkhead ..	Two container spaces and not in or above same hold.	Two bulkheads
	.....	.....	.....	Athwartships.	Two container spaces and not in or above same hold.	One bulkhead ..	Two container spaces and not in or above same hold.	One bulkhead ..	Tree container spaces and not in or above same hold.	Two bulkheads
"Separated longitudinally by an intervening complete compartment or hold from". 4.	Prohibited	Fore and AFT.	Minimum horizontal distance of 24 m and not in or above same hold.	One bulkhead *and* minimum horizontal distance of 24 M*.	Minimum horizontal distance of 24 m and not in or above same hold.	Two bulkheads	Minimum horizontal distance of 24 m and not in or above same hold.	Two bulkheads.		
	.....	Athwartships.	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited.		

*Containers not less than 6 m (20 feet) from intervening bulkhead.
Note: All bulkheads and decks must be resistant to fire and liquid.

(m) *Provisions for segregation groups:* (1) For the purpose of segregation, materials having certain similar chemical properties have been grouped together in segregation groups. The segregation groups (such as ''acids'', ''chlorates'', ''permanganates'') and the entries allocated to each of these groups include the substances identified in section 3.1.4 of the IMDG Code. When column (10B) of the § 172.101 Table refers to a numbered stowage provision set forth in § 176.84(b) such as ''Stow 'away from' acids'', that particular stowage/segregation requirement applies to all the materials allocated to the respective segregation group.

(2) Not all hazardous materials falling within a segregation group are listed by name in the regulations. These materials are shipped under ''n.o.s.'' entries. Although these ''n.o.s.'' entries are not listed themselves in the above groups, the shipper must decide whether allocation under a segregation group is appropriate. Mixtures, solutions or preparations containing hazardous materials falling within a segregation group and shipped under an ''n.o.s.'' entry are also considered to fall within that segregation group.

(3) The segregation groups described above do not address materials which fall outside the classification criteria of the hazardous materials regulations although it is recognized that some non-hazardous materials have certain chemical properties similar to hazardous materials listed in the segregation groups. A shipper or the person responsible for packing the materials into a cargo transport unit who does have knowledge of the chemical properties of such non-hazardous materials may identify a relevant segregation group and apply the segregation requirements for that segregation group.

■ 60. In § 176.84, paragraph (a) is revised, in paragraph (b), Table of provisions, eleven new entries are added in appropriate numerical order and in paragraph (c)(2), three notes in the Provisions for the stowage of Class 1 (explosive) materials table are revised to read as follows: *§ 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.*

(a) *General.* When Column 10B of the § 172.101 Table refers to a numbered or alpha-numeric stowage provision for water shipments, the meaning and requirements of that provision are set forth in this section. Terms in quotation marks are defined in § 176.83. Other terms used in the table in this section such as ''acids'', ''chlorates'' and ''permanganates'' indicate different chemical groups referred to here as segregation groups. Materials falling within a segregation group are considered to have certain similar chemical properties and, although not exhaustive in nature, the materials belonging to each group include those substances identified in section 3.1.4 of the IMDG Code as set forth in § 176.83(m).

(b) * * *

Code	Provisions
	* * * * *
133	Stow ''separated from'' sulfur.
134	Stow ''separated from'' UN2716.
135	Stow ''Separated from'' mercury and mercury compounds.
136	Stow ''Separated from'' carbon tetrachloride.
137	For arsenic sulphides, Stow ''separated from'' acids.
138	Stow ''Separated from'' peroxides.
139	Stow ''Separated from'' mercury salts.
140	Stow ''Separated from'' UN3052 and UN3461.
141	Stow ''away from'' radioactive materials.
142	Packages in cargo transport units must be stowed so as to allow for adequate air circulation throughout the cargo.
143	Prohibited on any vessel carrying explosives (except explosives in Division 1.4, Compatibility group S).
	* * * * *

* * * * *

(c) * * *

(2) * * *

Note	Provision
	* * * * *
19E	''Away from'' explosives containing chlorates or perchlorates.
	* * * * *
22E	''Away from'' ammonium compounds and explosives containing ammonium compounds or salts.
23E	''Separated from'' Division 1.4 and ''separated longitudinally by an intervening complete compartment or hold from'' Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.
	* * * * *

* * * * *

■ 61. In § 176.116, paragraph (c) is revised and a new paragraph (f) is added to read as follows:

§ 176.116 General stowage conditions for Class 1 (explosive) materials.

* * * * *

(c) *Security:* All compartments, magazines, and cargo transport units containing Class 1 (explosive) materials must be locked or suitably secured in order to prevent unauthorized access.

* * * * *

(f) *Under deck stowage of Class 1 (explosive) materials allocated stowage categories 09 and 10:*

(1) These Class 1 (explosive) materials must not be stowed in the same compartment or hold with other cargo that is readily combustible (such as items packaged in straw).

(2) The position of stowage of these Class 1 (explosive) materials must be such as to maintain direct access to the hatchway by not overstowing with other cargo except for other Class 1 (explosive) materials.

(3) In all cases, all cargo within the compartment or hold, including Class 1 (explosive) materials stowed in cargo transport units, must be secured so as to eliminate the possibility of significant movement. Where an entire deck is used as a magazine, the stowage must be so arranged that the Class 1 (explosive) materials stowed therein must be removed from the ship before working any cargo in any decks above or below the space in the same hold.

§ 176.122 [Removed and Reserved]

■ 62. Section 176.122 is removed and reserved.

§ 176.124 [Removed and Reserved]

■ 63. Section 176.124 is removed and reserved.

■ 64. Section 176.128 is revised to read as follows:

§ 176.128 Magazine stowage types ''A'', ''C'' and Special Stowage.

(a) The stowage arrangements of Class 1 (explosive) substances and certain articles are subject to varying levels of containment, (except for compatibility group S substances), when stowed below deck. The levels are dependent on the hazard presented and the nature of the particular explosives involved. Columns (10A) and (10B) of the Hazardous Materials Table specify the stowage applicable to each substance or article. The different levels of containment are defined below as ''A'', ''C'' and ''Special''.

(b) *Magazine stowage type ''A''.* Magazine stowage type A is required for those substances that must be kept clear of steelwork.

(c) *Magazine stowage type ''C''.* Magazine stowage type C is required for

those substances in compatibility group A.

(d) *Special Stowage.* Special Stowage is required for Explosive substances, n.o.s. in compatibility groups G or L, and for articles in compatibility groups G, H, L and K, which are particularly hazardous.

§ 176.132 [Removed and Reserved]

■ 65. Section 176.132 is removed and reserved.

■ 66. Section 176.133 is revised to read as follows:

§ 176.133 Magazine stowage Type C.

The construction requirements for magazine stowage type C are the same as for a closed cargo transport unit in § 176.63(e). In addition, the magazine must be located as near as practicable to the centerline of the vessel and must not be closer to the vessel's side than a distance equal to one-eighth of the vessel's beam or 2.4 m (8 feet), whichever is less.

■ 67. Section 176.136 is revised to read as follows:

§ 176.136 Special stowage.

(a) Special stowage is required for certain articles presenting both explosive and chemical hazards, such as smoke or lachrymatory (compatibility group G or H), toxic (compatibility group K), or substances and articles which present a special risk (compatibility group L). Except as permitted in paragraph (c) of this section, Class 1 (explosive) materials requiring special stowage must be stowed on deck unless such stowage is impracticable and the COTP authorizes special stowage below deck. Where on deck stowage is recommended and an alternative stowage below deck is permitted by the COTP, the stowage must always be subject to special stowage.

(b) Class 1 (explosive) materials for which special stowage is required must be stowed as far away as practicable from living, accommodation, and working areas, and may not be overstowed. Closed cargo transport units in which such Class 1 (explosive) materials are stowed may not be located closer to the vessel's side than a distance equal to one-eighth of the vessel's beam or 2.4 m (8 feet), whichever is less.

(c) Class 1 (explosive) materials in compatibility groups G and H may be transported in steel magazines or in freight containers. If a freight container is used for this purpose, the floor of the freight container must be leakproof; for example, an all-metal container may be used and a fillet of cement or other material worked across the bottom of the door opening.

(d) Class 1 (explosive) materials stowed in one compartment may not be of more than one compatibility group, except the COTP may allow Class 1 (explosive) materials of compatibility groups G and H in separate steel magazines to be stowed in the same compartment, not less than 3 m (10 feet) apart.

(e) Class 1 (explosive) materials in compatibility groups K and L must be stowed in a steel magazine regardless of the stowage position in the vessel.

■ 68. In § 176.138, paragraph (a) is revised to read as follows:

§ 176.138 Deck stowage.

(a) [Reserved]

* * * * *

■ 69. In § 176.142, paragraph (a) is revised to read as follows:

§ 176.142 Hazardous materials of extreme flammability.

(a) Except as allowed by paragraph (b) of this section, certain hazardous materials of extreme flammability may not be transported in a vessel carrying Class 1 (explosive) materials. This prohibition applies to the following liquid hazardous materials:

Carbon disulfide.	UN1131 ...	Class 3
Diethylzinc	UN1366 ...	Division 4.2
Dimethylzinc ...	UN1370 ...	Division 4.2
Magnesium alkys.	UN3053 ...	Division 4.2
Methyl phosphonous di-chloride, *pyrophoric liquid*..	NA2845 ...	Division 6.1
Nickel carbonyl	UN1259 ...	Division 6.1
Pyrophoric liquid, inorganic, n.o.s..	UN3194 ...	Division 4.2
Pyrophoric liquid, organic, n.o.s..	UN2845 ...	Division 4.2
Organometallic substance, liquid, pyrophoric..	UN3392 ...	Division 4.2
Organometallic substance, liquid, pyrophoric, water-reactive..	UN3394 ...	Division 4.2

* * * * *

■ 70. In § 176.144, paragraphs (a), (b), (c) and (e) are revised to read as follows:

§ 176.144 Segregation of Class 1 (explosive) materials.

(a) Except as provided in § 176.145 of this subchapter, stowage of Class 1 (explosive) materials within the same compartment, magazine, or cargo transport unit is subject to provisions contained in table 176.144(a).

TABLE 176.144(A)—AUTHORIZED MIXED STOWAGE FOR EXPLOSIVES

[An "X" indicates that explosives in the two different compatibility groups reflected by the location of the "X" may not be stowed in the same compartment, magazine, or cargo transport unit]

Compatibility groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A	.....	X	X	X	X	X	X	X	X	X	X	X	X
B	X	.....	X	X	X	X	X	X	X	X	X	X	.....
C	X	X	.....	6	6	X	1	X	X	X	X	4	.....
D	X	X	6	.....	6	X	1	X	X	X	X	4	.....
E	X	X	6	6	.....	.....	1	X	X	X	X	4	.....
F	X	X	X	X	X	X	X	X	X	X	X	X	.....
G	X	X	1	1	1	X	.....	X	X	X	X	X	.....
H	X	X	X	X	X	X	X	.....	X	X	X	X	.....
J	X	X	X	X	X	X	X	X	.....	X	X	X	.....
K	X	X	X	X	X	X	X	X	X	.....	X	X	.....
L	X	X	X	X	X	X	X	X	X	X	2	X	X
N	X	X	4	4	4	X	X	X	X	X	X	3	5
S	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	5	.....

NOTES: 1. Explosive articles in compatibility group G, other than fireworks and those requiring special stowage, may be stowed with articles of compatibility groups C, D, and E, provided no explosive substances are carried in the same compartment, magazine or cargo transport unit.

2. Explosives in compatibility group L may only be stowed in the same compartment, magazine or cargo transport unit with identical explosives within compatibility group L.
3. Different types of articles of Division 1.6, compatibility group N, may only be transported together when it is proven that there is no additional risk of sympathetic detonation between the articles. Otherwise they must be treated as division 1.1.
4. When articles of compatibility group N are transported with articles or substances of compatibility groups C, D or E, the goods of compatibility group N must be treated as compatibility group D.
5. When articles of compatibility group N are transported together with articles or substances of compatibility group S, the entire load must be treated as compatibility group N.
6. Any combination of articles in compatibility groups C, D and E must be treated as compatibility group E. Any combination of substances in compatibility groups C and D must be treated as the most appropriate compatibility group shown in Table 2 of § 173.52 taking into account the predominant characteristics of the combined load. This overall classification code must be displayed on any label or placard on a unit load or cargo transport unit as prescribed in subpart E (Labeling) and subpart F (Placarding).

(b) Where Class 1 (explosive) materials of different compatibility groups are allowed to be stowed in the same compartment, magazine, or cargo transport unit, the stowage arrangements must conform to the most stringent requirements for the entire load.

(c) Where a mixed load of Class 1 (explosive) materials of different hazard divisions and/or stowage arrangements is carried within a compartment, magazine, or cargo transport unit, the entire load must be treated as belonging to the hazard division having the greatest hazard. (For example, if a load of Division 1.1 (explosive) materials is mixed with Division 1.3 (explosive) materials, the load is treated as a Division 1.1 (explosive) material as defined in § 173.50(b) of this subchapter and the stowage must conform to the most stringent requirements for the entire load).

* * * * *

(e) Segregation on deck: When Class 1 (explosive) materials in different compatibility groups are carried on deck, they must be stored not less than 6 m (20 feet) apart unless they are allowed under Table 176.144(a) to be stowed in the same compartment, magazine, or cargo transport unit.

* * * * *

■ 71. In § 176.146, paragraph (d)(1) is revised to read as follows:

§ 176.146 Segregation from non-hazardous materials.

* * * * *

(d) In order to avoid contamination:

(1) An explosive substance or article which has a secondary POISON hazard label must be stowed ''separated from'' all foodstuffs, except when such materials are stowed in separate closed cargo transport units, the requirements for ''away from'' segregation apply.

* * * * *

§ 176.168 [Amended]

■ 72. In § 176.168, the undesignated center heading before § 176.168 is revised to read ''CARGO TRANSPORT UNITS AND SHIPBORNE BARGES''.

■ 73. In § 176.170, a new paragraph (b) is added to read as follows:

§ 176.170 Transport of Class 1 (explosive) materials in freight containers.

* * * * *

(b) Freight containers loaded with Class 1 (explosive) materials, except for explosives in Division 1.4, must not be stowed in the outermost row of containers.

* * * * *

■ 74. In § 176.174, paragraphs (a) and (b) are revised to read as follows:

§ 176.174 Transport of Class 1 (explosive) materials in shipborne barges.

(a) Fixed magazines may be built within a shipboard barge. Freight containers may be used as magazines within a barge.

(b) Shipborne barges may be used for the carriage of all types of Class 1 (explosive) materials. When carrying Class 1 (explosive) materials requiring special stowage, the following requirements apply:

(1) Class 1 (explosive) materials in compatibility group G or H must be stowed in freight containers.

(2) Class 1 (explosive) materials in compatibility group K or L must be stowed in steel magazines.

* * * * *

§ 176.600 [Amended]

■ 75. In § 176.600, in paragraph (a), in the last sentence, the wording ''closed transport units'' is removed and the wording ''closed cargo transport units'' is added in its place.

PART 178—SPECIFICATIONS FOR PACKAGINGS

■ 76. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 77. In § 178.274, paragraph (f)(l)(v) is revised to read as follows:

§ 178.274 Specifications for UN portable tanks.

* * * * *

(f) * * *

(l) * * *

(v) The rated flow capacity of the spring loaded pressure relief devices, frangible disc or fusible elements in standard cubic meters of air per second (m^3/s). For spring loaded pressure relief device the rated flow capacity shall be determined according to ISO 4126–1 (IBR, see § 171.1 of this subchapter); and

* * * * *

■ 78. In § 178.275, paragraph (i)(2) is revised to read as follows:

§ 178.275 Specification for UN Portable Tanks intended for the transportation of liquid and solid hazardous materials.

* * * * *

(i) * * *

(2) The combined delivery capacity of the pressure relief system (taking into account the reduction of the flow when the portable tank is fitted with frangible-discs preceding spring-loaded pressure-relief devices or when the spring-loaded pressure-relief devices are provided with a device to prevent the passage of the flame), in condition of complete fire engulfment of the portable tank must be sufficient to limit the pressure in the shell to 20% above the start to discharge pressure limiting device (pressure relief device). The total required capacity of the relief devices may be determined using the formula in paragraph (i)(2)(i)(A) of this section or the table in paragraph (i)(2)(iii) of this section.

* * * * *

■ 79. In § 178.276, paragraphs (a)(4)(ii)(A), (d), and (e)(3) are revised to read as follows:

§ 178.276 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of non-refrigerated liquefied compressed gases.

(a) * * *

(4) * * *

(ii) * * *

(A) Not less than the pressure specified for each liquefied compressed gas listed in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313; and

* * * * *

(d) *Bottom openings.* Bottom openings are prohibited on portable tanks when the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter indicates that bottom openings are not allowed. In

this case, there may be no openings located below the liquid level of the shell when it is filled to its maximum permissible filling limit.

(e) * * *

(3) A portable tank intended for the transportation of certain liquefied compressed gases identified in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter must have a pressure relief device which conforms to the requirements of this subchapter. Unless a portable tank, in dedicated service, is fitted with a relief device constructed of materials compatible with the hazardous material, the relief device must be comprised of a frangible disc preceded by a reclosing device. The space between the frangible disc and the device must be provided with a pressure gauge or a suitable tell-tale indicator. This arrangement must facilitate the detection of disc rupture, pinholing or leakage which could cause a malfunction of the pressure relief device. The frangible disc must rupture at a nominal pressure 10% above the start-to-discharge pressure of the relief device.

* * * * *

■ 80. In § 178.602, paragraph (b) is revised to read as follows:

§ 178.602 Preparation of packagings and packages for testing.

* * * * *

(b) For the drop and stacking test, inner and single-unit receptacles other than bags must be filled to not less than 95% of maximum capacity (see § 171.8 of this subchapter) in the case of solids and not less than 98% of maximum in the case of liquids. Bags shall be filled to the maximum mass at which they may be used. The material to be transported in the packagings may be replaced by a non-hazardous material, except for chemical compatibility testing or where this would invalidate the results of the tests.

* * * * *

■ 81. In § 178.603, paragraphs (c) and (e)(2) introductory text are revised to read as follows:

§ 178.603 Drop test.

* * * * *

(c) *Special preparation of test samples for the drop test.*

(1) Testing of plastic drums, plastic jerricans, plastic boxes other than expanded polystyrene boxes, composite packagings (plastic material), and combination packagings with plastic inner packagings other than plastic bags intended to contain solids or articles must be carried out when the temperature of the test sample and its contents has been reduced to −18 °C (0 °F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at −18 °C (0 °F) or lower are considered acceptable test liquids. Test samples prepared in this way are not required to be conditioned in accordance with § 178.602(d).

* * * * *

(e) * * *

* * * * *

(2) For liquids in single packagings and for inner packagings of combination packagings, if the test is performed with water:

* * * * *

■ 82. In § 178.810, paragraph (b)(3) is revised to read as follows:

§ 178.810 Drop test.

* * * * *

(b) *Special preparation for the drop test.*

* * * * *

(3) Rigid plastic IBCs and composite IBCs with plastic inner receptacles must be conditioned for testing by reducing the temperature of the packaging and its contents to −18 °C (0 °F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at −18 °C (0 °F) or lower are considered acceptable test liquids, and may be considered equivalent to water for test purposes. IBCs conditioned in this way are not required to be conditioned in accordance with § 178.802.

* * * * *

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

■ 83. The authority citation for part 180 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 84. In § 180.350, paragraph (c) is revised to read as follows:

§ 180.350 Applicability and definitions.

* * * * *

(c) Routine maintenance of IBCs is the routine performance on:

(1) Metal, rigid plastic or composite IBCs of operations such as:

(i) Cleaning;

(ii) Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment conforming to the original manufacturer's specifications provided that the leaktightness of the IBC is verified; or

(iii) Restoration of structural equipment not directly performing a hazardous material containment or discharge pressure retention function so as to conform to the design type (for example, the straightening of legs or lifting attachments), provided the containment function of the IBC is not affected.

(2) Plastics or textile flexible IBCs of operations, such as:

(i) Cleaning; or

(ii) Replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification; provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

■ 85. In § 180.352, paragraph (d)(1)(iv) is revised and a new paragraph (d)(1)(v) is added to read as follows:

§ 180.352 Requirements for retest and inspection of IBCs.

* * * * *

(d) * * *

(1) * * *

(iv) Retests and inspections performed in accordance with paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the requirements for the 2.5 and five year periodic tests and inspections required by paragraph (b) of this section, as applicable.

(A) The County in which the routine maintenance was carried out; and

(B) The name or authorized symbol of the party performing the routine maintenance.

(v) Retests and inspections performed in accordance with paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the requirements for the 2.5 and five year periodic tests and inspections required by paragraph (b) of this section, as applicable.

(e) *Requirements applicable to routine maintenance of IBCs.* Except for routine maintenance of metal, rigid plastics and composite IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing the routine maintenance shall durably mark the IBC near the manufacturer's UN design type marking to show the following:

(1) The County in which the routine maintenance was carried out; and

(2) The name or authorized symbol of the party performing the routine maintenance.

(f) *Retest date.* The date of the most recent periodic retest must be marked as

provided in § 178.703(b) of this subchapter.

(g) *Record retention.* The owner or lessee of the IBC must keep records of periodic retests, initial and periodic inspections, and tests performed on the IBC if it has been repaired. Records must include design types and packaging specifications, test and inspection dates, name and address of test and inspection facilities, names or name of any persons conducting tests or inspections, and test or inspection specifics and results. Records must be kept for each packaging at each location where periodic tests are conducted, until such tests are successfully performed again or for at least 2.5 years from the date of the last test. These records must be made available for inspection by a representative of the Department on request.

* * * * *

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Elaine E. Joost,

Acting Deputy Administrator, Research and Special Programs Administration.

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