



# Federal Register

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## **Part II**

# **Department of Transportation**

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**Research and Special Programs  
Administration**

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**49 CFR Parts 171, 172, 173, etc.**

**Harmonization With the United Nations  
Recommendations, International Maritime  
Dangerous Goods Code, and International  
Civil Aviation Organizations Technical  
Instructions; Proposed Rule**

**DEPARTMENT OF TRANSPORTATION****Research and Special Programs Administration**

**49 CFR Parts 171, 172, 173, 174, 175, 176, 177, 178 and 180**

[Docket No. RSPA-2000-7702 (HM-215D)]

RIN 2137-AD41

**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:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** RSPA proposes to amend the Hazardous Materials Regulations (HMR) to maintain alignment with international standards by incorporating various changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. In addition, RSPA proposes to revise the requirements for intermediate bulk containers and UN portable tanks for alignment with international 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 proposed revisions are necessary to facilitate the transport of hazardous materials in international commerce.

**DATES:** Comments must be received by December 22, 2000.

**ADDRESSES:** Address comments to the Dockets Management System, U.S. Department of Transportation, Room PL 401, 400 Seventh St., SW., Washington, DC 20590-0001. Comments should identify the docket number RSPA-00-7702 (HM-215D) and be submitted in two copies. If you wish to receive confirmation of receipt of your comments, include a self-addressed stamped postcard. You may also submit and review all comments by accessing the Docket Management System website at <http://dms.dot.gov>. Click on "Help and Information" to obtain instructions for filing a document electronically. The Dockets Unit is located on the Plaza Level of the Nassif Building at U.S. DOT

at the above address. Public dockets may be reviewed between the hours of 10 a.m. and 5 p.m., Monday through Friday, except on Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Joan McIntyre, Office of Hazardous Materials Standards, telephone (202) 366-8553, or Bob Richard, Assistant International Standards Coordinator, telephone (202) 366-0656, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

On December 21, 1990, the Research and Special Programs Administration (RSPA) (hereafter, "we" and "our" means "RSPA") published a final rule based on the UN Recommendations [Docket HM-181; 55 FR 52402] which comprehensively revised the Hazardous Materials Regulations (HMR), 49 CFR parts 171 to 180, with respect to hazard communication, classification, and packaging requirements. The intended effect of the rule was to facilitate the international transportation of hazardous materials by ensuring a basic consistency between the HMR and international regulations, while at the same time ensuring the safe transportation of hazardous materials.

The UN Recommendations are not regulations, but are recommendations issued by the UN Committee of Experts on the Transport of Dangerous Goods. 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 Dangerous Goods Panel). In 49 CFR 171.12, the HMR authorize 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. Offering, accepting and transporting hazardous materials by aircraft, in conformance with the ICAO Technical Instructions, and by motor vehicle either before or after being transported by aircraft, are authorized in § 171.11, subject to certain conditions and limitations.

Since publication of the 1990 final rule, we have issued three additional international harmonization final rules, (Dockets HM-215A, 59 FR 67390; HM-215B, 62 FR 24690; and HM-215C, 64 FR 10742). The rules provided

additional harmonization with international air and sea 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 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. Therefore, in our efforts to continue the alignment of the HMR with international requirements, this NPRM proposes changes to the HMR based on the eleventh revised edition of the UN Recommendations, the 2001-2002 ICAO Technical Instructions and Amendment 30 to the IMDG Code, all of which become effective January 1, 2001. Petitions for rulemaking pertinent to harmonization with international standards and the facilitation of international transportation are also addressed in this NPRM and serve as the basis of certain proposed changes. Other proposed changes are based on feedback from the regulated industry, RSPA and other DOT modal administrations, including a few proposed editorial clarifications and a Class 1 (explosives) placarding allowance for certain compatibility groups. Unless otherwise stated, the revisions are proposed for harmonization with international standards.

**II. Overview of Proposed Changes in this NPRM**

Proposed amendments to the HMR in this NPRM include:

- Incorporation by reference of the updated ICAO Technical Instructions, IMDG Code and UN Recommendations and addition of incorporation by reference of six current standards which include an International Atomic Energy Agency (IAEA) safety standard, an IMO safety standard, three International Organization for Standardization (ISO) standards and one American Society for Testing Materials (ASTM) standard.
- Amendments to the Hazardous Materials Table (HMT) which would add, revise or remove certain proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, bulk packaging requirements, and passenger and cargo aircraft maximum quantity limitations. Proper

- shipping name amendments include the proposal to replace the word "inhibited" with "stabilized." Entry removals include certain domestic entries for which corresponding UN entries are included in the HMT.
- Revision of vessel stowage category definitions and codes for Class 1 (explosive) materials.
  - Revision of shipping paper requirements for sea transport.
  - Addition, removal and revision of certain entries to the List of Marine Pollutants.
  - Addition, removal and revision of special provisions, including removal of current T codes and IBC bulk provisions and addition of UN portable tank codes and IBC special packing provisions, consistent with those in the UN Recommendations.
  - Removal of the requirement to distinguish between primary and subsidiary risk labels and placards.
  - Addition and revision to the list of organic peroxides and the list of self-reactive substances.
  - Revision of the requirements pertaining to the transportation of samples.
  - Revision of intermediate bulk container (IBC) requirements including amendments to the IBC commodity sections in §§ 173.240, 173.241, 173.242, 173.243 and 173.247, and addition of UN IBC packing instructions and special IBC packing provisions in part 172.
  - Incorporation of the design, construction and use requirements for UN portable tanks.
  - Consolidation of current portable tank maintenance, approval and use requirements.
  - Inclusion of flexible grandfather provisions for the continued use of IM 101, IM102 and DOT 51 portable tanks.
  - Removal of specifications for DOT 52 and 53 portable tanks and the provisions for their continued use.
  - Incorporation of a provision for the use of the "W" mark for IBCs.
  - Inclusion of a 12 mm minimum marking size for IBCs.
  - Revision of minimum thickness requirements for metal IBCs.
  - Revision of several explosives packing methods to allow a broader selection of authorized packagings.
  - Revision of provisions for cigarette lighters and alcoholic beverages carried aboard aircraft.
  - Allowance of the display of one placard when certain explosive compatibility groups are transported together.
  - Revision of lithium battery requirements.

### III. Summary of Regulatory Changes by Section

#### Part 171

*Section 171.7.* We propose to update the incorporation by reference for the ICAO Technical Instructions, the IMDG Code, the UN Recommendations and the UN Manual of Tests and Criteria. In addition, we propose to add an ASTM standard, the current edition of the IAEA safety standard, an IMO standard, and three ISO standards.

All of the updated incorporation by reference material will become effective January 1, 2001 and would be updated as follows:

- The ICAO Technical Instructions—2001–2002 edition.
- The IMDG Code—Amendment 30.
- The UN Recommendations—eleventh revised edition.
- The UN Manual of Tests and Criteria—third revised edition.

Additionally, all of the proposed added incorporation by reference material would become effective January 1, 2001 and would be added as follows:

- ASTM's "E 112–96 Standard for Test Methods for Determining Average Grain Size" would be added to define "fine grain steel" as included in the proposed incorporation of the UN portable tank specifications in § 178.274.
- IAEA's current "Regulations for the Safe Transport of Radioactive Material, No. ST–1," 1996 edition would be added while retaining the previous edition entitled, "Regulations for the Safe Transport of Radioactive Material, Safety Series No. 6." The ST–1 requirements were incorporated in the IMDG Code and the ICAO Technical Instructions which will both be effective January 1, 2001. Adding the updated ST–1 edition and retaining Safety Series No. 6 would afford the flexibility necessary in an interim period when international shipments are required to be in accordance with the ST–1 edition. Domestic shipments would remain subject to the HMR requirements, which are based on Safety Series No. 6 pending amendment of these requirements under a separate rulemaking.
- IMO'S current "International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships" (INF Code) would be added. The IMO Maritime Safety Committee adopted the INF Code for incorporation into the IMDG Code. In addition, the INF Code is being made

mandatory for international transportation effective January 1, 2001, through an amendment to Chapter VII of the International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974, as amended). The incorporation by reference and inclusion of the proposed new § 176.720 requirement for a vessel carrying irradiated nuclear fuel, plutonium and high-level radioactive wastes would align the HMR with these international standards. (Also, see § 176.2. and § 176.720.)

- Finally, we are proposing to add three ISO standards to coincide with the proposed incorporation of the UN portable tank requirements. The standards are as follows: "ISO 1496–3 Series 1 freight containers—Specification and testing," 1996 edition; "ISO 4126–1 Safety valves—Part 1: General Requirements," 1991 edition; and, "ISO 6892 Metallic materials—Tensile testing," 1984 edition.

*Section 171.8.* We would add four new definitions to § 171.8. "Large packaging" would be added to correspond with the proposed addition of an approval provision that would allow the use of large packagings which comply with requirements in the UN Recommendations (see § 178.801). Large packagings are UN-marked bulk packagings which are very similar to IBCs, with the exception that they contain inner packagings. "Liner" would be added for clarification purposes. "Stabilized" would be added in conjunction with the proposal to replace the word "inhibited" with "stabilized" in proper shipping names (see § 172.101). Finally, "UN portable tank" would be added in conjunction with the proposal to include requirements for the design, construction and use of UN portable tanks (see §§ 178.274, 178.275, 178.276, 178.277).

*Section 171.10.* To correspond with the proposed incorporation of the UN portable tank specifications, we would add the unit of measure for "Newton" into the Table of Conversion Factors in paragraph (c)(2).

*Section 171.11.* We propose to add a new paragraph (d)(17) to ensure conformance with the current approval provision in § 173.128(d) which requires an approval from the Associate Administrator for the offering for transportation or transport of organic peroxides that are not identified by technical name in the § 173.225(b) Organic Peroxide Table. (We also propose to add the new paragraph under §§ 171.12 and 171.12a.)

*Section 171.12.* Paragraph (b)(3) would be revised by adding a limitation to the use of the IMDG Code by requiring that viscous flammable liquids, which are excepted from the IMDG Code when in a packaging of less than 450 liters (118.9 gallons) capacity, are subject to the HMR. We do not agree that the IMDG Code exception provides an adequate level of safety and opposed its incorporation in the ICAO Technical Instructions, the IMDG Code and UN Recommendations. We believe this requirement is necessary to ensure that importers and exporters are aware that these viscous flammable liquids are regulated in the United States. We also propose to add a new paragraph (b)(19) to ensure conformance with the current approval provision in § 173.128(d), which requires an approval from the Associate Administrator for the offering for transportation or transport of organic peroxides that are not identified by technical name in the § 173.225(b) Organic Peroxide Table. Finally, we proposed to revise paragraph (d) to reflect the addition of the current edition of the IAEA "Regulations for the Safe Transport of Radioactive Material, No. ST-1," 1996 edition. (See § 171.7 for discussion concerning the addition of the updated ST-1 standards.)

*Section 171.12a.* We propose to add a new paragraph (b)(18) to ensure conformance with the current approval provision in § 173.128(d) which requires an approval from the Associate Administrator for the offering for transportation or transport of organic peroxides that are not identified by technical name in the § 173.225(b) Organic Peroxide Table.

*Section 171.14.* We propose to revise paragraphs (d) and (d)(1) to authorize a delayed implementation date for the amendments adopted in the HM-215D final rule. The effective date of this final rule would be October 1, 2001. However, we would authorize a voluntary compliance date of January 1, 2001. This authorization would allow shippers to prepare their international shipments in accordance with the new ICAO Technical Instructions, the IMDG Code and the HMR provisions. We also would authorize a delayed mandatory compliance date comparable to the transition provisions provided in the final rule under Docket HM-215C. The delayed mandatory compliance date would offer sufficient time to implement the new provisions and deplete current stocks of shipping papers, labels, placards and packagings affected by the new requirements.

We would revise paragraph (d)(2) to permit intermixing old and new (HM-

215D) hazard communication requirements until October 1, 2002.

We would add a new paragraph (d)(4) to allow the use of the T code special provisions (proposed to be assigned to a hazardous material in Column (7) of the HMT) in effect on December 31, 2000 until January 1, 2010 for hazardous materials offered for transportation in IM and IMO portable tanks. This proposal is consistent the IMDG Code and would minimize any undue regulatory burden.

#### Part 172

*Section 172.101.* For alignment with international standards, we would revise paragraph (c)(11) and add new paragraphs (k)(6) through (k)(20). Consistent with the eleventh revised edition of the UN Recommendations, we would revise paragraph (c)(11) for materials transported as samples which are assigned a tentative proper shipping name, hazard class, identification number and packing group. We would revise the requirements by requiring the word "SAMPLE" to be included in association with the proper shipping name and by prohibiting the samples from being packaged together with other hazardous materials. We also would add a new paragraph (c)(16) to allow for the inclusion of the qualifying words "liquid," "solid" or "molten," as applicable, to a proper shipping name.

Consistent with the new stowage categories and terminology contained in Amendment 30 of the IMDG Code, we would add new paragraphs (k)(6) through (k)(20) to include the IMDG vessel stowage category definitions for Class 1 (explosive) materials. (Also see preamble discussion under "The Hazardous Materials Table" and § 176.63.)

*The Hazardous Materials Table (HMT).* Proposed amendments to the HMT for the purpose of harmonizing with the eleventh revised edition of the UN Recommendations (unless otherwise stated) would include the following:

—For the entries, "Other regulated substances, liquid, n.o.s." and "Other regulated substances, solid, n.o.s.," we would add the letter "G" to Column (1). The letter "G," which denotes the n.o.s. and generic proper shipping names which are required to be supplemented with the technical names of the hazardous material (in parentheses and in association with the basic description), was inadvertently omitted in Docket HM-215C (64 FR 10742).

—We would add the following new entries: "Nitroglycerin mixture, desensitized, liquid, n.o.s. *with not more than 30% nitroglycerin by*

*mass,*" UN3357; "Propellant, solid," UN0501; "Refrigerating machines *containing flammable, non-toxic, liquefied gas,*" UN3358; "Rockets *with inert head,*" UN0502; and "1H-Tetrazole," UN0504.

—We would revise the entry, "Dangerous Goods in Machinery or Dangerous Goods in Apparatus" by replacing the identification number NA8001 with UN3363, designating a Class 9 assignment and revising Special Provision 136 (see § 172.102). These proposed changes reflect the adoption of the entry by the UN Committee of Experts and amendments agreed to by the ICAO Dangerous Goods Panel. The entry was added to the HMT under Docket HM-215C as NA8001 and assigned Special Provision 136 to prescribe the appropriate hazard class assignment. As explained in HM-215C, the entry was adopted in the ICAO Technical Instructions to provide an exception from the UN packaging performance tests for equipment, machinery or apparatus containing small quantities of hazardous materials. For machinery or apparatus not specifically listed in the HMT, the entry provides a practical means of describing and transporting machinery or apparatus containing small quantities of hazardous materials. In HM-215C, we stated that upon the assignment of a UN identification number, we would revise the entry accordingly. This was accomplished in the eleventh revised edition of the UN Recommendations in which UN3363 was assigned and this entry was assigned to Class 9. The ICAO Technical Instructions were amended consistent with this UN decision. Therefore, based on the above discussion, we are proposing to revise the entry, "Dangerous Goods in Machinery or Dangerous Goods in Apparatus" by assigning it to Class 9, replacing the domestic identification number with an international identification number, and revising Special Provision 136.

—We are proposing to revise all proper shipping names containing the word "inhibited" by replacing "inhibited" with the word "stabilized." (Also, see proposed definition for "stabilized" in § 171.8.) Replacing the word "inhibited" with "stabilized" would recognize that, in addition to inhibition, other means of controlling self-reaction would be acceptable. The proposed allowance of additional means of stabilization and the proposed removal of certain domestic entries from the HMT (see domestic entry removals later in this section) would also address a petition for

- rulemaking (P-1304) requesting that we add a new domestic entry, "Methyl methacrylate monomer, uninhibited," Class 3, NA1247, PG II to the HMT.
- We would revise the following proper shipping names: "Lithium hypochlorite, dry or Lithium hypochlorite mixtures, dry," UN1471; "Printing ink, flammable," UN1210; and "Nitrocellulose membrane filters," UN3270.
  - For the entry, "Methacrylic acid, inhibited," UN2531, we would replace Packing Group III with Packing Group II.
  - We propose to remove various domestic entries that have assigned "NA" identification numbers. After reviewing the domestic entries, we determined that the HMR includes "UN" identification numbers assigned to entries that are equally appropriate in a number of instances, and in these instances the NA numbers are no longer necessary. Included in the proposed removals are seven domestic pesticide proper shipping names identified by the pesticide industry as no longer being used. These entries are: "Aldrin, *liquid*," NA2762; "Aldrin, *solid*," NA2761; "Dieldrin," NA2761; "Methyl parathion *liquid*," NA3018; "Methyl parathion *solid*," NA2783; "Parathion," NA2783 and "Tetraethyl pyrophosphate *solid*," NA3018.
  - We would add radioactive material (Class 7) entries consistent with new entries introduced in the UN Recommendations and IAEA's "Regulations for the Safe Transport of Radioactive Material, No. ST-1" and revise the current radioactive material entries in the HMR to allow for domestic shipment only.
  - For Class 1 (explosive) entries, we would revise Columns (10A) and (10B) to reflect the vessel stowage codes as they are presented in Amendment 30 to the IMDG Code. (See § 172.101(k) and § 176.63.)
  - For the international entry "Methanol," we would add a plus mark (+) in Column (1) of the HMT to indicate that this entry is classified with a subsidiary hazard of Class 6.1 on the basis of human experience.
  - We would remove the entry "Isobutyric anhydride," UN2530.
  - For the entry "Morpholine," UN2054, we would replace Class 3 with Class 8, replace Packing Group III with Packing Group I, and add Class 3 as the subsidiary hazard.
  - For "Organic peroxide type F, solid, temperature controlled," (UN3120), we would remove the Packing Group III entry that was due to a printing error in 49 CFR. The PG II entry would remain.
  - For approximately 14 Zone A and B toxic-by-inhalation entries, we would revise the quantity limits for transport by air to "forbidden." These revisions would be consistent with other toxic-by-inhalation entries in the HMT.
  - For the entry "Fire extinguishers *containing compressed or liquefied gas*" we would add Special Provision 110 to Column (7).
  - Based on a petition for rulemaking (P-1338) that we received from the Aluminum Company of America (Alcoa), we propose to add Special Provisions 128 and B115 to the entry, "Magnesium granules, coated, *particle size not less than 149 microns*," UN2950. Special Provision 128 allows material meeting the Class 8 definition to be classed as a Division 4.3 with a Class 8 subsidiary hazard. Special Provision B115 authorizes the use of certain non-specification bulk packagings when the material being transported is loaded dry. Special Provisions 128 and B115 are currently assigned to "Aluminum smelting by-products *or* Aluminum remelting by-products." Alcoa states that magnesium granules exhibit the same hazard properties as aluminum smelting and remelting by-products and behave similarly to these materials by occasionally meeting the criteria for both Division 4.3 and Class 8 materials. We agree with the petitioner and propose to add Special Provisions 128 and B115 to the entry "Magnesium granules, coated, *particle size not less than 149 microns*," UN2950. (Also, see § 172.102, Special Provision 128.)
  - For approximately 1,600 entries, we would revise Column (7) by harmonizing the HMR authorizations for IBCs with those contained in the UN Recommendations. In most cases, the UN Recommendations provide for greater flexibility in the use of different types of IBCs. However, in a few instances, the incorporation of the UN IBC requirements would further restrict the types of IBCs that are currently authorized for certain hazardous materials. For example, some Packing Group II liquid hazardous materials of Class 3, Division 6.1 and Class 8 that are currently authorized to be transported in composite IBCs with flexible inner receptacles (such as 31HZ2) would not be authorized in these types of IBCs if the UN provisions are adopted. For the benefit of the reader and to facilitate a review of the proposed amendments, we have included a table identifying all of the affected hazardous materials and indicating the current bulk assignments and the proposed IBC assignments. We would set out the IBC packaging requirements in a newly-created IBC Table under the Special Provisions section in § 172.102(c)(4). The table would consist of IBC Codes (using the designations 1B1-1B99) corresponding to the UN IBC packing instructions, and BB Codes corresponding to the UN IBC special packing provisions. We would assign the IBC packing instructions and the BB codes to specific hazardous materials in Column (7) of the § 172.101 HMT consistent with assignments in the UN Recommendations. In addition, we believe that consolidating the IBC requirements into one table would make it easier for readers to identify the authorized IBCs for specific hazardous materials and would enhance safety and international harmonization. As a result of this proposal, we would revise the bulk special provisions in § 172.102 (c)(3) to remove the current bulk codes relevant to the use of IBCs. We would also revise the current IBC packaging authorizations under §§ 173.240(d), 173.241(d), 173.242(d) and 173.243(d).
- This proposal also addresses a petition we received from the Rigid Intermediate Bulk Container Association (RIBCA) (P-1395) requesting that we amend the HMR to expand the use of IBCs consistent with new UN provisions. Specifically, the petitioner requested uniformity with the UN Recommendations by requesting that the HMR allow the use of rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle for certain liquids. We are in agreement with RIBCA's request; however, in the interest of harmonization, we believe it would be more beneficial to adopt the UN Recommendations' IBC packing instructions in totality, and, as such, present the proposal as discussed above.
- For purposes of the Government Printing Office's typesetting procedures, readers should be aware that for certain entries in the HMT, such as those with revised proper shipping names, the change may appear as a removal and addition, as opposed to a revision of the regulatory text in the Column (2) changes. Readers should review all changes appearing in the § 172.101 regulatory text for a complete view of the proposed changes.
- Appendix B to § 172.101.* For the readers' convenience, in Appendix B to § 172.101, List of Marine Pollutants, we

would revise paragraph "1" by referencing § 171.4, which contains the applicability and exceptions for offering for transportation or transporting marine pollutants. We would revise paragraph "2" to reflect the IMDG Code's provision for the use of two Class 9 proper shipping names when a marine pollutant is not listed by name or by synonym in the HMT and does not meet the definitions of Class 1 through 8. In addition, a number of materials would be added, removed or amended in the List of Marine Pollutants. Included is the proposed removal of the entry "EPTC (ISO)" which also was the subject of a petition for rulemaking (P-1360) requesting removal of the entry based on its removal from the IMDG Code. Various other entries previously identified as marine pollutants are proposed to be removed. All of the proposed amendments to the List of Marine Pollutants are consistent with the marine pollutants provided in Amendment 30 of the IMDG Code.

*Section 172.102.* We propose to revise, add and remove special provisions as follows:

- Special Provision 43 would be revised to include a provision which would except "Nitrocellulose membrane filters," UN3270 from the HMR requirements if shown not to meet the criteria for a Division 4.1 hazardous material, according to burn rate tests in Sub-section 33.2.1. of the UN Manual of Tests and Criteria, Part III.
- Special Provision 110 would be revised to more fully identify fire extinguishers that may be assigned to certain proper shipping names. The proposal would also provide for harmonization with the ICAO Technical Instructions. (We also propose to add the special provision to the entry, "Fire extinguishers containing compressed or liquefied gas." See § 172.101 proposed HMT changes.)
- Special Provision 128 would be revised based on the proposal to assign it to "Magnesium granules, coated, *particle size not less than 149 microns.*" (See § 172.101, proposed Column (7) changes.)
- Special Provision 136 would be revised to reflect the changes adopted by the UN Committee of Experts and the ICAO Dangerous Goods Panel for the entry "Dangerous Goods in Machinery or Dangerous Goods in Apparatus." (Also see § 172.101.) We would revise the special provision by removing the text specific to the determination of the hazard class based on the UN Committee of Experts' decision that items under this entry should be assigned to Class 9.
- A new Special Provision 139 would be added for two new proposed entries, "Radioactive material, transported under special arrangement, fissile" and "Radioactive material, transported under special arrangement *non-fissile or fissile-excepted.*" The special provision requires international shipments using the two entries to be made under an IAEA Certificate of Competent Authority to be issued by the U.S. Competent Authority. Domestic shipments transported under the two entries would be allowed only under a DOT exemption.
- A new Special Provision 142 would be assigned for the new entry "Nitroglycerin mixture, desensitized, liquid, n.o.s." The special provision would require the material to be approved by the Associate Administrator.
- A new Special Provision 143 would be added for the entry "Life-saving appliances, not self-inflating, containing dangerous goods as equipment." The special provision would clarify which articles may be transported under this entry.
- In conjunction with the proposal to revise and consolidate the IBC requirements (see § 172.101, Column (7) changes), we would make the following changes: revise the special provisions for bulk packagings in paragraph (c)(3) to exclude IBCs by revising Special Provisions B53 and B69 and removing Special Provisions B100, B101, B103 through B106 and B108 through B110, and a new paragraph (c)(4) would be added for special provisions specific to IBCs (BB Codes).
- The current T codes in paragraph (c)(7) would be revised to reflect the proposed incorporation of requirements for UN portable tanks and would apply to hazardous materials of Classes 2 through 9. The revised T codes would be consistent with those in the UN Recommendations and the IMDG Code and would supersede the current HMR IM portable tank T codes. The T code provisions would be required in addition to the proposed requirements in part 178. The codes specify the types of authorized portable tanks according to the specific hazardous material transported in the portable tank. Portable tank assignments for Zone A and Zone B toxic-by-inhalation liquids would remain consistent with their current assignments in the HMR. In instances where the UN requires a competent authority approval for transportation in portable tanks (such as when TP9 is assigned in the UN Recommendations), we have removed the approval provision. A transition period would be provided for the continued use of the existing T codes for IM portable tanks (see § 171.14(d)(5)).
- A new Special Provision W7 would be added for seven proposed new Class 7 entries and would assign the vessel stowage category "D," as defined in § 172.101(k)(4), to uranyl nitrate hexahydrate solution.
- A new Special Provision W8 would be added for four proposed new Class 7 entries and would assign the vessel stowage category "D," as defined in § 172.101(k)(4), to pyrophoric thorium metal or pyrophoric uranium metal.
- Finally, a new Special Provision W9 would be added for assignment to the entries, "Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry with more than 39 percent available chlorine (8.8 percent available oxygen)," UN1748; "Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures with not less than 5.5 percent but not more than 10 percent water," UN2880; and "Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine." UN2208. This proposed action would align the packaging requirements for these entries with those contained in Amendment 30 to the IMDG Code by authorizing certain packagings only when approved by the Associate Administrator.

*Section 172.203.* We are proposing to revise paragraphs (d)(11), (i) and (n). In paragraph (d)(11), we propose to allow an exception from the requirement to add the appropriate group notation to the shipping description for a shipment of low specific activity material or surface contaminated objects provided the symbols are contained in the proper shipping name.

In paragraph (i), we would add two additional shipping paper description requirements for transportation by vessel. The first amendment would be added as new paragraph (i)(5) and would require the flashpoint for a liquid hazardous material with a flashpoint of 61 °C or below to be included on shipping papers when transported by water. We received a petition (P-1402) from the Vessel Operators Hazardous Materials Association (VOHMA) requesting that we add an additional shipping paper description requirement to include the minimum flashpoint in degrees Celsius for Class 3 (flammable)

or combustible liquid hazardous materials. VOHMA stated that the amendment would help support compliance with the current stowage requirements in § 176.305(c) and the segregation requirements (Code 22 and 23, see § 176.84) as designated in Column (10B) of the § 172.101 Hazardous Materials Table. We agree with the petitioner's reasoning; however, for consistency with the IMDG Code, we propose to add the requirement to specify the flashpoint when it is 61 °C or below for all such liquid hazardous materials whether or not the primary hazard is Class 3. The second amendment to the additional shipping paper description requirements for transportation by vessel would be added as new paragraph (i)(6) and is based on comments from the USCG regarding further harmonization with the IMDG Code. The amendment would require subsidiary risks of a hazardous material that are not reflected in the proper shipping name to be included on shipping papers.

Finally, in paragraph (n), we are proposing to clarify that the shipping paper requirement for the word "HOT" to be placed immediately preceding the proper shipping names of hazardous materials that are transported as elevated temperature materials, is not required for proper shipping names containing the words "Molten" or "Elevated temperature."

*Sections 172.402, 172.405 and 172.411.* Consistent with the eleventh revised edition of the UN Recommendations, we are removing the requirement to differentiate between primary and subsidiary labels. Currently, primary labels are required to display the hazard class or division number in the lower corner of the label, while subsidiary labels may not display these numbers. We are proposing to amend the requirement which provides for two label specifications (one for primary hazards and one for subsidiary hazards) by removing the subsidiary hazard label specification. Upon adoption of this proposal, labels used to convey both primary and subsidiary hazards would display the appropriate hazard class or division number at the bottom of the label. This proposed change would provide relief by eliminating the need for shippers to stock two sets of labels. We also propose to allow labels meeting the current label specifications to continue to be displayed until October 1, 2005.

*Section 172.504.* Based on comments and our own initiative, we are proposing to allow the display of only one placard displaying one

compatibility letter when certain Class 1 materials (explosives) of different compatibility groups are transported together in a single transport vehicle or container. This proposal is consistent with the mixed packaging allowances in § 173.61.

*Section 172.519.* Consistent with the proposal to eliminate the distinction between primary and subsidiary labels, we would revise paragraph (b)(4) to eliminate the requirement for placards. In addition, we would incorporate a new paragraph (b)(4)(i) to permit subsidiary placards meeting the current placarding specifications (such as placards without the hazard class or division number displayed in the lower corner of the placard) to continue to be displayed provided they were permanently affixed before January 1, 2001. Non-permanently affixed subsidiary placards meeting the current placarding specifications would be allowed to be displayed until October 1, 2005 or until current stocks are depleted, whichever occurs first.

#### *Part 173*

*Section 173.2a.* Consistent with the eleventh revised edition of the UN Recommendations, we would revise Note 2 to exclude liquid and solid desensitized explosives. In addition, we would add the revised Note 2 to Class 3, PG I, II and III.

*Section 173.4.* Based on a request for clarification, we would revise paragraph (a) to clarify that the small quantity exceptions apply to packagings containing articles, as well as inner receptacles.

*Section 173.24b.* We would add a new paragraph (e) to address acceptance of foreign manufactured UN portable tanks that conform to the applicable provisions in the UN Recommendations on the Transport of Dangerous Goods and are manufactured in countries that provide reciprocal treatment for UN portable tanks manufactured in the United States.

*Section 173.28.* We would correct a reference in paragraph (d)(1)(ii). The paragraph currently references "§ 173.225(c)(5)" and would be corrected to read § 173.225(c)(3)."

*Section 173.32.* We are proposing to revise this section to provide requirements for all portable tanks by consolidating the requirements for the use of IM portable tanks currently in § 173.32(c) into a single section. We are proposing to consolidate the qualification and maintenance requirements in § 173.32(c) and move them to part 180, subpart G, with the qualification and maintenance requirements for IBCs, cargo tanks and

tank cars. We are also proposing to include a grandfather clause in this section (§ 173.32) to allow IM 101, 102 and DOT 51 portable tanks to continue to be constructed in accordance with the HMR until January 1, 2003. IM 101, 102 and DOT 51 portable tanks which are certified and approved prior to this date would be authorized for continued use provided they meet the applicable periodic inspection and test requirements proposed in part 180, subpart G. These requirements are currently in § 173.32b. On January 1, 2003, all newly manufactured portable tanks would be required to conform to the requirements for the design, construction and approval of UN portable tanks (see §§ 178.274, 178.275, 178.276 and 178.277). In addition, we are proposing to remove the provisions for the continued use of DOT Specification 52 and 53 portable tanks and ICC Specification portable tanks based on information we received that these portable tanks are no longer used. We specifically request comments with regard to removing these provisions.

*Section 173.32a.* We are proposing to remove § 173.32a and move its approval requirements for Specification portable tanks to proposed § 178.273. We believe that part 178 is a more appropriate location for these requirements and that the new section will prove to be more convenient for users of the HMR. We also propose to include similar requirements for the proposed incorporation of requirements for UN portable tanks.

*Section 173.32b.* We are proposing to remove § 173.32b and relocate the test requirements to part 180, subpart G, as discussed in § 173.32.

*Section 173.32c.* We are proposing to remove § 173.32c. The requirements for the use of all Specification portable tanks would be included in § 173.32, thereby precluding the need for this section.

*Section 173.61.* Based on our own initiative, for Class 1 (explosives) mixed packaging requirements, we would revise paragraph (e)(3) to allow explosives of compatibility group S that are allowed to be packaged with explosives of all other compatibility groups, except A and L, to be treated as belonging to any of the packaged compatibility groups except S. In addition, we would add a new paragraph (e)(8) to allow explosive articles of compatibility groups C, D, E and G, except for fireworks and articles requiring special packaging, to be treated as belonging to compatibility group E. This proposed revision corresponds with the current allowance contained in § 177.848(g).

*Section 173.62.* In paragraph (c), we would revise the Explosives Packing Instructions Table to authorize additional types of outer packagings in the following packing instructions: 112(a), 112(b), 112(c), 113, 115, 116, 130, 131, 134, 135, 136, 138, 140, 141, 142 and 144.

*Section 173.150.* We would revise paragraph (d) by clarifying that alcoholic beverages containing over 24% alcohol by volume are not excepted from regulation when transported by a passenger or crewmember on passenger-carrying aircraft. (See preamble discussion under § 175.10.)

*Section 173.162.* We would revise paragraph (a)(1) by clarifying that the types of packagings specified in the paragraph are combination packagings and that the glass, earthenware or rigid plastics are inner packagings. In addition, for these packagings, we would increase the net mass of 10 kg (22 pounds) for each packaging to 15 kg (33 pounds). This is consistent with Packing Instruction 800 in the UN Recommendations.

*Section 173.185.* We would revise § 173.185 to include a definition for equivalent lithium content for lithium ion cells and batteries and to provide the applicable aggregate lithium quantities relevant to excepting lithium ion cells and batteries from the requirements of the HMR.

*Section 173.224.* Consistent with the UN Recommendations, we would add the entry “2,2'-Azodi(isobutyronitrile) as a water-based paste” to the Self-Reactive Substances Table for substances that are not subject to the approval provisions of § 173.124(a)(2)(iii), provided all applicable provisions in the table are met. Finally, we would revise paragraph (b)(4) and remove paragraph (d) to allow Type F self-reaction substances to be transported in portable tanks under conditions specified in § 173.225(e) (see preamble discussion under § 173.225).

*Section 173.225.* We are proposing to amend the paragraph (b) Organic Peroxide Table by making various changes, such as revising several technical names, packing method authorizations and control temperatures. These proposed changes are consistent with the UN Recommendations. We are proposing to remove Notes “7” and “10” consistent with our proposed adoption of UN IBC 520 and add Notes “26” and “27” to specify the available oxygen content limitations for certain new organic peroxides formulations. We would revise paragraph (e) to incorporate the requirements from the eleventh revised

edition of the UN Recommendations relevant to the emergency venting devices for portable tanks used for the transportation of organic peroxides and self-reactive substances. This responds to NTSB recommendation (I-92-2) that asked us to “revise the requirements for pressure relief venting on DOT specification 57 portable tanks used to transport dicumyl peroxides and other products with similar rapid decomposition characteristics to ensure that the pressure relief systems prevent overpressure rupture of tanks from a rapid product decomposition reaction.” We propose to apply the recommended venting requirements to all portable tanks and IBCs, rather than just DOT Specification portable tanks. Additionally, the types of portable tanks authorized for type F organic peroxide and self-reactive substances would be expanded to include UN portable tanks. We propose to adopt the requirements in Portable Tank Instruction T23 and IBC Special Provision, IBC 520.

*Sections 173.240, 173.241, 173.242 and 173.243.* In each section's paragraph (c), we would remove Specification DOT 52 and 53 portable tanks as authorized packagings (see § 173.32) because we believe that these portable tanks are no longer used. In addition, we would authorize UN portable tanks. In conjunction with the proposal to revise the requirements for IBCs for alignment with international standards, we would revise paragraph (d) which specifies authorized IBCs in §§ 173.240, 173.241, 173.242 and 173.243 to reflect the proposed incorporation of IBC packing instructions and BB codes (see § 172.101, Column (7)).

*Section 173.247.* In paragraph (c), we would remove Specification DOT 52 and 53 portable tanks as authorized packagings (see § 173.32).

*Section 173.306.* Consistent with Packing Instruction P201 in the UN Recommendations, we would amend the paragraph (a)(4)(iii) conditions for transporting flammable, non-pressurized gas samples by revising the inner packagings limit from 2.5 L (0.66 gallons) to 5 L (1.3 gallons).

*Section 173.315.* We would revise paragraphs (a) and (i) to incorporate provisions for the use of UN portable tanks for the transportation of liquefied compressed gases, in addition to the requirements for DOT Specification 51 portable tanks. Revisions would refer to tank instruction T50 (see UN T Codes under § 172.102) for the transportation of liquefied compressed gases in UN portable tanks and would include minor differences in pressure relief device

requirements applicable to UN portable tanks.

#### Part 175

*Section 175.10.* For consistency with the ICAO Technical Instructions, we are proposing to revise paragraph (a)(10) to clarify that lighters containing “unabsorbed liquid fuel” are prohibited on one's person or in checked or carry-on baggage. We are proposing to revise exclusions for alcoholic beverages as carry-on and checked baggage to impose a per passenger quantity limit and to restrict the exceptions to alcoholic beverages in retail packagings containing not more than 70% alcohol. We are proposing to revise paragraph (a)(16) to exclude alcoholic beverages. Also, we are proposing to add new paragraph (a)(17) to specify that alcoholic beverages containing more than 24% and not more than 70% alcohol by volume, when carried by passengers or crew in checked or carry-on baggage, are not subject to the HMR if in retail packagings not exceeding 5 liters (1.3 gallons) with a total net quantity per person of 5 liters (1.3 gallons). These proposed changes are consistent with the ICAO Technical Instructions.

*Section 175.33.* For harmonization with the ICAO Technical Instructions, we would revise paragraph (a) introductory text to add a requirement that the written pilot notification must be accurate and legible.

*Section 175.78.* We would revise this section to update and align segregation requirements with recent changes adopted in the ICAO Technical Instructions which were based on a UN decision to remove the distinction between primary and subsidiary risk labels. Separate rows and columns would be provided for Divisions 5.1 and 5.2. We would add a new provision to clarify that packages with multiple risks would not need to be segregated from other packages bearing the same UN number.

*Section 175.85.* Consistent with a new provision adopted in the ICAO Technical Instructions, we would revise paragraph (a) to authorize main deck Class C cargo compartments. Currently, hazardous materials may be carried in a main deck cargo compartment of a passenger aircraft provided the compartment is inaccessible to passengers and it meets certification requirements for a Class B cargo compartment. (Class C cargo compartments differ from Class B cargo compartments in that Class C compartments are required to have a built-in fire extinguishing system, in



addition to smoke or fire detection systems.)

#### Part 176

*Section 176.2.* In conjunction with the proposal to incorporate a requirement for vessel cargo to be in compliance with the INF Code (see § 176.720), we would add a definition for “INF cargo” under the § 176.2 definitions.

*Section 176.63.* For the stowage of Class 1 (explosive) materials on board a vessel, we would add a stowage location definition for “closed cargo transport unit.” This proposed addition coincides with the proposed addition of the vessel stowage category definitions contained in Amendment 30 to the IMDG Code. (See § 172.101(k).)

*Section 176.84.* Consistent with the IMDG Code we would revise paragraph (b) Table of provisions and paragraph (c)(2) stowage provisions. In the paragraph (b) Table of provisions, we would add two new stowage provisions for assignment to the entries, “Calcium hypochlorite, dry *or* Calcium hypochlorite mixtures dry with more than 39 percent available chlorine (8.8 percent available oxygen),” “Calcium hypochlorite, hydrated *or* Calcium hypochlorite hydrated mixtures *with not less than 5.5 percent but not more than 10 percent water,*” and “Calcium hypochlorite mixtures, dry *with more than 10 percent but not more than 39 percent available chlorine.*” In the paragraph (c)(2), we would revise the list of notes for the stowage of Class 1 (explosive) material provisions.

*Section 176.128.* We would make an editorial change in § 176.128(c) by correcting an identification number.

*Section 176.136.* We would make an editorial change in § 176.136 by removing the word “portable.”

*Section 176.142.* Based on a comment from the National Cargo Bureau, Inc., in § 176.142, paragraph (a), we would revise the list of hazardous materials that may not be transported in a vessel carrying Class 1 (explosive) materials to reflect the most current proper shipping names and to add one extremely flammable material, “Methyl phosphonous dichloride, *pyrophoric liquid,*” NA2845.

*Section 176.720.* We would add a new section to require a vessel carrying INF cargo in international transportation to comply with the “International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships,” (INF Code, 1998, English edition). The INF Code was adopted by the International Maritime Safety Committee and will be effective January 1, 2001 under the IMDG Code.

#### Part 177

*Section 177.848.* In paragraph (g)(3)(vi), we inadvertently added the terms “special stowage” and “stowed” from the corresponding vessel section of the HMR (§ 174.81) under HM-215C (64 FR 10742). In this NPRM, we propose to correct the wording by removing “special stowage,” which is not applicable to this section, and replacing “stowed” with “loaded, transported and stored.” We received a joint petition from the American Trucking Associations (ATA) and the Institute of Makers of Explosives (IME) (P-1396) requesting additional clarification of this paragraph. The paragraph reads:

“(vi) “6” means 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 vehicle.”

In this paragraph and the corresponding paragraph in § 174.81, the petitioners request that the word “other” be inserted before the wording “explosive substances.” However, there is a distinction between the words “articles” and “substances.” This paragraph pertains to certain explosive articles allowed to be stowed if no explosive substances (not articles) are carried on the same vehicle.

#### Part 178

*Section 178.273.* We are proposing to add a new section by moving the current requirements for the approval of Specification portable tanks from § 173.32a to the proposed § 178.273. These current approval provisions will precede the requirements for UN portable tanks (as proposed in §§ 178.274 through 178.277).

*Sections 178.274, 178.275, 178.276 and 178.277.* Based on the eleventh revised edition of the UN Recommendations, we are proposing to incorporate four new sections into the HMR for the UN portable tank requirements. This proposed action is based on our own initiative and responds to a petition for rulemaking (P-1373). The requirements apply to the design and construction of portable tanks. The IMO Dangerous Goods, Solid Cargoes and Containers (DSC) Subcommittee agreed to incorporate the new harmonized UN multimodal portable tank requirements into the reformatted IMDG Code, Amendment 30. The reformatted IMDG Code is scheduled to become effective on January 1, 2001. The IMDG Code also includes a provision to allow for the continued use of portable tanks

designed and constructed under the current requirements (those in Amendments 29 or previous amendments to the IMDG Code as applicable, depending on the date of construction).

The IMO intends to allow construction under the new requirements on January 1, 2001, on a voluntary compliance basis, with a mandatory compliance date of January 1, 2003. On January 1, 2003, all new portable tanks will be required to be manufactured in accordance with the new requirements. For purposes of harmonization, we are proposing to incorporate the corresponding design, construction and use requirements for UN portable tanks in the HMR. In addition, in § 173.32 we are proposing to provide for the continued use of IM 101, 102 and DOT Specification 51 portable tanks, which is consistent with the provisions adopted by the IMO.

The design and construction requirements for UN portable tanks do not differ significantly from the existing IM 101 and 102 portable tanks and the DOT Specification 51 requirements. In general, the UN requirements are less restrictive. For example, 6 mm (0.2 inches) minimum thickness is required for most portable tanks, as opposed to the current minimum thickness of 6.35 mm (0.3 inches) for IM 101 and 102 portable tanks. While the majority of the proposed changes involve relaxations of the regulatory requirements, there would be implications for portable tank manufacturers, shippers and operators who transport hazardous materials in portable tanks, and efforts would need to be undertaken to familiarize those affected with the differences. For example, we would require UN portable tanks used for the transportation of liquefied compressed gases to be approved by a DOT-designated approval agency, and we would require all UN portable tanks to meet a 4 g impact test. In addition to portable tanks for liquids and liquefied compressed gases, we propose to incorporate requirements for portable tanks that are used to transport refrigerated liquefied gases (cryogenic liquids). Currently, requirements for portable tanks used for refrigerated liquefied gases are not specified in the HMR, and we authorize their use only under DOT exemptions. The differences between UN portable tanks and the current portable tank requirements include, but are not limited to the following:

—The proposed definition for portable tank includes multimodal tanks with a capacity of more than 450 liters (118.9 gallons). Previously, IMO Type

- 5 and DOT Specification 51 tanks intended for the transport of liquefied compressed gases were limited to a capacity of more than 1000 liters (264.2 gallons).
- The proposed design temperature range is defined as  $-40\text{ }^{\circ}\text{C}$  to  $50\text{ }^{\circ}\text{C}$  ( $-40\text{ }^{\circ}\text{F}$  to  $122.0\text{ }^{\circ}\text{F}$ ). This NPRM also proposes design temperatures to be considered for portable tanks subjected to severe climatic conditions. Current regulations specify  $-20\text{ }^{\circ}\text{C}$  to  $50\text{ }^{\circ}\text{C}$  ( $-4.0\text{ }^{\circ}\text{F}$  to  $122.0\text{ }^{\circ}\text{F}$ ).
  - The proposed UN leakage test for liquids specifies a test pressure not less than 25% of Maximum Allowable Working Pressure (MAWP). The current HMR requirements specify an internal pressure equivalent to MAWP, but not less than 0.2 bar (20.0 kPa) for liquids.
  - The proposed test requires that the design and construction of portable tanks must take into account the effects of fatigue during normal conditions of transport. Currently, this is not required in the HMR.
  - The proposed requirements specify an absolute minimum thickness of 3 mm (0.1 inches), regardless of the material used and regardless of whether additional protection is provided.
  - A rail impact test of 4 g would be required for all portable tanks meeting the definition of "Container" in the International Convention for Safe Containers (CSC).
  - The proposed requirements specify that the test pressure be 1.3 times the design pressure. Currently, under the HMR, DOT 51 portable tanks are required to have a test pressure of 1.5 times the design pressure; however, this is based on the vapor pressure of the hazardous material at  $115\text{ }^{\circ}\text{F}$  ( $46.1\text{ }^{\circ}\text{C}$ ), whereas the UN calculates the vapor pressure at  $65\text{ }^{\circ}\text{C}$  ( $149\text{ }^{\circ}\text{F}$ ). Therefore, the differences between 1.5 at  $46\text{ }^{\circ}\text{C}$  and 1.3 at  $65\text{ }^{\circ}\text{C}$  would not be significant.
  - The proposed requirements include a figure for thermal conductance for the thermal insulation systems of shells intended for the transport of liquefied compressed gases.
  - The proposed requirements include a definition for "Holding time" relevant to portable tanks used for the transportation of refrigerated liquefied gases. This is consistent with current HMR requirements in § 178.338–9 for cargo tanks.
  - The proposed requirements specify the effectiveness of the insulation system (heat influx in watts) based on a test using the portable tank.
  - The proposal allows the specified minimum values for austenitic steels

to be increased by 15% according to recognized material standards when greater values are provided in the material inspection certificates.

- The proposed requirements allow the combined capacity of all pressure relief devices to be sufficient to limit the pressure to 120% of the MAWP for liquefied compressed gases.
- The proposed requirements include a new filling limit for the transport of helium.

Based on the above discussion (§§ 178.273 through 178.277), five new sections are proposed to be added as follows: § 178.273 would be added by moving the current requirements for the approval of Specification portable tanks from § 173.32a and introducing similar requirements for UN portable tanks; § 178.274 would be added for the UN portable tank general design and construction requirements; § 178.275 would be added for the additional specifications for UN portable tanks intended for the transportation of liquid and solid materials of Classes 3 through 9; § 178.276 would be added for the additional requirements for UN portable tanks intended for the transportation of liquefied compressed gases; and § 178.277 would be added for the additional requirements for the design, construction, inspection and testing of UN portable tanks intended for the transport of refrigerated liquefied gases.

*Section 178.703.* Paragraph (a)(1) would be revised by incorporating a minimum height of 12 mm (0.5 inches) for IBC markings and by adding a requirement to allow use of the "W" mark for approval of equivalent IBC packagings, as provided for in § 178.801(i).

*Section 178.705.* We are proposing to revise the minimum wall thickness requirements to take into account the capacity of the IBC, as well as the IBC design type.

*Section 178.801.* In paragraph (i), we are proposing to add an approval provision for the use of large packagings, as defined in § 171.8 of this NPRM, provided the large packagings conform to the construction standards, performance testing and packaging marking as specified in UN Recommendations.

*Section 178.812.* Based on our own initiative, we would revise paragraph (c)(1) and add a new paragraph (c)(3) to add an alternate method for conducting the top lift test for flexible IBCs. Currently, the proposed alternate method is authorized in several approvals issued by the Associate Administrator.

#### Part 180

*Sections 180.601, 180.603, 180.605.* We propose to move the qualification and maintenance requirements for portable tanks to part 180. We believe that these requirements would be more appropriately placed in part 180 along with the qualification and maintenance requirements for cargo tanks, IBCs and tank cars. Therefore, we propose to add a new subpart, subpart G, to part 180 for the qualification and maintenance of portable tanks, and to include the incorporation of UN portable tanks as proposed in this NPRM.

#### IV. Rulemaking Analyses and Notices

##### A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This proposed 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. The proposed rule is not considered a significant rule under the Regulatory Policies and Procedures of the Department of Transportation [44 FR 11034]. Because of the minimal economic impact of this proposed rule, preparation of a regulatory impact analysis or regulatory evaluation is not warranted.

##### B. Executive Order 13132

This proposed rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 ("Federalism"). This proposed rule would preempt 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; or

(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 proposed rule addresses covered subject items (1), (2), (3), and (5) above and would preempt State, local, and Indian tribe requirements not meeting the "substantively the same" standard. This proposed rule is necessary to incorporate changes already adopted in international standards. If the changes proposed in this NPRM are not adopted in the HMR, U.S. companies, including numerous small entities competing in foreign markets, will be at an economic disadvantage. These companies would be forced to comply with a dual system of regulation. The proposed changes are intended to avoid this result.

Federal hazardous materials transportation law provides at 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. Thus, RSPA lacks discretion in this area. RSPA proposes that the effective date of Federal preemption will be 180 days from publication of a final rule in this matter in the **Federal Register**.

#### C. Executive Order 13084

This proposed rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13084 ("Consultation and Coordination with Indian Tribal Governments"). Because this proposed rule does not significantly or uniquely affect the communities of the Indian tribal governments and does not impose substantial direct compliance costs, the funding and consultation requirements of Executive Order 13084 do not apply.

#### D. Regulatory Flexibility Act

This proposed rule would incorporate changes introduced in the eleventh revised edition of the UN Recommendations, the 2001–2002 ICAO Technical Instructions, and Amendment 30 to the IMDG Code. It would apply to offerors and carriers of hazardous materials and would facilitate the transportation of hazardous materials in international commerce by providing

consistency with international requirements.

The costs associated with this proposed rule are considered to be so minimal as to not warrant preparation of a regulatory impact analysis or regulatory evaluation. The majority of amendments should result in cost savings and would ease the regulatory compliance burden for shippers engaged in international commerce, including trans-border shipments within North America. For example, cost savings will be realized by shippers and carriers as a result of eliminating the differences between primary and subsidiary labels. As a result of this change, it will no longer be necessary to stock two sets of labels for each hazard class. To ease any burden associated with this change, we are proposing a reasonable transition period where labels meeting current and proposed requirements may be used. Other cost savings include: revising minimum thickness requirements for metal IBCs; providing greater harmonization with international regulations and flexibility for IBCs and portable tanks that may be used for the transportation of hazardous materials; authorizing the use of UN portable tanks while retaining current IM 101, 102 and DOT Specification 51 portable tank requirements and authorizations for their use; numerous deletions from the hazardous materials table and the marine pollutant list; more flexible requirements for transporting samples of hazardous materials; authorization to use a single explosives placard when explosives of several compatibility groups are transported in a single freight container or vehicle; several clarifications of existing regulatory requirements; and revised requirements for large lithium batteries which will simplify the regulatory requirements applicable to batteries used in high energy efficient hybrid vehicles. We are proposing immediate voluntary compliance (as of January 1, 2001 or the date of publication of the final rule, whichever occurs first), 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 proposed amendments. Many companies involved in domestic, as well as global operations, will realize economic benefits as a result of the proposed amendments in this rulemaking. Therefore, I certify that this proposed rule will not, if promulgated, have a significant economic impact on a substantial number of small entities. This certification is subject to modification as a result of a review of

comments received in response to this proposal.

#### E. Paperwork Reduction Act

We have current information collection approvals under OMB No. 2137–0557, Approvals for Hazardous Materials, which expires March 31, 2002, with 18,302 burden hours and \$413,737.40 annual costs, and OMB No. 2137–0018, Inspection and Testing of Portable Tanks and Intermediate Bulk Containers, which expires March 31, 2002, with 51,340 burden hours and \$10,235,000 annual costs. We believe that this proposed rule may result in minor incremental increases in the annual burden hours and costs. If these proposals are finalized, the current approvals would be revised and resubmitted to OMB for extension and re-approval.

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. This notice identifies information collections that we may submit to OMB for extension and re-approval based on the requirements in this proposed rule. We have revised burden estimates, where appropriate, to reflect current reporting levels or adjustments based on changes in this proposed rule since the information collections were last approved. We estimate that the total information collection and recordkeeping burdens as proposed in this rule would be revised as follows:

*OMB No. 2137–0557:*  
*Number of Respondents:* 3,518.  
*Total Annual Responses:* 3,869.  
*Total Annual Burden Hours:* 18,381.  
*Total Annual Burden Cost:*  
 \$413,737.40.  
*One-time Annual Start Up Burden Hours:* 168.  
*One-time Annual Start Up Cost:*  
 \$11,758.50.  
*Total Responses for First Year:* 4,005.  
*Total Annual Burden Hours for First Year:* 18,549.  
*Total Annual Burden Cost for First Year:* \$425,495.90.

We specifically request comments on the information collection and recordkeeping burdens associated with developing, implementing, and maintaining these requirements for approval under this proposed rule.

Requests for a copy of the information collection approvals, requests and data should be directed to Deborah Boothe, Office of Hazardous Materials Standards (DHM–10), Research and Special Programs Administration, Room 8102, 400 Seventh Street, SW, Washington,

DC 20590-0001, Telephone (202) 366-8553.

Written comments should be addressed to the Dockets Management System as identified in the ADDRESSES section of this rulemaking. Comments should be received prior to the close of comment period identified in the DATES section of this rulemaking. Under the Paperwork Reduction Act of 1995, no person is required to respond to an information collection unless it displays a valid OMB control number. If these proposed requirements are adopted in a final rule, we will submit the revised information collection and recordkeeping requirements to the Office of Management and Budget for approval.

*F. Regulation 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 number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

*G. Unfunded Mandates Reform Act*

This proposed rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$100 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.

**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, Labeling, Markings, Packaging and containers, Reporting and recordkeeping requirements.

*49 CFR Part 173*

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

*49 CFR Part 174*

Hazardous materials transportation, Radioactive materials, Railroad safety.

*49 CFR Part 175*

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

*49 CFR Part 176*

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

*49 CFR Part 177*

Hazardous materials transportation, Motor carriers, Radioactive materials, Reporting and recordkeeping requirements.

*49 CFR Part 178*

Hazardous materials transportation, 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 proposed to be amended as follows:

**PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS**

1. The authority citation for part 171 would continue to read as follows:

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

2. In § 171.7, in the paragraph (a)(3) table:

a. Under the entry “American Society for Testing and Materials”, a new entry would be added in alpha-numeric order;

b. Under the entry “International Atomic Energy Agency (IAEA)”, a new entry would be added in alphabetical order;

c. Under the entry “International Civil Aviation Organization (ICAO)”, the existing entry would be revised;

d. Under the entry “International Maritime Organization (IMO)”, the existing entry would be revised and a new entry would be added in appropriate alphabetical order;

e. Under the entry “International Organization for Standardization”, three new entries would be added in appropriate alphabetical/numerical order; and

f. Under the entry “United Nations”, the existing entries would be revised.

The revisions and additions read as follows:

**§ 171.7 Reference material.**

(a) *Matter incorporated by reference.*

\* \* \*

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

Source and name of material	49 CFR reference
* * * <i>American Society for Testing and Materials</i>	* * *
ASTM E 112-96 Standard Test Methods for Determining Average Grain Size, 1996 Edition.	178.274
* * * <i>International Atomic Energy Agency (IAEA)</i>	* * *
IAEA, Regulations for the Safe Transport of Radioactive Material, No. ST-1, 1996 Edition.	171.12(d)
* * * <i>International Civil Aviation Organization (ICAO)</i>	* * *
Technical Instructions for the Safe Transport of Dangerous Goods by Air, DOC 9284-AN/905, 2001-2002 Edition.	171.11; 172.191; 172.202; 172.401; 172.512; 172.519; 172.602

Source and name of material	49 CFR reference
<i>International Maritime Organization (IMO)</i>	
International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes On Board Ships (INF Code).	176.720
International Maritime Dangerous Goods (IMDG) Code, as amended by Amendment 30 (2000 edition).	171.12; 172.401; 172.407; 173.21; 176.2; 176.5; 176.11; 176.27; 176.30.
<i>International Organization for Standardization</i>	
ISO 1496-3 Series 1 freight containers—Specification and testing, 1996 edition ...	178.274
ISO 4126-1 Safety valves Part 1: Safety valves, 1991 edition .....	178.274
ISO 6892 Metallic materials—Tensile testing, 1984 edition .....	178.274
<i>United Nations</i>	
UN Recommendations on the Transport of Dangerous Goods, Eleventh Revised Edition (1999).	172.102; 172.401; 172.407; 172.502; 173.1; 173.3; 173.21; 173.22; 173.24; 173.56; 173.57; 173.124; 173.166; 178.500; 178.700.
UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Third Revised Edition (1999).	172.102; 173.21; 173.57; 173.58; 173.124; 173.128; 173.166; 173.185.

\* \* \* \* \*

3. In § 171.8, the following definitions would be added in appropriate alphabetical order to read as follows:

**§ 171.8 Definitions and abbreviations.**

\* \* \* \* \*

*Large packaging* means a packaging that—

(1) Consists of an outer packaging which contains articles or inner packagings; and

(2) Is designed for mechanical handling; and

(3) Exceeds 400 kg net mass or 450 liters (118.9 gallons) capacity and has a volume of not more than 3 m<sup>3</sup>. (See § 178.801(i) of this subchapter); and.

(4) Conforms to the requirements for the construction, testing and marking of large packagings as specified in the UN Recommendations.

\* \* \* \* \*

*Liner* means a separate tube or bag inserted into a packaging, (including IBCs and large packagings) but not forming an integral part of the packaging, including the closures of the packaging's openings.

\* \* \* \* \*

*Stabilized* means that the hazardous material is in a condition that precludes uncontrolled reaction. This may be achieved by methods such as adding an inhibiting chemical, degassing the hazardous material to remove dissolved oxygen and inerting the air space in the package, or maintaining the hazardous material under temperature control.

\* \* \* \* \*

*UN portable tank* means a multimodal tank having a capacity of more than 450 liters (118.9 gallons). It includes a shell fitted with service equipment and structural equipment, including

stabilizing members external to the shell and skids, mountings or accessories to facilitate mechanical handling. The UN portable tank must be capable of being filled and discharged without the removal of its structural equipment and must be capable of being lifted when full. Cargo tanks, rail tank car tanks, non-metallic tanks and IBCs and packagings made to cylinder specifications are not UN portable tanks.

\* \* \* \* \*

4. In § 171.10, in the paragraph (c)(2) Table of Conversion Factors for SI Units, a unit of measure would be added as the last entry to read as follows:

**§ 171.10 Units of measure.**

\* \* \* \* \*

(c) \* \* \*

(2) \* \* \*

TABLE OF CONVERSION FACTORS FOR SI UNITS

Measurement	SI to U.S. standard	U.S. standard to SI
Force .....	1 Newton = 9.807 pound-force .....	1 Pound-force = 0.1020N.

\* \* \* \* \*

5. In § 171.11, a new paragraph (d)(17) would be added to read as follows:

**§ 171.11 Use of ICAO Technical Instructions.**

\* \* \* \* \*

(d) \* \* \*

(17) An organic peroxide that is not identified by technical name in the Organic Peroxide Table in § 173.225(b) of this subchapter must be approved by the Associate Administrator in

accordance with the requirements of § 173.128(d) of this subchapter.

6. In § 171.12, in paragraph (b)(3), a sentence would be added at the end of the paragraph, a new paragraph (b)(19) would be added, and paragraphs (d)

heading and introductory text and (d)(4) would be revised to read as follows:

§ 171.12 Import and export shipments.

\* \* \* \* \*

(b) \* \* \*
(3) \* \* \* A viscous flammable liquid which is excepted from the requirements of the IMDG Code based on having a flash point of 23 °C (73.4 °F) or greater and less than or equal to 60.5 °C (140.9 °F), not meeting the toxic or corrosive definitions, not containing more than 20% nitrocellulose, and being packed in receptacles of less than 450 liters (118.9 gallons) capacity, may not be transported under the provisions of this section and is subject to the requirements of this subchapter.

\* \* \* \* \*

(19) An organic peroxide that is not identified by technical name in the Organic Peroxide Table in § 173.225(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

\* \* \* \* \*

(d) Use of International Atomic Energy Agency (IAEA) regulations for Class 7 (radioactive) materials. Class 7 (radioactive) materials being imported into or exported from the United States, or passing through the United States in the course of being shipped between places outside the United States, may be offered and accepted for transportation when packaged, marked, labeled, and otherwise prepared for shipment in accordance with IAEA "Regulations for the Safe Transport of Radioactive Material," Safety Series No. 6, 1985 edition, or ST-1, 1996 edition (incorporated by reference, see § 171.7), if:

\* \* \* \* \*

(4) The country of origin for the shipment has adopted the corresponding edition (Safety Series No. 6, 1985 Edition, or ST-1, 1996 Edition) of the IAEA "Regulations for the Safe Transport of Radioactive Material";

\* \* \* \* \*

7. In § 171.12a, a new paragraph (b)(18) would be added to read as follows:

§ 171.12a Canadian shipments and packagings.

\* \* \* \* \*

(b) \* \* \*
(18) An organic peroxide that is not identified by technical name in the Organic Peroxide Table in § 173.225(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

8. In § 171.14, paragraphs (d) introductory text, (d)(1) and (d)(2) introductory text would be revised and a new paragraph (d)(4) would be added to read as follows:

§ 171.14 Transitional provisions for implementing certain requirements.

\* \* \* \* \*

(d) A final rule published in the Federal Register on [publication date of final rule], effective October 1, 2001, resulted in revisions to this subchapter. During the transition period 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 September 30, 2001, or the requirements published in the [publication date of final rule] final rule.

(1) Transition dates. The effective date of the [publication date of final rule] final rule is October 1, 2001. A delayed compliance date of October 1, 2002 is authorized. On October 1, 2002, all applicable regulatory requirements adopted in the [publication date of final rule] final rule must be met.

(2) Intermixing old and new requirements. Prior to the transition date in paragraph (d)(1) of this section, it is recommended that the hazard communication requirements be consistent where practicable. Marking, labeling, placarding, and shipping paper descriptions should conform to either the old requirements of this subchapter in effect on September 30, 2001, or the new requirements of this subchapter in the [publication date of final rule] final rule without intermixing communication elements. However, intermixing is permitted, during the applicable transition period, for packaging, hazard communication, and handling provisions, as follows:

\* \* \* \* \*

(4) Until January 1, 2010, a hazardous material may be transported in an IM or IMO portable tank in accordance with the T Codes (special provisions) assigned to a hazardous material in Column (7) of the HMT in effect on September 30, 2000.

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

9. The authority citation for part 172 would continue to read as follows:

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

10. In § 172.101, paragraph (c)(11) would be revised and new paragraphs

(c)(16) and (k)(6) through (k)(20) would be added to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

\* \* \* \* \*

(c) \* \* \*
(11) Except for a material subject to § 173.21, § 173.54, § 173.56(d), § 173.56(e)(1), § 173.124(a)(2)(iii) or § 173.128(c) of this subchapter, 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/division, identification number, and packing group, if applicable, based on the shipper's tentative determination according to: Defining criteria in this subchapter; the hazard precedence prescribed in § 173.2a of this subchapter; and the shippers knowledge of the material. In addition, a sample of material that is to be tested is subject to the following requirements:

(i) A sample may not be an explosive, infectious substance, or radioactive material;

(ii) Except when the word "Sample" already appears in the proper shipping name, the word "Sample" must appear before the proper shipping name for the sample;

(iii) If the proper shipping description for a sample is assigned a "G" in Column (1) of the HMT, the provisions requiring a technical name for the constituent(s) do not apply;

(iv) A sample must be transported in a combination packaging which 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;

(v) A sample may not be packed together with any other hazardous material;

(vi) For a sample that is a self-reactive material, the requirements in § 173.224(c)(3) apply; and

(vii) For a sample that is an organic peroxide, the requirements in § 173.225(c)(2) must be met.

\* \* \* \* \*

(16) Unless it is already included in the proper shipping name in the Table, the qualifying words "liquid" or "solid" may be added in association with the proper shipping name when a hazardous material specifically listed by name in the Table may, due to the differing physical states of the various isomers of the material, be either a liquid or a solid (for example "Dinitrotoluenes, liquid" and "Dinitrotoluenes, solid"). Use of the words "liquid" or "solid" is subject to

the limitations specified for the use of the words "mixture" or "solution" in paragraph § 172.101(c)(10) of this section. The qualifying word "molten" may be added in association with the proper shipping name when a hazardous material, which is a solid in accordance with the definition in § 171.8 of this subchapter, is offered for transportation in the molten state (for example, "Alkylphenols, solid, n.o.s., molten").

\* \* \* \* \*

(k) \* \* \*

(6) Stowage category "01" means the material may be stowed "on deck" or "under deck" on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(7) Stowage category "02" means the material may be stowed "on deck" or "under deck" on a cargo vessel (up to 12 passengers) and "on deck" in closed cargo transport units or "under deck" in closed cargo transport units on a passenger vessel.

(8) Stowage category "03" means the material may be stowed "on deck" or "under deck" on a cargo vessel (up to 12 passengers) and "on deck" in closed cargo transport units on a passenger vessel.

(9) Stowage category "04" means the material may be stowed "on deck" or "under deck" on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(10) Stowage category "05" means the material may be stowed "on deck" in closed cargo transport units or "under

deck" on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(11) Stowage category "06" means the material may be stowed "on deck" in closed cargo transport units or "under deck" on a cargo vessel (up to 12 passengers) and "on deck" in closed cargo transport units or "under deck" in closed cargo transport units on a passenger vessel.

(12) Stowage category "07" means the material may be stowed "on deck" in closed cargo transport units or "under deck" on a cargo vessel (up to 12 passengers) and "on deck" only in closed cargo transport units on a passenger vessel.

(13) Stowage category "08" means the material may be stowed "on deck" in closed cargo transport units or "under deck" on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(14) Stowage category "09" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in closed cargo transport units on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(15) Stowage category "10" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in closed cargo transport units on a cargo vessel (up to 12 passengers) and "on deck" only in closed cargo transport units on a passenger vessel.

(16) Stowage category "11" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in magazine stowage type "c" on

a cargo vessel (up to 12 passengers) and "on deck" only in closed cargo transport units on a passenger vessel.

(17) Stowage category "12" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in magazine stowage type "c" on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(18) Stowage category "13" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in magazine stowage type "A" on a cargo vessel (up to 12 passengers) and "on deck" only in closed cargo transport units on a passenger vessel.

(19) Stowage category "14" means the material may be stowed "on deck" in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(20) Stowage category "15" means the material may be stowed "on deck" in closed cargo transport units or "under deck" in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

\* \* \* \* \*

11. In § 172.101, the Hazardous Materials Table would be amended by removing, adding, or revising, in appropriate alphabetical sequence, the following entries to read as follows:

**§ 172.101 Purpose and use of hazardous materials table.**

\* \* \* \* \*

§ 172.101 HAZARDOUS MATERIALS TABLE

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Location	(10B) Other
	* [REMOVE:]. Accumula-tors, pressur-ized, preu-matic, or hydraulic (containing non-flam-mable gas). Aldrin, liq-uid (PG II). Aldrin, solid (PG II). Antimony tribromid-e, solids (PG II). Antimony tribromid-e, solu-tion (PG II). Antimony trifluorid-e, solu-tion (PG II). Antimony trifluorid-e, solu-tion (PG II). Antimony trifluorid-e, solu-tion (PG II). Arsenic sulfide (PG II). Arsenic trisulfide (PG II). Barium styphnate (PG II). Calcium arsenite, solid (PG II). Chromic acid, solid (PG II).	*	NA1956.	*	*		*			*			



D .....	Denatured alcohol (PG I, II, III).	NA1986.
D .....	Denatured alcohol (PG I, II, III).	NA1987.
D .....	Dichlorobutene (PG I).	NA2920.
D .....	Dieldrin (PG II).	NA2761.
D .....	Diésel fuel	NA1993.
D .....	Dodecylbenzenesulfonic acid (PG II).	NA2584.
D .....	Gasohol gasoline mixed with ethyl alcohol with not more than 20 percent alcohol. (PG II).	NA1203.
D .....	Grenades, empty primed (PG II).	NA0349.
D .....	Insecticide gases flammable n.o.s. anhydride (PG III).	NA1954.
D .....	Isobutyric anhydride (PG III).	UN2530.
D .....	Lead mononitrosocinate (PG II).	NA0473.
D .....	Lighters for cigars, cigarettes, etc., with lighter fluids. (PG II).	NA1226.
D .....	Maleic acid (PG III).	NA2215.
D .....	Medicines, corrosive, liquid, n.o.s. (PG II, III).	NA1760.



Organic peroxide type F, solid temperature controlled. (PG III only).	UN3120.
Parathion (PG I, II).	NA2763.
Picric acids, wet, with not less than 10 percent water. (PG I).	NA1344.
Propargyl alcohol (PG II).	NA1986.
Refrigerating machine (PG III).	NA1993.
Refrigerating machines, containing flammable, non-poisonous, liquefied gas.	NA1954.
Selenium oxide (PG I).	NA2811.
Sodium hydrosulfide, solution (PG II).	NA2922.
Sodium selenite (PG II).	NA2630.
Sulfur trioxide, uninhibited (PG I).	NA1829.
Tetraethyl lead, liquid (PG I).	NA1649.
Tetraethyl pyrophosphate, liquid (PG I).	NA3018.

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							(8A) Excep- tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Location	(10B) Other
	Tetraethyl pyrophosphate <i>solid</i> (PG II).	.....	NA1707.										
	Titanium sulfate solution (PG II).	.....	NA1760.										
	mon-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetriazine, dry (with more than 39 percent available chlorine). (PG II).	.....	NA2468.										
	Oxygen generator, chemi-cal.	.....	UN3356.										
	Zirconium sulfate (PG II).	.....	NA9163.										
	* [ADD.]	*		*	*		*	*	*	*			
	* Aircraft engines (including turbines, see Engines, internal combustion.	*		*	*		*	*	*	*			
	* Diesel fuel, see Gas oil.	* 3	NA1883 ....	* III	* None	* B1	* 150	* 203	* 242	* 60 L	* 220 L	A.	



§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Location	Other
(1)	* Oxygen generator, chemical (including when contained in associated equipment, e.g., pas-senger service units (PSUs), portable breathing equip-ment (PBE), etc.).	5.1	UN3356 ...	* II	5.1	60.A51	* None	212	* None	Forbidden	D	56, 58, 69, 106	
I	Propellant, solid.	1.4C	UN0501 ...	*	1.4C		None	62	None	Forbidden	A	24E	
I	* Radioactive material, excepted pack-age—articles manufac-tured from nat-ural ura-nium or depleted uranium or natural thorium.	*	7	* 7	UN2909 ...		* None	422, 426	* 422, 426	422, 426	A		
I	* Radioactive material, excepted pack-age—empty pack-aging.	* 7	UN2908 ...	* 7	Empty		* 422, 428	422, 428	* 422, 428	*	A		

I .....	* Radioactive material, excepted pack-age—in-stru-ments or articles.	* 7	UN2911 ..	* None .....	* 422, 424	* 422, 424 ..	* 422, 424 ..	* .....	A .....	95
I .....	* Radioactive material, low spe-cific ac-tivity (LSA—I) non fissile or fissile-ex-cepted.	* 7	UN2912 ..	* 7 .....	* 421, 422, 428	* 421, 422, 427 .....	* 427 .....	* .....	A .....	95
I .....	* Radioactive material, low spe-cific ac-tivity (LSA—II) non fissile or fissile-ex-cepted.	* 7	UN3321 ..	* 7 .....	* 421, 422, 428	* 421, 422, 427 .....	* 427 .....	* .....	A .....	95
I .....	* Radioactive material, low spe-cific ac-tivity (LSA—III) non fissile or fissile-ex-cepted.	* 7	UN3322 ..	* 7 .....	* 421, 422, 428	* 421, 422, 427 .....	* 427 .....	* .....	A .....	95
I .....	* Radioactive material, surface con-tami-nated ob-jects (SCO—I or SCO—II) non fissile or fissile-ex-cepted.	* 7	UN2913 ..	* 7 .....	* 421, 422, 428	* 421, 422, 427 .....	* 427 .....	* .....	A .....	95

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Nos.	PG	Label codes	Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
I .....	* Radioactive material, transported under special arrangement, fissile.	* 7	UN3331 ...	* .....	7 .....	139.	*		*	*			
I .....	* Radioactive material, transported under special arrangement <i>non fissile or fissile-ex-cepted</i> .	* 7	UN2919 ...	* .....	7 .....	139.	*		*	*			
I .....	* Radioactive material, Type A package, fissile <i>non-spe-cial form</i> .	* 7	UN3327 ...	* .....	7 .....	W7, W8 ...	*	453	* 417	*		A .....	95
I .....	* Radioactive material, Type A package <i>non-spe-cial form, non fissile or fissile-ex-cepted</i> .	* 7	UN2915 ...	* .....	7 .....	W7, W8 ...	*	415	* 415	*		A .....	95



I	* Radioactive material, Type A package, special form <i>non fissile</i> or <i>fissile-excepted</i> .	7	UN3332	*	7	W7, W8	*	415, 476	*	415, 476	*	415, 476	*	A	95
I	* Radioactive material, Type A package, special form, fissile.	7	UN3333	*	7	W7, W8	*	453	*	417, 476	*	417, 476	*	A	95
I	* Radioactive material, Type B(M) package, fissile.	7	UN3329	*	7		*	453	*	417	*	417	*	A	95
I	* Radioactive material, Type B(M) package <i>non fissile</i> or <i>fissile-excepted</i> .	7	UN2917	*	7		*	416	*	416	*	416	*	A	95
I	* Radioactive material, Type B(U) package, fissile.	7	UN3328	*	7		*	453	*	417	*	417	*	A	95
I	* Radioactive material, Type B(U) package <i>non fissile</i> or <i>fissile-excepted</i> .	7	UN2916	*	7		*	416	*	416	*	416	*	A	95
I	* Radioactive material, uranium hexafluoride <i>non fissile</i> or <i>fissile-excepted</i> .	7	UN2978	*	7,8		*	423	*	420, 427	*	420, 427	*	A	95

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							(8A) Excep- tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Location	(10B) Other
	* Radioactive material, uranium hexafluoride, fissile.	* 7	UN2977 ...	*	7,8		* 453	* 417, 420 ..	* 417, 420 ..	*	A		
	* Refrigerating Machines containing flammable, non-toxic, liquefied gas.	* 2.1	UN3358 ...	*	2.1		* 306	* 306 .....	* 306 .....	Forbidden	C	40	
	* Rockets with inert head.	* 1.2C	UN0502 ...	*	1.2		* None	* 62 .....	* None .....	Forbidden	B	1E, 5E	
	* 1H-Tetrazole.	* 1.1D	UN0504 ...	*	1.1D		* None	* 62 .....	* None .....	Forbidden	B	1E, 5E	
	* [REVISE:]	*		*			*	*	*				
	* 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	A7, A9, N34, W9.	* 152	* 212 .....	* None .....	5 kg .....	D	4, 5, 25, 48, 56, 58, 69	

Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 percent but not more than 10 percent water.	5.1	UN2880 ...	II	5.1	W9	152	212	240	5 kg	25 kg	D	4, 5, 25, 48, 56, 58, 69
Calcium hypochlorite mixtures, dry with more than 10 percent but not more than 39 percent available chlorine.	5.1	UN2208 ...	III	5.1	A1, A29, N34, W9.	152	213	240	25 kg	100 kg	D	4, 5, 25, 48, 56, 58, 69
* Dangerous Goods in Machinery, or Dangerous Goods in Apparatus.	* 9	UN3363 ...	*	*	136	* None	222	None	No limit	No limit	A	
* Fire extinguishers containing Magnesium granules, coated, particle size not less than 149.	* 2.2	UN1044 ...	*	2.2	18, 110	* 309	309	None	75 kg	150 kg	A	
Magnesium granules, coated, particle size not less than 149.	4.3	UN295- ...	III	4.3	128, A1, A19, B108, B115.	151	213	240	25 kg	100 kg	A	
* Methanol ...	* 3	UN1230 ...	II	3, 6.1	T8	* 150	202	242	1 L	60 L	B	40
* Morpholine	* 8	UN2054 ...	I	8, 3	T17	* None	201	243	.5L	2.5L	C	25, 40

+ , I

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Location	(10B) Other
G	* Pyrophoric organometallic compound, water-reactive, n.o.s.	4.2	UN3203	I	4.2, 4.3	T28, T40	* None	187	* 242	* Forbidden		D	18
D	* Radioactive material, excepted package—articles manufactured from natural or depleted uranium or natural thorium.	7	UN2910	*	None		* 422, 426	422, 426	* 422, 426	*		A	
D	* Radioactive material, excepted package—empty package or empty package aging.	7	UN2910	*	empty		* 428	428	* 428	*		A	
D	* Radioactive material, excepted package—stru-ments or articles.	7	UN2910	*	None		* 422, 424	422, 424	* 422, 424	*		A	
D	* Radioactive material, fissile, n.o.s.	7	UN2918	*	7		* 453	417	* 417	*		A	40, 95

D	*	Radioactive material, low specific activity, n.o.s. or Radioactive material, LSA, n.o.s..	7	UN2912	7						421, 428	427	427	*		A		
D	*	Radioactive material, n.o.s.	7	UN2982	7						421, 428	415, 416	415, 416	*		A		40, 95
D	*	Radioactive material, special form n.o.s.	7	UN2974	7						421, 424	415, 416	415, 416	*		A		
	*	Regulated medical waste.	6.2	UN3291	6.2	A13, A14					134	197	None	*	No limit	E		
D	*	Radioactive material, surface contaminated object. or Radioactive material SCO.	7		UN2913						7		421, 424, 426.	*	427	427	A	
D	*	Thorium metal, pyrophoric.	7	UN2975	7, 4.2						None	418	None	*	Forbidden	D		
D	*	Thorium nitrate, solid.	7	UN2976	7, 5.1						None	419	None	*	Forbidden	A		
D	*	Uranium hexafluoride, fissile excepted or non-fissile.	7	UN2978	7, 8						423	420, 427	420, 427	*				

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Nos.	PG	Label codes	Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D .....	* Uranium, hexafluoride, fissile (with more than 1 percent U-235).	* 7	UN2977 ...	* .....	7, 8 .....	.....	* 453	417, 420 ..	* 417, 420 ..	* .....	.....	A .....	.....
D .....	* Uranium metal, pyrophoric.	* 7	UN2979 ...	* .....	7, 4,2 .....	.....	* None	418 .....	* None .....	* .....	.....	D .....	.....
D .....	* Uranyl nitrate hexahydrate solution.	* 7	UN2980 ...	* .....	7, 8 .....	.....	* 421, 427	415, 416, 417.	* 415, 416, 417.	* .....	.....	D .....	.....
D .....	* Uranyl nitrate, solid.	* 7	UN2981 ...	* .....	7, 5,1 .....	.....	* None	419 .....	* None .....	* Forbidden	15 kg .....	A .....	.....
D .....	* .....	* .....	.....	* .....	* .....	.....	* .....	* .....	* .....	* .....	.....	.....	.....

**§ 172.101 [Amended]**

12. In addition, in the § 172.101 Hazardous Materials Table, the following changes would be made:

a. In Column (1), a “G” would be added for the entries, “Other regulated substances, liquid, n.o.s.” and “Other regulated substances, solid, n.o.s.”

b. In Column (2), the following proper shipping names would be revised as follows:

Current column 2 entry	Revise to read:
Lithium hypochlorite, dry or Lithium hypochlorite mixtures, dry.	Lithium hypochlorite, dry <i>with more than 39% available chlorine (8.8% available oxygen)</i> or Lithium hypochlorite mixtures, dry <i>with more than 39% available chlorine (8.8% available oxygen)</i> .
Nitrocellulose membrane filters .....	Nitrocellulose membrane filters, <i>with not more than 12.6% nitrogen, by dry mass.</i>
Printing ink, <i>flammable</i> .....	Printing ink, <i>flammable</i> or Printing ink related material ( <i>including printing ink thinning or reducing compound</i> ), <i>flammable</i> .

c. In Column (2), for the following entries, the word “inhibited” would be revised to read “stabilized”:

- Acrolein, inhibited
- Acrylic acid, inhibited
- Acrylonitrile, inhibited
- Bicyclo [2,2,1] hepta-2, 5-diene, inhibited or 2,5-Norbornadiene, inhibited.
- Butadienes, inhibited
- Butyl acrylates, inhibited
- n-Butyl methacrylates, inhibited.
- Butyl vinyl ether, inhibited
- Chloral, anhydrous, inhibited
- Chloroprene, inhibited
- Cyanogen chloride, inhibited
- Diketene, inhibited
- Divinyl ether, inhibited
- Ethyl acrylate, inhibited
- Ethylacetylene, inhibited
- Ethyleneimine, inhibited
- Isobutyl acrylate, inhibited
- Isobutyl methacrylate, inhibited
- Isoprene, inhibited
- Methacrylaldehyde, inhibited
- Methacrylic acid, inhibited
- Methacrylonitrile, inhibited
- Methyl acrylate, inhibited
- Methyl isopropenyl ketone, inhibited.
- Methyl methacrylate monomer, inhibited.
- Propadiene, inhibited
- Propyleneimine, inhibited
- Styrene monomer, inhibited
- Tetrafluoroethylene, inhibited
- Trifluorochloroethylene, inhibited
- Vinyl acetate, inhibited
- Vinyl bromide, inhibited
- Vinyl butyrate, inhibited
- Vinyl ethyl ether, inhibited
- Vinyl fluoride, inhibited
- Vinyl isobutyl ether, inhibited
- Vinyl methyl ether, inhibited
- Vinyl chloride, inhibited or Vinyl chloride, stabilized
- Vinylidene chloride, inhibited
- Vinylpyridines, inhibited
- Vinyltoluene, inhibited
- Vinyltrichlorosilane, inhibited

d. In Column (7), the following entry would be revised as follows:

Column (2) entry	Column (7) entry	Revise to read
Life-saving appliances, not self inflating <i>containing dangerous goods as equipment</i>	.....	143

e. In Column (7), the following entries would be revised as follows:

**Note to reader:** The following Table is listed in numerical order according to the UN identification number. Columns 10 and 11 are proposed special provisions for IBCs. Columns 8 and 9 are proposed special provisions for portable tanks. If adopted, these four columns would appear in the Special Provisions column (Column (7)) of the § 172.101 Hazardous Materials Table.

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1003	Air, refrigerated liquid, (cryogenic liquid) non-pressurized.	2.2		2.2, 5.1		318, 319	T75	TP22		
1003	Air, refrigerated liquid, (cryogenic liquid).	2.2		2.2, 5.1		318, 319	T75	TP22		
1005	Ammonia, anhydrous	2.2		2.2	13	314, 315	T50			
1005	Ammonia, anhydrous	2.3		2.3, 8	4	314, 315	T50			
1009	Bromotrifluoromethane or Refrigerant gas, R 13B1.	2.2		2.2		314, 315	T50			
1010	Butadienes, inhibited	2.1		2.1		314, 315	T50			
1011	Butane see also Petroleum gases, liquefied.	2.1		2.1	19	314, 315	T50			
1012	Butylene see also Petroleum gases, liquefied.	2.1		2.1	19	314, 315	T50			
1017	Chlorine	2.3		2.3, 8	2, B9, B14	314, 315	T50	TP19		
1018	Chlorodifluoromethane or Refrigerant gas R 22.	2.2		2.2		314, 315	T50			
1020	Chloropentafluoroethane or Refrigerant gas R 115.	2.2		2.2		314, 315	T50			
1021	1-Chloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 124.	2.2		2.2		314, 315	T50			
1027	Cyclopropane	2.1		2.1		314, 315	T50			
1028	Dichlorodifluoromethane or Refrigerant gas R 12.	2.2		2.2		314, 315	T50			
1029	Dichlorofluoromethane or Refrigerant gas R 21.	2.2		2.2		314, 315	T50			
1030	1,1-Difluoroethane or Refrigerant gas R 152a.	2.1		2.1		314, 315	T50			
1032	Dimethylamine, anhydrous.	2.1		2.1		314, 315	T50			
1033	Dimethyl ether	2.1		2.1		314, 315	T50			
1036	Ethylamine	2.1		2.1	B77	314, 315	T50			
1037	Ethyl chloride	2.1		2.1	B43, B77	314, 315	T50			
1038	Ethylene, refrigerated liquid (cryogenic liquid).	2.1		2.1		318, 319	T75			
1040	Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C.	2.3		2.3, 2.1	4	323	T50	TP20		
1041	Ethylene oxide and carbon dioxide mixtures with more than 9 percent but not more than 87 percent ethylene oxide.	2.1		2.1		314, 315	T50			
1052	Hydrogen fluoride, anhydrous.	8	I	8, 6.1	3, B7, B46, B71, B77, T24, T27.	243	T10	TP2		
1055	Isobutylene see also Petroleum gases, liquefied.	2.1		2.1	19	314, 315	T50			
1060	Methyl acetylene and propadiene mixtures, stabilized.	2.1		2.1		314, 315	T50			
1061	Methylamine, anhydrous.	2.1		2.1		314, 315	T50			
1062	Methyl bromide	2.3		2.3	3, B14	314, 315	T50			
1063	Methyl chloride or Refrigerant gas R 40.	2.1		2.1		314, 315	T50			



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1064	Methyl mercaptan	2.3		2.3, 2.1	3, B7, B9, B14.	314, 315	T50			
1067	Dinitrogen tetroxide	2.3		2.3, 5.1, 8	1, B7, B14, B45, B46, B61, B66, B67, B77.	314	T50	TP21		
1073	Oxygen, refrigerated liquid (cryogenic liquid).	2.2		2.2, 5.1		318	T75	TP22		
1075	Petroleum gases, liquefied or Liquefied petroleum gas.	2.1		2.1		314, 315	T50			
1077	Propylene see also Petroleum gases, liquefied.	2.1		2.1	19	314, 315	T50			
1078	Refrigerant gases, n.o.s.	2.2		2.2		314, 315	T50			
1079	Sulfur dioxide	2.3		2.3, 8	3, B14	314, 315	T50	TP19		
1082	Trifluorochloroethylene, inhibited.	2.3		2.3, 2.1	3, B14	314, 315	T50			
1083	Trimethylamine, anhydrous.	2.1		2.1		314, 315	T50			
1085	Vinyl bromide, inhibited.	2.1		2.1		314, 315	T50			
1086	Vinyl chloride, inhibited or Vinyl chloride, stabilized.	2.1		2.1	21, B44	314, 315	T50			
1087	Vinyl methyl ether, inhibited.	2.1		2.1	B44	314, 315	T50			
1088	Acetal	3	II	3	T7	242	T4	TP1	IB2	
1089	Acetaldehyde	3	I	3	A3, B16, T20, T26, T29.	243	T11	TP2 TP7		
1090	Acetone	3	II	3	T8	242	T4	TP1	IB2	
1091	Acetone oils	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1092	Acrolein, inhibited	6.1	I	6.1, 3	1, B9, B14, B30, B42, B72, B77, T38, T43, T44.	244	T22	TP2 TP7 TP13 TP38 TP44		
1093	Acrylonitrile, inhibited	3	I	3, 6.1	B9, T18, T26.	243	T14	TP2 TP13		
1098	Allyl alcohol	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1099	Allyl bromide	3	I	3, 6.1	T18	243	T14	TP2 TP13		
1100	Allyl chloride	3	I	3, 6.1	T18, T26	243	T14	TP2 TP13		
1104	Amyl acetates	3	III	3	B1, T1	242	T2	TP1	IB3	
1105	Pentanol	3	II	3	T1	242	T4	TP1 TP29	IB2	
1105	Pentanol	3	III	3	B1, B3, T1	242	T2	TP1	IB3	
1106	Amylamines	3	II	3, 8	T1	243	T7	TP1	IB2	
1106	Amylamines	3	III	3, 8	B1	242	T4	TP1	IB3	
1107	Amyl chlorides	3	II	3	T1	242	T4	TP1	IB2	
1108	1-Pentene (n-amyl-ene).	3	I	3	T14	243	T11	TP2		
1109	Amyl formates	3	III	3	B1, T1	242	T2	TP1	IB3	
1110	n-Amyl methyl ketone	3	III	3	B1, T1	242	T2	TP1	IB3	
1111	Amyl mercaptans	3	II	3	A3, T8	242	T4	TP1	IB2	
1112	Amyl nitrate	3	III	3	B1, T1	242	T2	TP1	IB3	
1113	Amyl nitrites	3	II	3	T8	242	T4	TP1	IB2	
1114	Benzene	3	II	3	B101, T8	242	T4	TP1	IB2	
1120	Butanol	3	II	3	T1	242	T4	TP1 TP29	IB2	
1120	Butanol	3	III	3	B1, T1	242	T2	TP1	IB3	
1123	Butyl acetates	3	II	3	T1	242	T4	TP1	IB2	
1123	Butyl acetates	3	III	3	B1, T1	242	T2	TP1	IB3	
1125	n-Butylamine	3	II	3, 8	B101, T8	242	T7	TP1	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1126	1-Bromobutane	3	II	3	T1	242	T4	TP1	IB2	
1127	Chlorobutanes	3	II	3	B101, T8	242	T4	TP1	IB2	
1128	n-Butyl formate	3	II	3	T1	242	T4	TP1	IB2	
1129	Butyraldehyde	3	II	3	T8	242	T4	TP1	IB2	
1130	Camphor oil	3	III	3	B1, T1	242	T2	TP1	IB3	
1131	Carbon disulfide	3	I	3, 6.1	B16, T18, T26, T29.	243	T14	TP2 TP7 TP13		
1133	Adhesives, containing a flammable liquid.	3	I	3	B42, T7, T30.	243	T11	TP1 TP8 TP27		
1133	Adhesives, containing a flammable liquid.	3	II	3	B52, T7, T30.	242	T4	TP1 TP8	IB2	
1133	Adhesives, containing a flammable liquid.	3	III	3	B1, B52, T7, T30.	242	T2	TP1	IB3	
1134	Chlorobenzene	3	III	3	B1, T1	242	T2	TP1	IB3	
1135	Ethylene chlorohydrin	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2	TP13 TP38 TP45	
1136	Coal tar distillates, flammable.	3	II	3	T8, T31	242	T4	TP1	IB2	
1136	Coal tar distillates, flammable.	3	III	3	B1, T7, T30.	242	T4	TP1 TP29	IB3	
1139	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining).	3	I	3	T42	243	T11	TP1 TP8 TP27		
1139	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining).	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1139	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining).	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1143	Crotonaldehyde, stabilized.	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1144	Crotonylene	3	I	3	T20	243	T11	TP2		
1145	Cyclohexane	3	II	3	B101, T8	242	T4	TP1	IB2	
1146	Cyclopentane	3	II	3	B101, T14	242	T7	TP1	IB2	
1147	Decahydronaphthalene.	3	III	3	B1, T1	242	T2	TP1	IB3	
1148	Diacetone alcohol	3	II	3	T1	242	T4	TP1	IB2	
1148	Diacetone alcohol	3	III	3	B1, T1	242	T2	TP1	IB3	
1149	Dibutyl ethers	3	III	3	B1, T1	242	T2	TP1	IB3	
1150	1,2-Dichloroethylene	3	II	3	T14	242	T7	TP2	IB2	
1152	Dichloropentanes	3	III	3	B1, T1	242	T2	TP1	IB3	
1153	Ethylene glycol diethyl ether.	3	III	3	B1, T1	242	T2	TP1	IB3	
1154	Diethylamine	3	II	3, 8	B101, N34, T8.	243	T7	TP1	IB2	
1155	Diethyl ether or Ethyl ether.	3	I	3	T21	243	T11	TP2		
1156	Diethyl ketone	3	II	3	T1	242	T4	TP1	IB2	
1157	Diisobutyl ketone	3	III	3	B1, T1	242	T2	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1158	Diisopropylamine	3	II	3, 8	B101, T8	243	T7	TP1	IB2	
1159	Diisopropyl ether	3	II	3	B101, T8	242	T4	TP1	IB2	
1160	Dimethylamine solution.	3	II	3, 8	T8, T34	243	T7	TP1	IB2	
1161	Dimethyl carbonate	3	II	3	T8	242	T4	TP1	IB2	
1162	Dimethyldichlorosilane.	3	II	3, 8	B77, T15, T26.	243	T7	TP2 TP13	IB2	
1163	Dimethylhydrazine, unsymmetrical.	6.1	I	6.1, 3, 8	2, B7, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1164	Dimethyl sulfide	3	II	3	B100, T14	242	T7	TP2	IB1	BB8
1165	Dioxane	3	II	3	T8	242	T4	TP1	IB2	
1166	Dioxolane	3	II	3	T8	242	T4	TP1	IB2	
1167	Divinyl ether, inhibited.	3	I	3	T14	243	T11	TP2		
1169	Extracts, aromatic, liquid.	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1169	Extracts, aromatic, liquid.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1170	Ethanol or Ethyl alcohol Ethanol solutions or Ethyl alcohol solutions.	3	II	3	24, T1	242	T4	TP1	IB2	
1170	Ethanol or Ethyl alcohol or Ethanol solutions or Ethyl alcohol solutions.	3	III	3	24, B1, T1	242	T2	TP1	IB3	
1171	Ethylene glycol monoethyl ether.	3	III	3	B1, T1	242	T2	TP1	IB3	
1172	Ethylene glycol monoethyl ether.	3	III	3	B1, T1	242	T2	TP1	IB3	
1173	Ethyl acetate	3	II	3	T2	242	T4	TP1	IB2	
1175	Ethylbenzene	3	II	3	T1	242	T4	TP1	IB2	
1176	Ethyl borate	3	II	3	T8	242	T4	TP1	IB2	
1177	Ethylbutyl acetate	3	III	3	B1, T1	242	T2	TP1	IB3	
1178	2-Ethylbutyraldehyde	3	II	3	B1, T1	242	T4	TP1	IB2	
1179	Ethyl butyl ether	3	II	3	B1, B101, T1.	242	T4	TP1	IB2	
1180	Ethyl butyrate	3	III	3	B1, T1	242	T2	TP1	IB3	
1181	Ethyl chloroacetate	6.1	II	6.1, 3	T14	243	T7	TP2	IB2	
1182	Ethyl chloroformate	6.1	I	6.1, 3, 8	2, A3, A6, A7, B9, B14, B32, B74, N34, B14,.	B32, B74, N34,.	T38, T43, T45	244	T20	TP2 TP13 TP38 TP45
1183	Ethyldichlorosilane	4.3	I	4.3, 8, 3	A2, A3, A7, N34, T18, T26.	244	T10	TP2 TP7 TP13		
1184	Ethylene dichloride	3	II	3, 6.1	T14	243	T7	TP1	IB2	
1185	Ethyleneimine, inhibited.	6.1	I	6.1, 3	1, B9, B14, B30, B72, B77, N25, N32, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
1188	Ethylene glycol monomethyl ether.	3	III	3	B1, T1	242	T2	TP1	IB3	
1189	Ethylene glycol monomethyl ether acetate.	3	III	3	B1, T1	242	T2	TP1	IB3	
1190	Ethyl formate	3	II	3	T8	242	T4	TP1	IB2	
1191	Octyl aldehydes	3	III	3	B1, T1	242	T2	TP1	IB3	
1192	Ethyl lactate	3	III	3	B1, T1	242	T2	TP1	IB3	
1193	Ethyl methyl ketone or Methyl ethyl ketone.	3	II	3	T8	242	T4	TP1	IB2	
1195	Ethyl propionate	3	II	3	T1	242	T4	TP1	IB2	
1196	Ethyltrichlorosilane	3	II	3, 8	A7, B100, N34, T15, T26.	243	T7	TP2 TP13	IB1	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1197	Extracts, flavoring, liquid.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1198	Formaldehyde, solutions, flammable.	3	III	3, 8	B1, T8	242	T4	TP1	IB3	
1199	Furaldehydes	6.1	II	6.1, 3	T15	243	T7	TP2	IB2	
1201	Fusel oil	3	II	3	T1	242	T4	TP1	IB2	
1201	Fusel oil	3	III	3	B1, T1	242	T2	TP1	IB3	
1202	Gas oil or Diesel fuel or Heating oil, light.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1203	Gasoline	3	II	3	B33, B101, T8.	242	T4	TP1	IB2	
1204	Nitroglycerin solution in alcohol with not more than 1 percent nitroglycerin.	3	II	3	N34, T25	None			IB2	
1206	Heptanes	3	II	3	T2	242	T4	TP1	IB2	
1207	Hexaldehyde	3	III	3	B1, T1	242	T2	TP1	IB3	
1208	Hexanes	3	II	3	B101, T8	242	T4	TP1	IB2	
1210	Printing ink, flammable.	3	I	3	T8, T31	243	T11	TP1 TP8		
1210	Printing ink, flammable.	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1210	Printing ink, flammable.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1212	Isobutanol or Isobutyl alcohol.	3	III	3	B1, T1	242	T2	TP1	IB3	
1213	Isobutyl acetate	3	II	3	T1	242	T4	TP1	IB2	
1214	Isobutylamine	3	II	3, 8	B101, T8	243	T7	TP1	IB2	
1216	Isooctenes	3	II	3	T8	242	T4	TP1	IB2	
1218	Isoprene, inhibited	3	I	3	T20	243	T11	TP2		
1219	Isopropanol or Isopropyl alcohol.	3	II	3	T1	242	T4	TP1	IB2	
1220	Isopropyl acetate	3	II	3	T1	242	T4	TP1	IB2	
1221	Isopropylamine	3	I	3, 8	T20	243	T11	TP2		
1222	Isopropyl nitrate	3	II	3	T25	None			IB2	BB7
1223	Kerosene	3	III	3	B1, T1	242	T2	TP2	IB3	
1224	Ketones, liquid, n.o.s.	3	I	3	T8, T31	243	T11	TP1 TP8 TP27		
1224	Ketones, liquid, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
1224	Ketones, liquid, n.o.s.	3	III	3	B1, T7, T30.	242	T4	TP1 TP29	IB3	
1228	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s.	3	II	3, 6.1	T13	243	T11	TP2 TP27	IB2	
1228	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s.	3	III	3, 6.1	B1, T8	242	T7	TP1 TP28	IB3	
1229	Mesityl oxide	3	III	3	B1, T1	242	T2	TP1	IB3	
1230	Methanol	3	II	3	T8	242	T7	TP2	IB2	
1230	Methanol	3	II	3, 6.1	T8	242	T7	TP2	IB2	
1231	Methyl acetate	3	II	3	B101, T8	242	T4	TP1	IB2	
1233	Methylamyl acetate	3	III	3	B1, T1	242	T2	TP1	IB3	
1234	Methylal	3	II	3	T14	242	T7	TP2	IB2	BB8
1235	Methylamine, aqueous solution.	3	II	3, 8	B1, T8	243	T7	TP1	IB2	
1237	Methyl butyrate	3	II	3	T1	242	T4	TP1	IB2	
1238	Methyl chloroformate	6.1	I	6.1, 3, 8	1, B9, B14, B30, B72, N34, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
1239	Methyl chloromethyl ether.	6.1	I	6.1, 3	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP38 TP44		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1242	Methyldichlorosilane	4.3	I	4.3, 8, 3	A2, A3, A7, B6, B77, N34, T16, T26.	243	T10	TP2 TP7 TP13		
1243	Methyl formate	3	I	3	T20	243	T11	TP2		
1244	Methylhydrazine	6.1	I	6.1, 3, 8	1, B7, B9, B14, B30, B72, B77, N34, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
1245	Methyl isobutyl ketone.	3	II	3	T1	242	T4	TP1	IB2	
1246	Methyl isopropenyl ketone, inhibited.	3	II	3	T7	242	T4	TP1	IB2	
1247	Methyl methacrylate monomer, inhibited.	3	II	3	T8	242	T4	TP1	IB2	
1248	Methyl propionate	3	II	3	B101, T2	242	T4	TP1	IB2	
1249	Methyl propyl ketone	3	II	3	T1	242	T4	TP1	IB2	
1250	Methyltrichlorosilane	3	I	3, 8	A7, B6, B77, N34, T14, T26.	243	T11	TP2 TP13		
1251	Methyl vinyl ketone, stabilized.	6.1	I	6.1, 3, 8	1, 25, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
1262	Octanes	3	II	3	T1	242	T4	TP1	IB2	
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.	3	I	3	T8, T31	243	T11	TP1 TP8		
1263	Paint related material including paint thinning, drying, removing, or reducing compound.	3	I	3	T8, T31	243	T11	TP1 TP8		
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.	3	II	3	B52, T7, T30.	242	T4	TP1 TP8	IB2	
1263	Paint related material including paint thinning, drying, removing, or reducing compound.	3	II	3	B52, T7, T30.	242	T4	TP1 TP8	IB2	
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.	3	III	3	B1, B52, T7, T30.	242	T2	TP1	IB3	
1263	Paint related material including paint thinning, drying, removing, or reducing compound.	3	III	3	B1, B52, T7, T30.	242	T2	TP1	IB3	
1264	Paraldehyde	3	III	3	B1, T1	242	T2	TP1	IB3	
1265	Pentanes	3	I	3	T20	243	T11	TP2		
1265	Pentanes	3	II	3	T20	242	T4	TP1	IB2	BB8
1266	Perfumery products with flammable solvents.	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1266	Perfumery products with flammable solvents.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1267	Petroleum crude oil ..	3	I	3	T8, T31	243	T11	TP1 TP8		
1267	Petroleum crude oil ..	3	II	3	T8, T31	242	T4	TP1 TP8	IB2	
1267	Petroleum crude oil ..	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1268	Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	I	3	T8, T31	243	T11	TP1 TP8		
1268	Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
1268	Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	III	3	B1, T7, T30.	242	T4	TP1 TP29	IB3	
1272	Pine oil ..	3	III3	B1, T1	242	T2	TP1	IB3		
1274	n-Propanol or Propyl alcohol, normal.	3	II	3	B1, T1	242	T4	TP1	IB2	
1274	n-Propanol or Propyl alcohol, normal.	3	III	3	B1, T1	242	T2	TP1	IB3	
1275	Propionaldehyde ..	3	II	3	T14	242	T7	TP1	IB2	
1276	n-Propyl acetate ..	3	II	3	T1	242	T4	TP1	IB2	
1277	Propylamine ..	3	II	3, 8	N34, T14	243	T7	TP1	IB2	
1278	Propyl chloride ..	3	II	3	N34, T14	242	T7	TP2	IB2	
1279	1,2-Dichloropropane ..	3	II	3	N36, T1	242	T4	TP1	IB2	BB8
1280	Propylene oxide ..	3	I	3	A3, N34, ..	243	T11	TP2 TP7		
1281	Propyl formates ..	3	II	3	T8	242	T4	TP1	IB2	
1282	Pyridine ..	3	II	3	T8	242	T4	TP2	IB2	
1286	Rosin oil ..	3	II	3	T7	242	T4	TP1	IB2	
1286	Rosin oil ..	3	III	3	B1, T1	242	T2	TP1	IB3	
1287	Rubber solution ..	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1287	Rubber solution ..	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1288	Shale oil ..	3	I	3	T7	243	T11	TP1 TP8 TP27		
1288	Shale oil ..	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1288	Shale oil ..	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1289	Sodium methylate solutions in alcohol.	3	II	3, 8	T8, T31	243	T7	TP1 TP8	IB2	
1289	Sodium methylate solutions in alcohol.	3	III	3, 8	B1, T7, T30.	242	T4	TP1	IB3	
1292	Tetraethyl silicate ..	3	III	3	B1, T1	242	T2	TP1	IB3	
1293	Tinctures, medicinal	3	II	3	T8, T31	242	T4	TP1 TP8	IB2	
1293	Tinctures, medicinal	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1294	Toluene ..	3	II	3	T1	242	T4	TP1	IB2	
1295	Trichlorosilane ..	4.3	I	4.3,	A7, N34, T24 T26.	244	T14	TP2 TP7		
1296	Triethylamine ..	3	II	3, 8	B101, T8	243	T7	TP1		IB2
1297	Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass.	3	I	3, 8	T42	243	T11	TP1		
1297	Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass.	3	II	3, 8	B1, T14	243	T7	TP1	IB2	
1297	Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass.	3	III	3, 8	B1	242	T7	TP1	IB3	
1298	Trimethylchlorosilane	3	II	3, 8	A3, A7, B77, N34, T14, T26.	243	T7	TP2 TP13	IB2	
1299	Turpentine ..	3	III	3	B1, T1	242	T2	TP1	IB3	
1300	Turpentine substitute	3	I	3	T1	243	T11	TP1 TP1 TP27		
1300	Turpentine substitute	3	II	3	T1	242	T4	TP1	IB2	
1300	Turpentine substitute	3	III	3	B1, T1	242	T2	TP1	IB3	
1301	Vinyl acetate, inhibited.	3	II	3	T8	242	T4	TP1	IB2	
1302	Vinyl ethyl ether, inhibited.	3	I	3	A3, B100, T14.	243	T11	TP2		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1300	Turpentine substitute	3	I	3	T1	243	T11	TP1 TP1 TP27		
1300	Turpentine substitute	3	II	3	T1	242	T4	TP1	IB2	
1300	Turpentine substitute	3	III	3	B1, T1	242	T2	TP1	IB3	
1301	Vinyl acetate, inhibited.	3	II	3	T8	242	T4	TP1	IB2	
1302	Vinyl ethyl ether, inhibited.	3	I	3	A3, B100, T14.	243	T11	TP2		
1303	Vinylidene chloride, inhibited.	3	I	3	T23, T29	243	T12	TP2 TP7		
1304	Vinyl isobutyl ether, inhibited.	3	II	3	T8	242	T4	TP1	IB2	
1305	Vinyltrichlorosilane, inhibited.	3	I	3, 8	A3, A7, B6, N34, T14, T26.	243	T11	TP2 TP13		
1306	Wood preservatives, liquid.	3	II	3	T7, T30	242	T4	TP1 TP8	IB2	
1306	Wood preservatives, liquid.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
1307	Xylenes	3	II	3	T1	242	T4	TP1	IB2	
1307	Xylenes	3	III	3	B1, T1	242	T2	TP1	IB3	
1308	Zirconium suspended in a liquid.	3	II	3		242			IB2	
1308	Zirconium suspended in a liquid.	3	III	3	B1	242			IB2	
1309	Aluminum powder, coated.	4.1	II	4.1		240			IB8	BB2, BB4
1309	Aluminum powder, coated.	4.1	III	4.1		240			IB8	BB3
1312	Borneol	4.1	III	4.1	A1	240			IB8	BB3
1313	Calcium resinate	4.1	III	4.1	A1, A19	240			IB6	
1314	Calcium resinate, fused.	4.1	III	4.1	A1, A19	240			IB4	
1318	Cobalt resinate, precipitated.	4.1	III	4.1	A1, A19	240			IB6	
1323	Ferrocium	4.1	II	4.1	59, A19	240			IB8	BB2, BB4
1325	Flammable solids, organic, n.o.s.	4.1	II	4.1	A1	240	T3	TP1	IB8	BB2, BB4
1325	Flammable solids, organic, n.o.s.	4.1	III	4.1	A1	240	T1	TP1	IB8	BB3
1326	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	II	4.1	A6, A19, A20 N34.	241			IB6	BB2
1328	Hexamethylenetetramine.	4.1	III	4.1	A1	240			IB8	BB3
1330	Manganese resinate	4.1	III	4.1	A1	240			IB6	
1332	Metaldehyde	4.1	III	4.1	A1	240			IB8	BB3
1333	Cerium, slabs, ingots, or rods.	4.1	II	4.1	N34	240			IB8	BB2, BB4
1334	Naphthalene, crude or Naphthalene, re-fined.	4.1	III	4.1	A1	240			IB8	BB3
1338	Phosphorus, amorphous.	4.1	III	4.1	A1, A19, B1, B9, B26.	243			IB8	BB3
1339	Phosphorus heptasulfide, free from yellow or white phosphorus.	4.1	II	4.1	A20, N34	240			IB4	
1340	Phosphorus pentasulfide, free from yellow or white phosphorus.	4.3	II	4.3, 4.1	A20, B59, B101, B106.	242			IB4	
1341	Phosphorus sesquisulfide, free from yellow or white phosphorus.	4.1	II	4.1	A20, N34	240			IB4	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1352	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	II	4.1	A19, A20, N34.	240			IB6	BB2
1353	Fibers of Fabrics impregnated with weakly nitrated nitrocellulose, n.o.s..	4.1	III	4.1	A1	240			IB8	BB3
1358	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	II	4.1	A19, A20, N34.	241			IB6	BB2
1361	Carbon, animal or vegetable origin.	4.2	II	4.2		242			IB6	
1361	Carbon, animal or vegetable origin.	4.2	III	4.2		241			IB8	BB3
1362	Carbon, activated	4.2	III	4.2		241			IB8	BB3
1363	Copra	4.2	III	4.2		241			IB8	BB3, BB6
1364	Cotton waste, oily	4.2	III	4.2		None			IB8	BB6
1365	Cotton, wet	4.2	III	4.2		241			IB8	BB6
1366	Diethylzinc	4.2	I	4.2, 4.3	B11, T28, T40.	244	T21	TP2 TP7		
1369	p-Nitrosodimethylaniline.	4.2	II	4.2	A19, A20, B101, N34.	241			IB6	BB2
1370	Dimethylzinc	4.2	I	4.2, 4.3	B11, B16, T28, T29, T40.	244	T21	TP2 TP7		
1373	Fibers or Fabrics, animal or vegetable or Synthetic, n.o.s. with animal or vegetable oil.	4.2	III	4.2	137	241			IB8	BB3
1374	Fish meal, unstabilized or Fish scrap, unstabilized.	4.2	II	4.2	A1, A19	241			IB8	BB2
1376	Iron oxide, spent, or Iron sponge, spent obtained from coal gas purification.	4.2	III	4.2	B18	240			IB8	BB3
1378	Metal catalyst, wetted with a visible excess of liquid.	4.2	II	4.2	A2, A8, N34.	None			IB1	
1379	Paper, unsaturated oil treated incompletely dried (including carbon paper).	4.2	III	4.2	B101, B106.	241			IB8	BB3
1381	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	I	4.2, 6.1	B9, B26, N34, T15, T26, T33.	243	T9	TP3		



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1382	Potassium sulfide, anhydrous or Potassium sulfide with less than 30 percent water of crystallization.	4.2	II	4.2	A19, A20, B16, B106, N34.	241			IB6	BB2
1384	Sodium dithionite or Sodium hydro-sulfite.	4.2	II	4.2	A19, A20, B106.	241			IB6	BB2
1385	Sodium sulfide, anhydrous or Sodium sulfide with less than 30 percent water of crystallization.	4.2	II	4.2	A19, A20, B106, N34.	241			IB6	BB2
1386	Seed cake with more than 1.5 percent oil and not more than 11 percent moisture.	4.2	III	None	N7	241			IB8	BB3, BB6
1386	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	III	None	N7	241			IB8	BB3, BB6
1390	Alkali metal amides	4.3	II	4.3	A6, A7, A8, A19, A20, B106.	241			IB7	BB2
1392	Alkaline earth metal amalgams.	4.3	I	4.3	A19, B101, B106, N34, N40.	242			IB4	BB1
1393	Alkaline earth metal alloys, n.o.s.	4.3	II	4.3	A19, B101, B106.	241			IB7	BB2
1394	Aluminum carbide	4.3	II	4.3	A20, B101, B106, N41.	242			IB7	BB2
1395	Aluminum ferrosilicon powder.	4.3	II	4.3, 6.1	A19, B106, B108.	242			IB5	BB2
1395	Aluminum ferrosilicon powder.	4.3	III	4.3, 6.1	A19, A20, B106, B108.	241			IB4	
1396	Aluminum powder, uncoated.	4.3	II	4.3	A19, A20, B106, B108.	242			IB7	BB2
1396	Aluminum powder, uncoated.	4.3	III	4.3	A19, A20, B106, B108.	241			IB8	BB4
1398	Aluminum silicon powder, uncoated.	4.3	III	4.3	A1, A19, B108.	241			IB8	BB4
1400	Barium	4.3	II	4.3	A19, B101, B106.	241			IB7	BB2
1401	Calcium	4.3	II	4.3	B101, B106.	241			IB7	BB2
1402	Calcium carbide	4.3	I	4.3	A1, A8, B55, B101, B106, N34.	242			IB4	BB1

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1402	Calcium carbide	4.3	II	4.3	A1, A8, B55, B59, B101, B106, N34.	241			IB7	BB2
1403	Calcium cyanamide with more than 0.1 percent of calcium carbide.	4.3	III	4.3	A1, A19, B105.	241			IB8	BB4
1405	Calcium silicide	4.3	II	4.3	A19, B105, B106.	241			IB7	BB2
1405	Calcium silicide	4.3	III	4.3	A1, A19, B106, B108.	241			IB8	BB4
1407	Cesium or Caesium	4.3	I	4.3	A19, B100, N34, N40.	242			IB1	BB1
1408	Ferrosilicon, with 30 percent or more but less than 90 percent silicon.	4.3	III	4.3, 6.1	A1, A19	240			IB8	BB4
1409	Metal hydrides, water-reactive, n.o.s.	4.3	II	4.3	A19, B101, B106, N34, N40.	242			IB4	
1415	Lithium	4.3	I	4.3	A7, A19, B100, N45.	244			IB1	BB1
1417	Lithium silicon	4.3	II	4.3	A19, A20, B105, B106.	241			IB7	BB2
1418	Magnesium, powder or Magnesium alloys, powder.	4.3	II	4.3, 4.2	A19, B56, B101, B106.	241			IB5	BB2
1418	Magnesium, powder or Magnesium alloys, powder.	4.3	III	4.3, 4.2	A19, B56, B106, B108.	241			IB8	BB4
1420	Potassium, metal alloys.	4.3	I	4.3	A19, A20, B27.	244			IB4	BB1
1422	Potassium sodium alloys.	4.3	I	4.3	A19, B27, N34, N40, T15, T26.	244	T9	TP3 TP7	IB4	BB1
1423	Rubidium	4.3	I	4.3	22, A7, A19, B100, N34, N40, N45.	242			IB1	BB1
1428	Sodium	4.3	I	4.3	A7, A8, A19, A20, B9, B48, B68, N34, T15, T29, T46.	244	T9	TP3 TP7 TP46	IB4	BB1
1431	Sodium methylate	4.2	II	4.2, 8	A19	242			IB5	BB2
1435	Zinc ashes	4.3	III	4.3	A1, A19, B108.	241			IB8	BB4
1436	Zinc powder or Zinc dust.	4.3	II	4.3, 4.2	A19, B109	242			IB7	BB2
1436	Zinc powder or Zinc dust.	4.3	III	4.3, 4.2	B108	242			IB8	BB4
1437	Zirconium hydride	4.1	II	4.1	A19, A20, N34.	240			IB4	
1438	Aluminum nitrate	5.1	III	5.1	A1, A29	240			IB8	BB3
1439	Ammonium dichromate.	5.1	II	5.1		242			IB8	BB2, BB4
1442	Ammonium perchlorate.	5.1	II	5.1	107, A9	242			IB6	BB2
1444	Ammonium persulfate	5.1	III	5.1	A1, A29	240			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1439	Ammonium dichromate.	5.1	II	5.1		242			IB8	BB2, BB4
1442	Ammonium perchlorate.	5.1	II	5.1	107, A9	242			IB6	BB2
1444	Ammonium persulfate	5.1	III	5.1	A1, A29	240			IB8	BB3
1445	Barium chlorate	5.1	II	5.1, 6.1	A9, N34, T8.	242	T4	TP1	IB6	BB2
1446	Barium nitrate	5.1	II	5.1, 6.1		242			IB8	BB2, BB4
1447	Barium perchlorate	5.1	II	5.1, 6.1	T8	242	T4	TP1	IB6	BB2
1448	Barium permanganate.	5.1	II	5.1, 6.1		242			IB6	BB2
1449	Barium peroxide	5.1	II	5.1, 6.1		242			IB6	BB2
1450	Bromates, inorganic, n.o.s.	5.1	II	5.1		242			IB8	BB2, BB4
1451	Cesium nitrate or Caesium nitrate.	5.1	III	5.1	A1, A29	240			IB8	BB3
1452	Calcium chlorate	5.1	II	5.1	N34	242			IB8	BB2, BB4
1453	Calcium chlorite	5.1	II	5.1	A9, N34	242			IB8	BB2, BB4
1454	Calcium nitrate	5.1	III	5.1	34	240			IB8	BB3
1455	Calcium perchlorate	5.1	II	5.1		242			IB6	BB2
1456	Calcium permanganate.	5.1	II	5.1		242			IB6	BB2
1457	Calcium peroxide	5.1	II	5.1		242			IB6	BB2
1458	Chlorate and borate mixtures.	5.1	II	5.1	A9, N34	240			IB8	BB2, BB4
1458	Chlorate and borate mixtures.	5.1	III	5.1	A9, N34	240			IB8	BB3
1459	Chlorate and magnesium chloride mixtures.	5.1	II	5.1	A9, N34, T8.	240	T4	TP1	IB8	BB2, BB4
1459	Chlorate and magnesium chloride mixtures.	5.1	III	5.1	A9, N34, T8.	240	T4	TP1	IB8	BB3
1461	Chlorates, inorganic, n.o.s.	5.1	II	5.1	A9, N34	242			IB6	BB2
1462	Chlorites, inorganic, n.o.s.	5.1	II	5.1	A7, N34	242			IB6	BB2
1463	Chromium trioxide, anhydrous.	5.1	II	5.1, 8	B106	242			IB8	BB4
1465	Didymium nitrate	5.1	III	5.1	A1	240			IB8	BB3
1466	Ferric nitrate	5.1	III	5.1	A1, A29	240			IB8	BB3
1467	Guanidine nitrate	5.1	III	5.1	A1	240			IB8	BB3
1469	Lead nitrate	5.1	II	5.1, 6.1		242			IB8	BB2, BB4
1470	Lead perchlorate, solid.	5.1	II	5.1, 6.1	T8	242	T4	TP1	IB6	BB2
1470	Lead perchlorate, solution.	5.1	II	5.1, 6.1	T8	243	T4	TP1	IB1	
1471	Lithium hypochlorite, dry or Lithium hypochlorite mixtures, dry.	5.1	II	5.1	A9, N34	240			IB8	BB2, BB4
1472	Lithium peroxide	5.1	II	5.1	A9, N34	None			IB6	BB2
1473	Magnesium bromate	5.1	II	5.1	A1	242			IB8	BB4
1474	Magnesium nitrate	5.1	III	5.1	A1	240			IB8	BB3
1475	Magnesium perchlorate.	5.1	II	5.1		242			IB6	BB2
1476	Magnesium peroxide	5.1	II	5.1		242			IB6	BB2
1477	Nitrates, inorganic, n.o.s.	5.1	II	5.1		240			IB8	BB2, BB4
1477	Nitrates, inorganic, n.o.s.	5.1	III	5.1		240			IB8	BB3
1479	Oxidizing solid, n.o.s.	5.1	I	5.1		242			IB6	BB1
1479	Oxidizing solid, n.o.s.	5.1	II	5.1		240			IB8	BB2, BB4
1479	Oxidizing solid, n.o.s.	5.1	III	5.1		240			IB8	BB3
1481	Perchlorates, inorganic, n.o.s.	5.1	II	5.1		242			IB6	BB2
1481	Perchlorates, inorganic, n.o.s.	5.1	III	5.1		240			IB8	BB3
1482	Permanganates, inorganic, n.o.s.	5.1	II	5.1	26, A30	242			IB6	BB2
1482	Permanganates, inorganic, n.o.s.	5.1	III	5.1	A26, A30	240			IB8	BB3
1483	Peroxides, inorganic, n.o.s.	5.1	II	5.1	A7, A20, N34.	242			IB6	BB2
1483	Peroxides, inorganic, n.o.s.	5.1	III	5.1	A7, A20, N34.	240			IB8	BB3
1484	Potassium bromate	5.1	II	5.1		242			IB8	BB4
1485	Potassium chlorate	5.1	II	5.1	A9, N34	242			IB8	BB4
1486	Potassium nitrate	5.1	III	5.1	A1, A29	240			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1489	Potassium perchlorate, solution.	5.1	II	5.1		242	T4	TP1	IB2	
1490	Potassium permanganate.	5.1	II	5.1		240			IB8	BB4
1491	Potassium peroxide ..	5.1	I	5.1	A20, N34	None			IB6	BB1
1492	Potassium persulfate	5.1	III	5.1	A1, A29	240			IB8	BB3
1493	Silver nitrate .....	5.1	II	5.1		242			IB8	BB4
1494	Sodium bromate .....	5.1	II	5.1		242			IB8	BB4
1495	Sodium chlorate .....	5.1	II	5.1	A9, N34, T8.	240	T4	TP1	IB8	BB4
1496	Sodium chlorite .....	5.1	II	5.1	A9, N34, T8.	242	T4	TP1	IB8	BB2, BB4
1498	Sodium nitrate .....	5.1	III	5.1	A1, A29	240			IB8	BB3
1499	Sodium nitrate and potassium nitrate mixtures.	5.1	III	5.1	A1, A29	240			IB8	BB3
1500	Sodium nitrite .....	5.1	III	5.1, 6.1	A1, A29	240			IB8	BB3
1502	Sodium perchlorate ..	5.1	II	5.1		242			IB6	BB2
1503	Sodium permanganate.	5.1	II	5.1		242			IB6	BB2
1504	Sodium peroxide .....	5.1	I	5.1	A20, N34	None			IB6	BB1
1505	Sodium persulfate .....	5.1	III	5.1	A1	240			IB8	BB3
1506	Strontium chlorate .....	5.1	II	5.1	A1, A9, N34.	242			IB8	BB2, BB4
1507	Strontium nitrate .....	5.1	III	5.1	A1, A29	240			IB8	BB3
1508	Strontium perchlorate	5.1	II	5.1		242			IB6	BB2
1509	Strontium peroxide .....	5.1	II	5.1		242			IB6	BB2
1510	Tetranitromethane .....	5.1	I	5.1, 6.1	2, B9, B14, B32, B74, T38, T43, T45.	None	T20	TP2 TP13 TP38 TP44		
1511	Urea hydrogen peroxide.	5.1	III	5.1, 8	A1, A7, A29.	240			IB8	BB3
1512	Zinc ammonium nitrite.	5.1	II	5.1		242			IB8	BB4
1513	Zinc chlorate .....	5.1	II	5.1	A9, N34	242			IB8	BB2, BB4
1514	Zinc nitrate .....	5.1	II	5.1		240			IB8	BB4
1515	Zinc permanganate ..	5.1	II	5.1		242			IB6B	B2
1516	Zinc peroxide .....	5.1	II	5.1		242			IB6	BB2
1541	Acetone cyanohydrin, stabilized.	6.1	I	6.1	2, A3, B9, B14, B32, B76, B77, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1544	Alkaloids, solid, n.o.s. or Alkaloid salts, solid, n.o.s. poisonous.	6.1	I	6.1		242			IB7	BB1
1544	Alkaloids, solid, n.o.s. or Alkaloid salts, solid, n.o.s. poisonous.	6.1	II	6.1		242			IB8	BB2, BB4
1544	Alkaloids, solid, n.o.s. or Alkaloid salts, solid, n.o.s. poisonous.	6.1	III	6.1		240			IB8	BB3
1545	Allyl isothiocyanate, stabilized.	6.1	II	6.1, 3	A3, A7	243	T7	TP2	IB2	
1546	Ammonium arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1547	Aniline .....	6.1	II	6.1	T8	243	T7	TP2	IB2	
1548	Aniline hydrochloride	6.1	III	6.1		240			IB8	BB3
1549	Antimony compounds, inorganic, solid, n.o.s.	6.1	III	6.1	35	240			IB8	BB3
1550	Antimony lactate .....	6.1	III	6.1		240			IB8	BB3
1551	Antimony potassium tartrate.	6.1	III	6.1		240			IB8	BB3
1553	Arsenic acid, liquid .....	6.1	I	6.1	T18, T27	243	T20	TP2 TP7 TP13		
1554	Arsenic acid, solid .....	6.1	II	6.1		242			IB8	BB2, BB4
1555	Arsenic bromide .....	6.1	II	6.1		242			IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1556	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	II	6.1		243			IB2	
1556	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	III	6.1		241			IB3	
1557	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	I	6.1		242			IB7	BB1
1557	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	II	6.1		242			IB8	BB2, BB4
1557	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	III	6.1		240			IB8	BB3
1558	Arsenic	6.1	II	6.1		242			IB8	BB2, BB4
1559	Arsenic pentoxide	6.1	II	6.1		242			IB8	BB2, BB4
1560	Arsenic trichloride	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1561	Arsenic trioxide	6.1	II	6.1		242			IB8	BB2, BB4
1562	Arsenical dust	6.1	II	6.1		242			IB8	BB2, BB4
1564	Barium compounds, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
1564	Barium compounds, n.o.s.	6.1	III	6.1		240			IB8	BB3
1565	Barium cyanide	6.1	I	6.1	N74, N75	242			IB7	BB1
1566	Beryllium compounds, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
1566	Beryllium compounds, n.o.s.	6.1	III	6.1		240			IB8	BB3
1567	Beryllium, powder	6.1	II	6.1, 4.1		242			IB8	BB2, BB4
1569	Bromoacetone	6.1	II	6.1, 3	2	245	T20	TP2 TP13		
1570	Brucine	6.1	I	6.1		242			IB7	BB1
1572	Cacodylic acid	6.1	II	6.1		242			IB8	BB2, BB4
1573	Calcium arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1574	Calcium arsenate and calcium arsenite, mixtures, solid.	6.1	II	6.1		242			IB8	BB2, BB4
1575	Calcium cyanide	6.1	I	6.1	N79, N80	242			IB7	BB1
1577	Chlorodinitrobenzenes.	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1578	Chloronitrobenzenes meta or para, solid.	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1578	Chloronitrobenzene, ortho, liquid.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
1579	4-Chloro-o-toluidine hydrochloride.	6.1	III	6.1		240			IB8	BB3
1580	Chloropicrin	6.1	I	6.1	2, B7, B9, B14, B32, B46, B74, T38, T43, TP45.	244	T20	TP2 TP13 TP38 T45		
1581	Chloropicrin and methyl bromide mixtures.	2.3		2.3	2, B9, B14	314, 315	T50			
1582	Chloropicrin and methyl chloride mixtures.	2.3		2.3	2	245	T50			
1583	Chloropicrin mixtures, n.o.s.	6.1	II	6.1		243			IB2	
1583	Chloropicrin mixtures, n.o.s.	6.1	III	6.1		241			IB3	
1585	Copper acetoarsenite	6.1	II	6.1		242			IB8	BB2, BB4
1586	Copper arsenite	6.1	II	6.1		242			IB8	BB2, BB4
1587	Copper cyanide	6.1	II	6.1		242			IB8	BB2, BB4
1588	Cyanides, inorganic, solid, n.o.s.	6.1	I	6.1	N74, N75	242			IB7	BB1
1588	Cyanides, inorganic, solid, n.o.s.	6.1	II	6.1	N74, N75	242			IB8	BB2, BB4
1588	Cyanides, inorganic, solid, n.o.s.	6.1	III	6.1	N74, N75	240			IB8	BB3
1590	Dichloroanilines, liquid.	6.1	II	6.1	T14	243	T7	TP2	IB2	
1590	Dichloroanilines, solid	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1591	o-Dichlorobenzene	6.1	III	6.1	T7	241	T4	TP1	IB3	
1593	Dichloromethane	6.1	III	6.1	N36, T13	241	T7	TP2	IB3	BB8
1594	Diethyl sulfate	6.1	II	6.1	B101, T14	243	T7	TP2	IB2	
1595	Dimethyl sulfate	6.1	I	6.1, 8	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1596	Dinitroanilines	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1597	Dinitrobenzenes, liquid.	6.1	II	6.1	11, T14	243	T7	TP2	IB2	
1597	Dinitrobenzenes, solid.	6.1	II	6.1	11	242			IB8	BB2, BB4
1598	Dinitro-o-cresol, solid	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1598	Dinitro-o-cresol, solution.	6.1	II	6.1	T14	243	T7	TP2	IB2	BB2, BB4
1599	Dinitrophenol solutions.	6.1	II	6.1	T8	243	T7	TP2	IB2	
1599	Dinitrophenol solutions.	6.1	III	6.1	T7	241	T4	TP1	IB3	
1600	Dinitrotoluenes, molten.	6.1	II	6.1	B100, T14	243	T7	TP3		
1601	Disinfectants, solid, toxic, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
1601	Disinfectants, solid, toxic, n.o.s.	6.1	III	6.1		240			IB8	BB3
1602	Dyes, liquid, toxic, n.o.s or Dye intermediates, liquid, toxic, n.o.s.	6.1	II	6.1		243			IB2	
1602	Dyes, liquid, toxic, n.o.s or Dye intermediates, liquid, toxic, n.o.s.	6.1	III	6.1		241			IB3	
1603	Ethyl bromoacetate	6.1	II	6.1, 3	T14	243	T7	TP2	IB2	
1604	Ethylenediamine	8	II	8, 3	T14	243	T7	TP2	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1605	Ethylene dibromide ...	6.1	I	6.1	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1606	Ferric arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1607	Ferric arsenite	6.1	II	6.1		242			IB8	BB2, BB4
1608	Ferrous arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1611	Hexaethyl tetraphosphate, solid.	6.1	II	6.1	N76	242			IB8	BB2, BB4
1611	Hexaethyl tetraphosphate liquid.	6.1	II	6.1	N76	243			IB2	BB2, BB4
1613	Hydrocyanic acid, aqueous solutions or Hydrogen cyanide, aqueous solutions with not more than 20 percent hydrogen cyanide.	6.1	I	6.1	2, B61, B65, B77, B82.	244	T20	TP2 TP13		
1616	Lead acetate	6.1	III	6.1		240			IB8	BB3
1617	Lead arsenates	6.1	II	6.1		242			IB8	BB2, BB4
1618	Lead arsenites	6.1	II	6.1		242			IB8	BB2, BB4
1620	Lead cyanide	6.1	II	6.1		242			IB8BB2, BB4	
1621	London purple	6.1	II	6.1		242			IB8	BB2, BB4
1622	Magnesium arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1623	Mercuric arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1624	Mercuric chloride	6.1	II	6.1		242			IB8	BB2, BB4
1625	Mercuric nitrate	6.1	II	6.1	N73	242			IB8	BB2, BB4
1626	Mercuric potassium cyanide.	6.1	I	6.1	N74, N75	242			IB7	BB1
1627	Mercurous nitrate	6.1	II	6.1		242			IB8	BB2, BB4
1629	Mercury acetate	6.1	II	6.1		242			IB8	BB2, BB4
1630	Mercury ammonium chloride.	6.1	II	6.1		242			IB8	BB2, BB4
1631	Mercury benzoate	6.1	II	6.1		242			IB8	BB2, BB4
1634	Mercury bromides	6.1	II	6.1		242			IB8	BB2, BB4
1636	Mercury cyanide	6.1	II	6.1	N74, N75	242			IB8	BB2, BB4
1637	Mercury gluconate	6.1	II	6.1		242			IB8	BB2, BB4
1638	Mercury iodide, solution.	6.1	II	6.1		243			IB8	BB2, BB4
1638	Mercury iodide, solid	6.1	II	6.1		242			IB2	BB2, BB4
1639	Mercury nucleate	6.1	II	6.1		242			IB8	BB2, BB4
1640	Mercury oleate	6.1	II	6.1		242			IB8	BB2, BB4
1641	Mercury oxide	6.1	II	6.1		242			IB8	BB2, BB4
1642	Mercury oxycyanide, desensitized.	6.1	II	6.1		242			IB8	BB2, BB4
1643	Mercury potassium iodide.	6.1	II	6.1		242			IB8	BB2, BB4
1644	Mercury salicylate	6.1	II	6.1		242			IB8	BB2, BB4
1645	Mercury sulfates	6.1	II	6.1		242			IB8	BB2, BB4
1646	Mercury thiocyanate	6.1	II	6.1		242			IB8	BB2, BB4
1647	Methyl bromide and ethylene dibromide mixtures, liquid.	6.1	I	6.1	2, B9, B14, B32, B74, N65, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP44		
1648	Acetonitrile	3	II	3	T14	242	T7	TP2	IB2	
1649	Motor fuel anti-knock mixtures.	6.1	I	6.1, 3	14, B9, B90, T26, T39.	244	T14	TP2 TP13		
1650	beta-Naphthylamine	6.1	II	6.1	T12, T26	242	T7	TP2	IB8	BB2, BB4
1651	Naphthylthiourea	6.1	II	6.1		242			IB8	BB2, BB4
1652	Naphthylurea	6.1	II	6.1		242			IB8	BB2, BB4
1653	Nickel cyanide	6.1	II	6.1	N74, N75	242			IB8	BB2, BB4
1654	Nicotine	6.1	II	6.1		243			IB2	
1655	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s..	6.1	I	6.1		242			IB7	BB1

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1655	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
1655	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s.	6.1	III	6.1		240			IB8	BB3
1656	Nicotine hydrochloride or Nicotine hydrochloride solution.	6.1	II	6.1		243			IB2	BB2, BB4
1657	Nicotine salicylate	6.1	II	6.1		242			IB8	BB2, BB4
1658	Nicotine sulfate, solid	6.1	II	6.1		242			IB8	BB2, BB4
1658	Nicotine sulfate, solution.	6.1	II	6.1	T14	243	T7	TP2	IB2	
1659	Nicotine tartrate	6.1	II	6.1		242			IB8	BB2, BB4
1661	Nitroanilines (o-; m-; p-).	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1662	Nitrobenzene	6.1	II	6.1	T14	243	T7	TP2	IB2	
1663	Nitrophenols (o-; m-; p-).	6.1	III	6.1	T8, T38	240	T4	TP3 TP38	IB8	BB3
1664	Nitrotoluenes, solid m-, or p-.	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1664	Nitrotoluenes, liquid o-; m-; p-.	6.1	II	6.1	T14	243	T7	TP2	IB2	BB2, BB4
1665	Nitroxylenes, (o-; m-; p-).	6.1	II	6.1	T14	243	T7	TP2	IB2	BB2, BB4
1669	Pentachloroethane	6.1	II	6.1	T14	243	T7	TP2	IB2	
1670	Perchloromethyl mercaptan.	6.1	I	6.1	2, A3, A7, B9, B14, B32, B74, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 T45		
1671	Phenol, solid	6.1	II	6.1	N78, T14	242	T6	TP2	IB8	BB2, BB4
1672	Phenylcarbamylamine chloride.	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1673	Phenylenediamines (o-; m-; p-).	6.1	III	6.1		240	T7	TP1	IB8	BB3
1674	Phenylmercuric acetate.	6.1	II	6.1		242			IB8	BB2, BB4
1677	Potassium arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1678	Potassium arsenite	6.1	II	6.1		242			IB8	BB2, BB4
1679	Potassium cuprocyanide.	6.1	II	6.1		242			IB8	BB2, BB4
1680	Potassium cyanide	6.1	I	6.1	B69, B77, N74, N75, T18, T26.	242	T14	TP2 TP13	IB7	BB1
1683	Silver arsenite	6.1	II	6.1		242			IB8	BB2, BB4
1684	Silver cyanide	6.1	II	6.1		242			IB8	BB2, BB4
1685	Sodium arsenate	6.1	II	6.1		242			IB8	BB2, BB4
1686	Sodium arsenite, aqueous solutions.	6.1	II	6.1	T15	243	T7	TP2	IB2	
1686	Sodium arsenite, aqueous solutions.	6.1	III	6.1	T15	241	T4	TP2	IB3	
1687	Sodium azide	6.1	II	6.1	B28	242			IB8	BB2, BB4
1688	Sodium cacodylate	6.1	II	6.1		242			IB8	BB2, BB4
1689	Sodium cyanide	6.1	I	6.1	B69, B77, N74, N75, T42.	242	T14	TP2 TP13	IB7	BB1
1690	Sodium fluoride	6.1	III	6.1	T8	240	T4	TP1	IB8	BB3
1691	Strontium arsenite	6.1	II	6.1		242			IB8	BB2, BB4
1692	Strychnine or Strychnine salts.	6.1	I	6.1		242			IB7	BB1
1693	Tear gas substances, liquid, n.o.s.	6.1	II	6.1		None			IB2	
1693	Tear gas substances, solid, n.o.s.	6.1	II	6.1		None			IB8	BB2, BB4



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1694	Bromobenzyl cyanides, solid.	6.1	I	6.1	T18	242	T14	TP2 TP13		
1694	Bromobenzyl cyanides, liquid.	6.1	I	6.1	T18	243	T14	TP2 TP13		
1695	Chloroacetone, stabilized.	6.1	I	6.1, 3, 8	2, B9, B14, B32, B74, N12, N32, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1697	Chloroacetophenone (CN), liquid.	6.1	II	6.1	A3, N12, N32, N33.	243	T11	TP2 TP13 TP27	IB2	
1697	Chloroacetophenone (CN), solid.	6.1	II	6.1	A3, N12, N32, N33, N34.	None	T7	TP2 TP13	IB8	BB2, BB4
1699	Diphenylchloroarsine, solid.	6.1	I	6.1	A8, B14, B32, N33, N34.	242			IB7	BB1
1699	Diphenylchloroarsine, liquid.	6.1	I	6.1	A8, B14, B32, N33, N34.	243	T14	TP2 TP13 TP27		
1701	Xylol bromide	6.1	II	6.1	A3, A6, A7, N33.	None	T7	TP2 TP13	IB2	
1702	Tetrachloroethane	6.1	II	6.1	N36, T14	243	T7	TP2	IB2	
1704	Tetraethyl dithiopyrophosphate.	6.1	II	6.1		242			IB8	BB2, BB4
1707	Thallium compounds, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
1708	Toluidines liquid	6.1	II	6.1	T14	243	T7	TP2	IB2	
1708	Toluidines solid	6.1	II	6.1		242	T7	TP2	IB8	BB2, BB4
1709	2,4-Toluylenediamine or 2,4-Toluenediamine.	6.1	III	6.1	T7	240	T4	TP1	IB8	BB3
1710	Trichloroethylene	6.1	III	6.1	N36, T1	241	T4	TP1	IB3	
1711	Xylidines, solution	6.1	II	6.1	T14	243	T7	TP2	IB2	
1711	Xylidines, solid	6.1	II	6.1	T14	242	T7	TP2	IB8	BB2, BB4
1712	Zinc arsenate or Zinc arsenite or Zinc arsenate and zinc arsenite mixtures.	6.1	II	6.1		242			IB8	BB2, BB4
1713	Zinc cyanide	6.1	I	6.1		242			IB7	BB1
1715	Acetic anhydride	8	II	8, 3	A3, A6, A7, A10, B2, T8.	243	T7	TP2	IB2	
1716	Acetyl bromide	8	II	8	B2, T12, T26.	242	T8	TP2 TP12	IB2	
1717	Acetyl chloride	3	II	3, 8	A3, A6, A7, B100, N34, T18, T26.	243	T8	TP2 TP12	IB1	
1718	Butyl acid phosphate	8	III	8	T7	241	T4	TP1	IB3	
1719	Caustic alkali liquids, n.o.s.	8	II	8	B2, T14	242	T11	TP2 TP27	IB2	
1719	Caustic alkali liquids, n.o.s.	8	III	8	T7	241	T7	TP1 TP28	IB3	
1722	Allyl chloroformate	6.1	I	6.1, 3, 8	2, B9, B14, B32, B74, N41, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1723	Allyl iodide	3	II	3, 8	A3, A6, B100, N34, T18.	243	T7	TP2 TP13	IB1	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1724	Allyltrichlorosilane, stabilized.	8	II	8, 3	A7, B2, B6, N34, T8, T26.	243	T7	TP2 TP13	IB2	
1725	Aluminum bromide, anhydrous.	8	II	8	B106	240			IB8	BB2, BB4
1726	Aluminum chloride, anhydrous.	8	II	8	B106	240			IB8	BB2, BB4
1727	Ammonium hydrogendifluoride, solid.	8	II	8	B106, N34	240			IB8	BB2, BB4
1728	Amyltrichlorosilane	8	II	8	A7, B2, B6, N34, T8, T26.	242	T7	TP2 TP13	IB2	
1729	Anisoyl chloride	8	II	8 B2, T8	242	T7	TP2	IB2		
1730	Antimony pentachloride, liquid.	8	II	8 B2, T8, T26.	242	T7	TP2	IB2		
1731	Antimony pentachloride, solutions.	8	II	8 B2, T8, T27.	242	T7	TP2	IB2		
1731	Antimony pentachloride, solutions.	8	III	8	T7, T26	241	T4	TP1	IB3	
1732	Antimony pentafluoride.	8	II	8, 6.1	A3, A6, A7, A10, N3, T12, T26.	243	T7	TP2	IB2	
1733	Antimony trichloride, liquid.	8	II	8	B2	242			IB2	
1733	Antimony trichloride, solid.	8	II	8	B106	240			IB8	BB2, BB4
1736	Benzoyl chloride	8	II	8	B2, T9, T26.	242	T8	TP2 TP12	IB2	
1737	Benzyl bromide	6.1	II	6.1, 8	A3, A7, N33, N34, T12, T26.	243	T8	TP2 TP12 TP13	IB2	
1738	Benzyl chloride	6.1	II	6.1, 8	A3, A7, B70, N33, N42, T12, T26.	243	T8	TP2 TP12 TP13	IB2	
1738	Benzyl chloride unstabilized.	6.1	II	6.1, 8	A3, A7, B8, B11, N33, N34, N43, T12, T26.	243	T8	TP2 TP12 TP13	IB2	
1739	Benzyl chloroformate	8	I	8	A3, A6, B4, N41, T18, T26.	243	T10	TP2 TP12 TP13		
1740	Hydrogendifluorides, n.o.s. solutions.	8	II	8	N3, N34	242			IB2	
1740	Hydrogendifluorides, n.o.s. solutions.	8	II	8	N3, N34	240			IB5	BB2, BB4
1740	Hydrogendifluorides, n.o.s. solutions.	8	III	8	N3, N34	241			IB3	BB3
1740	Hydrogendifluorides, n.o.s. solutions.	8	III	8	N3, N34	240			IB8	BB3
1742	Boron trifluoride acetic acid complex.	8	II	8	B2, B6, T9, T27.	242	T8	TP2 TP12	IB2	
1743	Boron trifluoride propionic acid complex.	8	II	8	B2, T9, T27.	242	T8 TP2 TP12	IB2 D		
1744	Bromine or Bromine solutions.	8	I	8, 6.1	1, A3, A6, B9, B64, B85, N34, N43, T18, T41.	249	T22	TP2 TP10 TP12 TP13		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1745	Bromine pentafluoride.	5.1	I	5.1, 6.1, .....	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP12 TP13, TP38		
1746	Bromine trifluoride ....	5.1	I	5.1, 6.1, 8 ...	2, B9, B14, B32, B74, T38, T43, T45.	244	T22	TP2 TP12 TP13, TP38		
1747	Butyltrichlorosilane ...	8	II	8, 3 .....	A7, B2, B6, N34, T8, T26.	243	T7	TP2 TP13	IB2	
1748	Calcium hypochlorite, dry or Calcium hypochlorite.	5.1	II	5.1 .....	A7, A9, N34.	None			IB8	BB2, BB4
1750	Chloroacetic acid, solution.	6.1	II	6.1, 8 .....	A7, N34, T8, T27.	243	T7	TP2	IB2	
1751	Chloroacetic acid, solid.	6.1	II	6.1, 8 .....	A3, A7, N34.	242			IB8	BB4
1752	Chloroacetyl chloride	6.1	I	6.1, 8 .....	2, A3, A6, A7, B3, B8, B9, B14, B32, B74, B77, N34, N43, T38, T43, T45.	244	T20	TP2 TP13, TP38, TP45		
1753	Chlorophenyltrichlorosilane.	8	II	8 .....	A7, B2, B6, N34, T8, T26.	242	T7	TP2	IB2	
1754	Chlorosulfonic acid (with or without sulfur trioxide).	8	I	8, 6.1 .....	2, A3, A6, A10, B9, B10, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP12 TP38, TP45		
1755	Chromic acid solution	8	II	8 .....	B2, T9, T27.	242	T8	TP2 TP12	IB2	
1755	Chromic acid solution	8	III	8 .....	T8, T26 ...	241	T4 TP1 TP12	IB3		
1756	Chromic fluoride, solid.	8	II	8 .....		240			IB8	BB2, BB4
1757	Chromic fluoride, solution.	8	II	8 .....	B2, T8 ....	242	T7	TP2	IB2	
1757	Chronic fluoride, solution.	8	III	8 .....	T7 .....	241	T4	TP1	IB3	
1758	Chromium oxychloride.	8	I	8 .....	A3, A6, A7, B10, N34, T12, T26.	243 DT10 ...	TP2 TP12			
1759	Corrosive solids, n.o.s.	8	I	8 .....		242			IB7	BB1
1759	Corrosive solids, n.o.s.	8	II	8 .....	128 .....	240			IB8	BB2, BB4
1759	Corrosive solids, n.o.s.	8	III	8 .....	128 .....	240			IB8	BB3
1760	Corrosive liquids, n.o.s.	8	I	8 .....	A7, B10, T42.	243	T14	TP2 TP27		
1760	Corrosive liquids, n.o.s.	8	II	8 .....	B2, T14 ...	242	T11	TP2 TP27	IB2	
1760	Corrosive liquids, n.o.s.	8	III	8 .....	T7 .....	241	T7	TP1 TP28	IB3	
1761	Cupriethylenediamine solution.	8	II	8, .....	8, T26 .....	243	T7	TP2	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1761	Cupriethylenediamine solution.	8	III	8, .....	T7 .....	242 .....	T7	TP1 TP28	IB3	
1762	Cyclohexenyltrichlorosilane.	8	II	8 .....	A7, B2, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
1763	Cyclohexyltrichlorosilane.	8	II	8 .....	A7, B2, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
1764	Dichloroacetic acid ...	8	II	8 .....	A3, A6, A7, B2, N34, T9, T27.	242 .....	T8	TP2 TP12	IB2	
1765	Dichloroacetyl chloride.	8	II	8 .....	A3, A6, A7, B2, N34, T8, T26.	242 .....	T7	TP2	IB2	
1766	Dichlorophenyltrichlorosilane.	8	II	8 .....	A7, B2, B6, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
1767	Diethyldichlorosilane	8	II	8, 3 .....	A7, B6, B100, N34, T8, T26.	243 .....	T7	TP2 TP13	IB2	
1768	Difluorophosphoric acid, anhydrous.	8	II	8 .....	A6, A7, B2, N5, N34, T9, T27.	242 .....	T8	TP2 TP12	IB2	
1769	Diphenyldichlorosilane.	8	II	8 .....	A7, B2, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
1770	Diphenylmethyl bromide.	8	II	8 .....	.....	240 .....			IB8	BB2, BB4
1771	Dodecyltrichlorosilane	8	II	8 .....	A7, B2, B6, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
1773	Ferric chloride, anhydrous.	8	III	8 .....	.....	240 .....			IB8	BB3
1775	Fluoroboric acid .....	8	II	8 .....	A6, A7, B2, B15, N3, N34, T15, T27.	242 .....	T7	TP2	IB2	
1776	Fluorophosphoric acid anhydrous.	8	II	8 .....	A6, A7, B2, N3, N34, T9, T27.	242 .....	T8	TP2 TP12	1B2	
1777	Fluorosulfonic acid ...	8	I	8 .....	A3, A6, A7, A10, B6, B10, N3, T9, T27.	243 .....	T10	TP2 TP12		
1778	Fluorosilicic acid .....	8	II	8 .....	A6, A7, B2, B15, N3, N34, T12, T27.	242 .....	T8	TP2 TP12	1B2	
1779	Formic acid .....	8	II	8 .....	B2, B28, T8.	242 .....	T7	TP2	IB2	
1780	Fumaryl chloride .....	8	II	8 .....	B2, T8, T26.	242 .....	T7	TP2	1B2	
1781	Hexadecyltrichlorosilane.	8	II	8 .....	A7, B2, B6, N34, T8.	242 .....	T7	TP2	1B2	
1782	Hexafluorophosphoric acid.	8	II	8 .....	A6, A7, B2, N3, N34, T9, T27.	242 .....	T8	TP2 TP12	1B2	
1783	Hexamethylenediamine solution.	8	II	8 .....	T8 .....	242 .....	T7	TP2	1B2	
1783	Hexamethylenediamine solution.	8	III	8 .....	T7 .....	241 .....	T4	TP1	1B3	
1784	Hexyltrichlorosilane ..	8	II	8 .....	A7, B2, B6, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1786	Hydrofluoric acid and Sulfuric acid mixtures.	8	I	8, 6.1	A6, A7, B15, B23, N5, N34, T18, T27.	243	T10	TP2 TP12 TP13		
1787	Hydriodic acid	8	II	8	A3, A6, B2, N41, T9, T27.	242	T7	TP2	IB2	
1787	Hydriodic acid	8	III	8	T8, T26	241	T4	TP1	IB3	
1788	Hydrobromic acid, with not more than 49 percent hydrobromic acid.	8	II	8	A3, A6, B2, B15, N41, T9, T27.	242	T7	TP2	IB2	
1788	Hydrobromic acid, with more than 49 percent hydrobromic acid.	8	II	8	B2, B15, N41, T9, T27.	242	T7	TP2	IB2	
1788	Hydrobromic acid, with more than 49 percent hydrobromic acid.	8	III	8	T8, T26	241	T4	TP1	IB3	
1788	Hydrobromic acid, with not more than 49 percent hydrobromic acid.	8	III	8	T8, T26	241	T4	TP1	IB3	
1789	Hydrochloric acid	8	II	8	A3, A6, B3, B15, N41, T9, T27.	242	T8	TP2 TP12	IB2	
1789	Hydrochloric acid	8	III	8	T8, T26	241	T4	TP1 TP12	IB3	
1790	Hydrofluoric acid, with more than 60 percent strength.	8	I	8, 6.1	A6, A7, B4, B15, B23, N5, N34, T18, T27.	243	T10	TP2 TP12 TP13		
1790	Hydrofluoric acid, with not more than 60 percent strength.	8	II	8, 6.1	A6, A7, B15, B110, N5, N34, T18, T27.	243	T8	TP2 TP12	IB2	
1791	Hypochlorite solutions.	8	II	8	A7, B2, B15, N34, T7.	242	T7	TP2 TP24	IB2	BB5
1791	Hypochlorite solutions.	8	III	8	B104, N34, T7.	241	T4	TP2 TP24	IB3	
1792	Iodine monochloride	8	II	8	B6, N41, T8, T26.	240	T7	TP2	IB8	BB2, BB4
1793	Isopropyl acid phosphate.	8	III	8	T7	240	T4	TP1	IB8	BB3
1794	Lead sulfate with more than 3 percent free acid.	8	II	8		240			IB8	BB2, BB4
1796	Nitrating acid mixtures with more than 50 percent nitric acid.	8	I	8, 5.1	T12, T27	243	T10	TP2 TP12 TP13		
1796	Nitrating acid mixtures with not more than 50 percent nitric acid.	8	II	8	B2, T12, T27.	242	T8	TP2 TP12 TP13	IB2	
1798	Nitrohydrochloric acid	8	I	8	A3, B10, N41, T18, T27.	243	T10	TP2 TP12 TP13		
1799	Nonytrichlorosilane	8	II	8	A7, B2, B6, N34, T8, T26.	242	T7	TP2 TP13	IB2	
1800	Octadecyltrichlorosilane.	8	II	8	A7, B2, B6, T8, N34.	242	T7	TP2 TP13	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1801	Octyltrichlorosilane ...	8	II	8	A7, B2, B6, N34, T8, T26.	242	T7	TP2 TP13	IB2	
1802	Perchloric acid with not more than 50 percent acid by mass.	8	II	8, 5.1	N41, T9	243	T7	TP2	IB2	
1803	Phenolsulfonic acid, liquid.	8	II	8	B2, N41, T8.	242	T7	TP2	IB2	
1804	Phenyltrichlorosilane	8	II	8	A7, B6, N34, T8.	242	T7	TP2	IB2	
1805	Phosphoric acid	8	III	8	A7, N34, T7.	241	T4	TP1	IB3	BB3
1806	Phosphorus pentachloride.	8	II	8	A7, B106, N34.	240			IB8	BB2, BB4
1807	Phosphorus pentoxide.	8	II	8	A7, N34	240			IB8	BB2, BB4
1808	Phosphorus tribromide.	8	II	8	A3, A6, A7, B2, B25, N34, N43, T8.	242	T7	TP2	IB2	
1809	Phosphorus trichloride.	6.1	I	6.1, 8	2, B9, B14, B15, B32, B74, B77, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1810	Phosphorus oxychloride.	8	II	8, 6.1	2, A7, B9, B14, B32, B74, B77, N34, T38, T43, T45.	244	T20	TP2 TP38 TP45		
1811	Potassium hydrogendifluoride, solution.	8	II	8, 6.1	N3, N34, T8.	243	T7	TP2	IB8	BB2, BB4
1811	Potassium hydrogendifluoride, solid.	8	II	8, 6.1	B106, N3, N34, T8.	240	T7	TP2	IB2	BB2, BB4
1812	Potassium fluoride	6.1	III	6.1	T8	240	T4	TP1	IB8	BB3
1813	Potassium hydroxide, solid.	8	II	8		240			IB8	BB2, BB4
1814	Potassium hydroxide, solution.	8	II	8	B2, T8	242	T7	TP2	IB2	
1814	Potassium hydroxide, solution.	8	III	8	T7	241	T4	TP1	IB3	
1815	Propionyl chloride	3	II	3, 8	B100, T8, T26.	243	T7	TP1	IB1	
1816	Propyltrichlorosilane	8	II	8, 3	A7, B2, B6, N34, T8, T26.	243	T7	TP2 TP13	IB2	
1817	Pyrosulfuryl chloride	8	II	8	B2, T9, T27.	242	T8	TP2 TP12	IB2	
1818	Silicon tetrachloride	8	II	8	A3, A6, B2, B6, B2, T8	T18, T26, T29.	242	T7	TP2 TP7	IB2
1819	Sodium aluminate, solution.	8	II	8	B2, T8	242	T7	TP2	IB2	
1819	Sodium aluminate, solution.	8	III	8	T7	241	T4	TP1	IB3	
1823	Sodium hydroxide, solid.	8	II	8		240			IB8	BB2, BB4
1824	Sodium hydroxide solution.	8	II	8	B2, N34, T8.	242	T7	TP2	IB2	
1824	Sodium hydroxide solution.	8	III	8	N34, T7	241	T4	TP1	IB3	
1825	Sodium monoxide	8	II	8		240			IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1826	Nitrating acid mixtures, spent with more than 50 percent nitric acid.	8	I	8, 5.1	T12, T27	243	T10	TP2 TP12 TP13		
1826	Nitrating acid mixtures spent with not more than 50 percent nitric acid.	8	II	8	B2, B100, T12, T27.	242	T8	TP2 TP12	IB2	
1827	Stannic chloride, anhydrous.	8	II	8	B2, T8, T26.	242	T7	TP2	IB2	
1828	Sulfur chlorides	8	I	8	5, A3, B10, B77, N34, T18, T27.	243	T20	TP2 TP12		
1829	Sulfur trioxide, inhibited or Sulfur trioxide, stabilized.	8	I	8, 6.1	2, A7, B9, B14, B32, B49, B74, B77, N34, T38, T43, T45.	244	T20	TP4 TP12 TP13 TP25 TP26 TP38 TP45		
1830	Sulfuric acid with more than 51 percent acid.	8	II	8	A3, A7, B3, B83, B84, N34, T9, T27.	242	T8	TP2 TP12	IB2	
1831	Sulfuric acid, fuming with less than 30 percent free sulfur trioxide.	8	I	8	A3, A7, B84, N34, T18, T27.	243	T20	TP2 TP12 TP13		
1831	Sulfuric acid, fuming with 30 percent or more free sulfur trioxide.	8	I	8, 6.1	2, B9, B14, B32, B74, B77, B84, N34, T38, T43, T45.	244	T20	TP2 TP12 TP13		
1832	Sulfuric acid, spent ...	8	II	8	A3, A7, B2, B83, B84, N34, T9, T27.	242	T8	TP2 TP12	IB2	
1833	Sulfurous acid	8	II	8	B3, T8	242	T7	TP2	IB2	
1834	Sulfuryl chloride	8	I	8, 6.1	1, A3, B6, B9, B10, B14, B30, B74, B77, N34, T38, T43, T44.	244	T22	TP2 TP12 TP38 TP44		
1835	Tetramethylammonium hydroxide.	8	II	8	B2, T8	242	T7	TP2	IB2	
1836	Thionyl chloride	8	I	8	A7, B6, B10, N34, T18, T27.	243	T10	TP2 TP12 TP13		
1837	Thiophosphoryl chloride.	8	II	8	A3, A7, B2, B8, B25, B101, N34, T12.	242	T7	TP2	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1838	Titanium tetrachloride	8	II	8, 6.1	2, A3, A6, B7, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1839	Trichloroacetic acid ..	8	II	8	A7, N34	240			IB8	BB2, BB4
1840	Zinc chloride, solution	8	III	8	T7	241	T4	TP1	IB3	
1841	Acetaldehyde ammonia.	9	III	9		240			IB8	BB6
1843	Ammonium dinitro-oresolate.	6.1	II	6.1	T8	242	T7	TP2	IB8	BB2, BB4
1846	Carbon tetrachloride	6.1	II	6.1	N36, T8	243	T7	TP2	IB2	
1847	Potassium sulfide, hydrated with not less than 30 percent water of crystallization.	8	II	8		240			IB8	BB2, BB4
1848	Propionic acid	8	III	8	T7	241	T4	TP1	IB3	
1849	Sodium sulfide, hydrated with not less than 30 percent water.	8	II	8	T8	240	T7	TP2	IB8	BB2, BB4
1858	Hexafluoropropylene, compressed or Refrigerant gas R 1216.	2.2		2.2		314, 315	T50			
1862	Ethyl crotonate	3	II	3	T1	242	T4	TP2	IB2	
1863	Fuel, aviation, turbine engine.	3	I	3	T7	243	T11	TP1 TP8		
1863	Fuel, aviation, turbine engine.	3	II	3	T1	242	T4	TP1 TP8	IB2	
1863	Fuel, aviation, turbine engine.	3	III	3	B1, T1	242	T2	TP1	IB3	
1865	n-Propyl nitrate	3	II	3	T25	None			IB2	BB7
1866	Resin solution, flammable.	3	I	3	B52, T8, T31.	243	T11	TP1 TP8		
1866	Resin solution, flammable.	3	II	3	B52, T7, T30.	242	T4	TP1 TP8	IB2	
1866	Resin solution, flammable.	3	III	3	B1, B52, T7, T30.	242	T2	TP1	IB3	
1868	Decaborane	4.1	II	4.1, 6.1	A19, A20	None			IB6	BB2
1869	Magnesium or Magnesium alloys with more than 50 percent magnesium in pellets, turnings or ribbons.	4.1	III	4.1	A1	240			IB8	BB3
1871	Titanium hydride	4.1	II	4.1	A19, A20, N34.	241			IB4	
1872	Lead dioxide	5.1	III	5.1	A1	240			IB8	BB3
1873	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass.	5.1	I	5.1, 8	A2, A3, N41, T9, T27.	243	T10	TP1 TP12		
1884	Barium oxide	6.1	III	6.1		240			IB8	BB3
1885	Benzidine	6.1	II	6.1		242			IB8	BB2, BB4
1886	Benzylidene chloride	6.1	II	6.1	T8	243	T7	TP2	IB2	
1887	Bromochloromethane	6.1	III	6.1	T7	241	T4	TP1	IB3	
1888	Chloroform	6.1	III	6.1	N36, T14	241	T7	TP2	IB3	
1891	Ethyl bromide	6.1	II	6.1	B100, T17	243	T7	TP2 TP13	IB2	BB8
1892	Ethylidichloroarsine	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
1894	Phenylmercuric hydroxide.	6.1	II	6.1		242			IB8	BB2, BB4
1895	Phenylmercuric nitrate.	6.1	II	6.1		242			IB8	BB2, BB4
1897	Tetrachloroethylene	6.1	III	6.1	N36, T1	241	T4	TP1	IB3	
1898	Acetyl iodide	8	II	8	B2, B101, T9.	242	T7	TP2 TP13	IB2	



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1902	Disooctyl acid phosphate.	8	III	8	T7	241	T4	TP1	IB3	
1903	Disinfectant, liquid, corrosive, n.o.s.	8	I	8	A7, B10, T42.	243	T14	TP2 TP27		
1903	Disinfectants, liquid, corrosive n.o.s.	8	II	8	B2	242	T7	TP2	IB2	
1903	Disinfectants, liquid, corrosive n.o.s.	8	III	8		241	T4	TP1	IB3	
1905	Selenic acid	8	I	8	N34	242			IB7	BB1
1906	Sludge, acid	8	II	8	A3, A7, B2, N34, T9, T27.	242	T8	TP2 TP12	IB2	
1907	Soda lime with more than 4 percent sodium hydroxide.	8	III	8		240			IB8	BB3
1908	Chlorite solution	8	II	8	A3, A6, A7, B2, N34, T8.	242	T7	TP2 TP24	IB2	
1908	Chlorite solution	8	III	8	A3, A6, A7, B2, N34, T8.	241	T4	TP2 TP24	IB3	
1910	Calcium oxide	8	III	8		240			IB8	BB3
1912	Methyl chloride and methylene chloride mixtures.	2.1		2.1		314, 315	T50			
1913	Neon, refrigerated liquid (cryogenic liquid).	2.2		2.2		None	T75			
1914	Butyl propionates	3	III	3	B1, T1	242	T2	TP1	IB3	
1915	Cyclohexanone	3	III	3	B1, T1	242	T2	TP1	IB3	
1916	2,2'-Dichlorodiethyl ether.	6.1	II	6.1, 3	N33, N34, T8.	243	T7	TP2	IB2	
1917	Ethyl acrylate, inhibited.	3	II	3	T8	242	T4	TP1 TP13	IB2	
1918	Isopropylbenzene	3	III	3	B1, T1	242	T2	TP1	IB3	
1919	Methyl acrylate, inhibited.	3	II	3	T8	242	T4	TP1 TP13	IB2	
1920	Nonanes	3	III	3	B1, T1	242	T2	TP1	IB3	
1921	Propyleneimine, inhibited.	3	I	3, 6.1	A3, N34, T25.	243	T14	TP2 TP13		
1922	Pyrrolidine	3	II	3, 8	T1	243	T7	TP1	IB2	
1923	Calcium dithionite or Calcium hydro-sulfite.	4.2	II	4.2	A19, A20	241			IB6	BB2
1929	Potassium dithionite or Potassium hydro-sulfite.	4.2	II	4.2	A8, A19, A20.	241			IB6	BB2
1931	Zinc dithionite or Zinc hydro-sulfite.	9	III	None		240			IB8	
1932	Zirconium scrap	4.2	III	4.2	N34	240			IB8	BB3
1935	Cyanide solutions, n.o.s.	6.1	I	6.1	B37, T18, T26.	243	T14	TP2 TP13 TP27		
1935	Cyanide solutions, n.o.s.	6.1	II	6.1	T18, T26	243	T11	TP2 TP13 TP27	IB2	
1935	Cyanide solutions, n.o.s.	6.1	III	6.1	T18, T26	241	T7	TP2 TP13 TP28	IB3	
1938	Bromoacetic acid, solid.	8	II	8	A7, N34, T9.	240	T7		IB8	BB2, BB4
1938	Bromoacetic acid, solution.	8	II	8	B2, T9	242	T7	TP2	IB2	
1939	Phosphorus oxybromide.	8	II	8	B8, B106, N41, N43.	240	T7	TP2	IB8	BB2, BB4
1940	Thioglycolic acid	8	II	8	A7, B2, N34, T8.	242	T7	TP2	IB2	
1941	Dibromodifluoromethane, R12B2.	9	III	None	T22	241	T11	TP2		
1942	Ammonium nitrate, with not more than 0.2 percent of combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.	5.1	III	5.1	A1, A29	240			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
1951	Argon, refrigerated liquid (cryogenic liquid).	2.2		2.2		318	T75			
1958	1,2-Dichloro-1,1,2,2-Tetrafluoroethane or Refrigerant gas R114.	2.2		2.2		314, 315	T50			
1961	Ethane, refrigerated liquid.	2.1		2.1		315	T75			
1963	Helium, refrigerated liquid (cryogenic liquid).	2.2		2.2		318	T75			
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	2.1		2.1		314, 315	T50			
1966	Hydrogen, refrigerated liquid (cryogenic liquid).	2.1		2.1		318, 319	T75			
1969	Isobutane see also Petroleum gases, 315 liquefied.	2.1		2.1	19	314, 315	T50			
1970	Krypton, refrigerated liquid (cryogenic liquid).	2.2		2.2		None	T75			
1972	Methane, refrigerated liquid (cryogenic liquid) or Natural gas, refrigerated liquid (cryogenic liquid), with high methane content).	2.1		2.1		318	T75			
1973	Chlorodifluoromethane and chloropentafluoroethane mixture or Refrigerant gas R 502 with fixed boiling point, with approximately 49 percent chlorodifluoromethane R502.	2.2		2.2		314, 315	T50			
1974	Chlorodifluorobromomethane or Refrigerant gas R 12B1.	2.2		2.2		314, 315	T50			
1976	Octafluorocyclobutane or Refrigerant gas RC318.	2.2		2.2		314, 315	T50			
1977	Nitrogen, refrigerated liquid cryogenic liquid.	2.2		2.2		318	T75			
1978	Propane see also Petroleum gases, liquefied.	2.1		2.1	19	314, 315	T50			
1983	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a.	2.2		2.2		314, 315	T50			
1986	Alcohols, flammable, toxic, n.o.s.	3	I	3, 6.1	T8, T31	243	T14	TP2 TP13 TP27		
1986	Alcohols, flammable, toxic, n.o.s.	3	II	3, 6.1	T8, T31	243	T11	TP2 TP27	IB2	
1986	Alcohols, flammable, toxic, n.o.s.	3	III	3, 6.1	B1, T8, T31	242	T7	TP1 TP28	IB3	
1987	Alcohols, n.o.s.	3	I	3	T8, T31	243	T11	TP1 TP8 TP27		
1987	Alcohols, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
1987	Alcohols, n.o.s.	3	III	3	B1, T7, T30	242	T4	TP1 TP29	IB3	
1988	Aldehydes, flammable, toxic, n.o.s.	3	I	3, 6.1	T8, T31	243	T14	TP2 TP13 TP27		
1988	Aldehydes, flammable, toxic, n.o.s.	3	II	3, 6.1	T8, T31	243	T11	TP2 TP27	IB2	
1988	Aldehydes, flammable, toxic, n.o.s.	3	III	3, 6.1	B1, T8, T31	242	T7	TP1 TP28	IB3	
1989	Aldehydes, n.o.s.	3	I	3	T8, T31	243	T11	TP1 TP27		
1989	Aldehydes, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP 28	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
1989	Aldehydes, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP 28	IB2	
1989	Aldehydes, n.o.s.	3	III	3	B1, T7, T30.	242	T4	TP1 TP29	IB3	
1990	Benzaldehyde	9	III	9	T1	241	T2	TP1	IB3	
1991	Chloroprene, inhibited.	3	I	3, 6.1	B57, T15	243	T14	TP2 TP6 TP13		
1992	Flammable liquids, toxic, n.o.s.	3	I	3, 6.1	T42	243	T14	TP2 TP13 TP27		
1992	Flammable liquids, toxic, n.o.s.	3	II	3, 6.1	T18	243	T7	TP2 TP13	IB2	
1992	Flammable liquids, toxic, n.o.s.	3	III	3, 6.1	B1, T18	242	T7	TP1 TP28	IB3	
1993	Flammable liquids, n.o.s.	3	I	3	T42	243	T11	TP1		
1993	Flammable liquids, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
1993	Flammable liquids, n.o.s.	3	III	3	B1, B52, T7, T30.	242	T4	TP1 TP29	IB3	
1994	Iron pentacarbonyl	6.1	I	6.1, 3	1, B9, B14, B30, B72, B77, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
1999	Tars, liquid including road asphalt and oils, bitumen and cut backs.	3	II	3	B13, T7, T30.	242	T3	TP3 TP29	IB2	
1999	Tars, liquid including road asphalt and oils, bitumen and cut backs.	3	III	3	B1, B13, T7, T30.	242	T1	TP3	IB3	
2001	Cobalt naphthenates, powder.	4.1	III	4.1	A19	240			IB8	BB3
2002	Celluloid, scrap	4.2	III	4.2		241			IB8	BB3
2003	Metal alkyls water-reactive, n.o.s. or Metal aryls water-reactive, n.o.s.	4.2	I	4.2, 4.3	B11, T42	244	T21	TP2 TP7		
2004	Magnesium diamide	4.2	II	4.2	A8, A19, A20.	241			IB6	
2008	Zirconium powder, dry.	4.2	II	4.2	A19, A20, N5, N34.	241			IB6	BB2
2008	Zirconium powder, dry.	4.2	III	4.2		241			IB8	BB3
2009	Zirconium, dry, finished sheets, strip or coiled wire.	4.2	III	4.2	A1, A19	240			IB8	
2014	Hydrogen peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary).	5.1	II	5.1, 8	12, A3, A6, B53, B80, B81, B85, B104, B110, T14, T37.	243	T7	TP2 TP6 TP24 TP37	IB2	BB5
2014	Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary).	5.1	II	5.1, 8	A2, A3, A6, B53, B104, B110, T14, TP37.	243	T7	TP2 TP6 TP24 T37	IB2	BB5
2015	Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions, stabilized with more than 60 percent hydrogen peroxide.	5.1	I	5.1, 8	12, B53, B80, B81, B85, T15, T37.	243	T10	TP2 TP6 TP24 TP37		
2018	Chloroanilines, solid	6.1	II	6.1	T14, T38	242	T7	TP2 TP38	IB8	BB2, BB4
2019	Chloroanilines, liquid	6.1	II	6.1	T14	243	T7	TP2	IB2	
2020	Chlorophenols, solid	6.1	III	6.1	T7	240	T4	TP1	IB8	BB3
2021	Chlorophenols, liquid	6.1	III	6.1	T7	241	T4	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
2022	Cresylic acid	6.1	II	6.1, 8	B110, T8	243	T7	TP2 TP13	IB2	
2023	Epichlorohydrin	6.1	II	6.1, 3	T14	243	T7	TP2 TP13	IB2	
2024	Mercury compounds, liquid, n.o.s.	6.1	II	6.1		243			IB2	
2024	Mercury compounds, liquid, n.o.s.	6.1	III	6.1		241			IB3	
2025	Mercury compounds, solid, n.o.s.	6.1	I	6.1		242			IB7	BB1
2025	Mercury compounds, solid, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
2025	Mercury compounds, solid, n.o.s.	6.1	III	6.1		240			IB8	BB3
2026	Phenylmercuric compounds, n.o.s.	6.1	I	6.1		242			IB7	BB1
2026	Phenylmercuric compounds, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
2026	Phenylmercuric compounds, n.o.s.	6.1	III	6.1		240			IB8	BB3
2027	Sodium arsenite, solid.	6.1	II	6.1		242			IB8	BB2, BB4
2030	Hydrazine hydrate or Hydrazine aqueous solutions, with not less than 37 percent but not more than 64 percent hydrazine, by mass.	8	II	8, 6.1	B16, B53, B110, T15.	243	T7	TP2 TP13	IB2	
2031	Nitric acid other than red fuming, with more than 70 percent nitric acid.	8	I	8, 5.1	B47, B53, T9, T27.	243	T10	TP2 TP12 TP13		
2031	Nitric acid other than red fuming, with not more than 70 percent nitric acid.	8	II	8	B2, B47, B53, T9, T27.	242	T8	TP2 TP12	IB2	
2032	Nitric acid, red fuming.	8	I	8, 5.1, 6.1	2, B9, B32, B74, T38, T43, T45.	244	T20	TP2 TP12 TP13 TP38 TP45		
2033	Potassium monoxide	8	II	8		240			IB8	BB2, BB4
2035	1,1,1-Trifluoroethane, compressed or Refrigerant gas R 143a.	2.1		2.1		314, 315	T50			
2038	Dinitrotoluenes, liquid	6.1	II	6.1	T8	243	T7	TP2	IB2	
2038	Dinitrotoluenes, solid	6.1	II	6.1	T8	242	T7	TP2	IB8	BB2, BB4
2045	Isobutyraldehyde or Isobutyl aldehyde.	3	II	3	T8	242	T4	TP1	IB2	
2046	Cymenes	3	III	3	B1, T1	242	T2	TP1	IB3	
2047	Dichloropropenes	3	II	3	T8	242	T4	TP1	IB2	
2047	Dichloropropenes	3	III	3	B1, T8	242	T2	TP1	IB3	
2048	Dicyclopentadiene	3	III	3	B1, T1	242	T2	TP1	IB3	
2049	Diethylbenzene	3	III	3	B1, T1	242	T2	TP1	IB3	
2050	Diisobutylene, isomeric compounds.	3	II	3	T1	242	T4	TP1	IB2	
2051	2-Dimethylaminoethanol.	8	II	8, 3	B2, T8	243	T7	TP2	IB2	
2052	Dipentene	3	III	3	B1, T1	242	T2	TP1	IB3	
2053	Methyl isobutyl carbinol.	3	III	3	B1, T1	242	T2	TP1	IB3	
2054	Morpholine	3	III	3	B1, T1	242	T10	TP2		
2055	Styrene monomer, inhibited.	3	III	3	B1, T1	242	T2	TP1	IB3	
2056	Tetrahydrofuran	3	II	3	T8	242	T4	TP1	IB2	
2057	Tripropylene	3	II	3	T1	242	T4	TP1	IB2	
2057	Tripropylene	3	III	3	B1, T1	242	T2	TP1	IB3	
2058	Valeraldehyde	3	II	3	T1	242	T4	TP1	IB2	
2059	Nitrocellulose, solution, flammable with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.	3	II	3	T8, T31	242	T4	TP1 TP8	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2059	Nitrocellulose, solution, flammable with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
2067	Ammonium nitrate fertilizers; uniform non-segregating mixtures of ammonium nitrate with added matter which is inorganic and chemically inert towards ammonium nitrate, with not less than 90 percent ammonium nitrate and not more than 0.2 percent.	5.1	III	5.1	52	240			IB8	BB3
2071	Ammonium nitrate fertilizers: uniform non-segregating mixtures of nitrogen/phosphate or nitrogen/potash types or complete fertilizers of nitrogen/phosphate/potash type, with not more than 70 percent ammonium nitrate and not more than 0.4 percent total.	9	III	9	132	240			IB8	
2074	Acrylamide	6.1	III	6.1	T8	240	T4	TP1	IB8	BB3
2075	Chloral, anhydrous, inhibited.	6.1	II	6.1	B101, T14	243	T7	TP2	IB2	
2076	Cresols	6.1	II	6.1, 8	B110, T8	243	T7	TP2	IB8	BB2, BB4
2077	alpha-Naphthylamine	6.1	III	6.1	T7	240	T3	TP1	IB8	BB3
2078	Toluene diisocyanate	6.1	II	6.1	B110, T14	243	T7	TP2 TP13	IB2	
2079	Diethylenetriamine	8	II	8	B2, T8	242	T7	TP2	IB2	
2187	Carbon dioxide, refrigerated liquid.	2.2		2.2		314, 315	T75			
2201	Nitrous oxide, refrigerated liquid.	2.2		2.2, 5.1	B6	314, 315	T75	TP22		
2205	Adiponitrile	6.1	III	6.1	T1	241	T3	TP1	IB3	
2206	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	II	6.1	T15	243	T11	TP2 TP13 TP27	IB2	
2206	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	III	6.1	T8	241	T7	TP1 TP13 TP28	IB3	
2208	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.	5.1	III	5.1	A1, A29, B103, N34.	240			IB8	BB3
2209	Formaldehyde, solutions, with not less than 25 percent formaldehyde.	8	III	8	T1	241	T4	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2210	Maneb or Maneb preparations with not less than 60 percent maneb.	4.2	III	4.2, 4.3	57, A1, A19, B105.	242			IB6	
2211	Polymeric beads, expandable, evolving flammable vapor.	9	III	None	32	221			IB8	BB6
2212	Blue asbestos (Crocidolite) or Brown asbestos (amosite, miosorite).	9	II	9		240			IB8	BB2, BB4
2213	Paraformaldehyde	4.1	III	4.1	A1	240			IB8	BB3
2214	Phthalic anhydride with more than .05 percent maleic anhydride.	8	III	8	T7	240	T4	TP3	IB8	BB3
2215	Maleic anhydride	8	III	8	T7	240	T4	TP1	IB8	BB3
2215	Maleic anhydride	8	III	8	T7	240	T4	TP3	IB8	
2216	Fish meal, stabilized or Fish scrap, stabilized.	9	III	None		218			IB8	
2217	Seed cake with not more than 1.5 percent oil and not more than 11 percent moisture.	4.2	III	None	N7	241			IB8	BB3, BB6
2218	Acrylic acid, inhibited	8	II	8, 3	B2, T8	243	T7	TP2	IB2	
2219	Allyl glycidyl ether	3	III	3	B1, T7	242	T2	TP1	IB3	
2222	Anisole	3	III	3	B1, T1	242	T2	TP1	IB3	
2224	Benzonitrile	6.1	II	6.1	T14	243	T7	TP2	IB2	
2225	Benzene sulfonyl chloride.	8	III	8	T8	241	T4	TP1	IB3	
2226	Benzotrithloride	8	II	8	B2, B101, T15.	242	T7	TP2	IB2	
2227	n-Butyl methacrylate, inhibited.	3	III	3	B1, T1	242	T2	TP1	IB3	
2232	2-Chloroethanal	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2233	Chloroanisidines	6.1	III	6.1		240			IB8	BB3
2234	Chlorobenzotrifluorides.	3	III	3	B1, T1	242	T2	TP1	IB3	
2235	Chlorobenzyl chlorides.	6.1	III	6.1	T8	241	T4	TP1	IB3	
2236	3-Chloro-4-methylphenyl isocyanate.	6.1	II	6.1		243			IB2	
2237	Chloronitroanilines	6.1	III	6.1		240			IB8	BB3
2238	Chlorotoluenes	3	III	3	B1, T1	242	T2	TP1	IB3	
2239	Chlorotoluidines solid	6.1	III	6.1		240	T4	TP1	IB8	BB3
2239	Chlorotoluidines liquid.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
2240	Chromosulfuric acid	8	I	8	A3, A6, A7, B4, B6, N34, T12, T27.	243	T10	TP2 TP12 TP13		
2241	Cycloheptane	3	II	3	T1	242	T4	TP1	IB2	
2242	Cycloheptene	3	II	3	B1, T7	242	T4	TP1	IB2	
2243	Cyclohexyl acetate	3	III	3	B1, T1	242	T2	TP1	IB3	
2244	Cyclopentanone	3	III	3	B1, T1	242	T2	TP1	IB3	
2245	Cyclopentanone	3	III	3	B1, T1	242	T2	TP1	IB3	
2246	Cyclopentene	3	II	3	B101, T13	242	T7	TP2	IB2	BB8
2247	n-Decane	3	III	3	B1, T1	242	T2	TP1	IB3	
2248	Di-n-butylamine	8	II	8, 3	T8	243	T7	TP2	IB2	
2250	Dichlorophenyl isocyanates.	6.1	II	6.1		242	T7	TP2	IB8	BB2, BB4
2251	Bicyclo(2,2,1)hepta-2,5-diene, inhibited or 2,5-Norbornadiene, inhibited.	3	II	3		242	T7	TP2	IB2	
2252	1,2-Dimethoxyethane	3	II	3	T1	242	T4	TP1	IB2	
2253	N,N-Dimethylaniline	6.1	II	6.1	T8	243	T7	TP2	IB1	
2256	Cyclohexene	3	II	3	B101, T7	242	T4	TP1	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2257	Potassium	4.3	I	4.3	A19, A20, B27, B100, N6, N34, T15, T26.	244	T9	TP3 TP7	IB1	BB1
2258	1,2-Propylenediamine	8	II	8, 3	A3, A6, N34, T8.	243	T7	TP2	IB2	
2259	Triethylenetetramine	8	II	8	B2, T8	242	T7	TP2	IB2	
2260	Tripropylamine	3	III	3, 8	B1, T8	242	T4	TP1	IB3	
2261	Xylenols	6.1	II	6.1	T8	242	T7	TP2	IB8	BB2, BB4
2262	Dimethylcarbamoyl chloride.	8	II	8	B2, T8	242	T7	TP2	IB2	
2263	Dimethylcyclohexanes.	3	II	3	T1	242	T4	TP1	IB2	
2264	Dimethylcyclohexylamine.	8	II	8, 3	B2, T8	243	T7	TP2	IB2	
2265	N,N-Dimethylformamide.	3	III	3	B1, T1	242	T2	TP2	IB3	
2266	Dimethyl-N-propylamine.	3	II	3, 8	T14, T26	243	T7	TP2 TP13	IB2	
2267	Dimethyl thiophosphoryl chloride.	6.1	II	6.1, 8	T7	243	T7	TP2	IB2	
2269	3,3'-Iminodipropylamine.	8	III	8	T8	241	T4	TP2	IB3	
2270	Ethylamine, aqueous solution with not less than 50 percent but not more than 70 percent ethylamine.	3	II	3, 8	T14	243	T7	TP1	IB2	
2271	Ethyl amyl ketone	3	III	3	B1, T1	242	T2	TP1	IB3	
2272	N-Ethylaniline	6.1	III	6.1	T2	241	T4	TP1	IB3	
2273	2-Ethylaniline	6.1	III	6.1	T2	241	T4	TP1	IB3	
2274	N-Ethyl-N-benzylaniline.	6.1	III	6.1	T2	241	T4	TP1	IB3	
2275	2-Ethylbutanol	3	III	3	B1, T1	242	T2	TP1	IB3	
2276	2-Ethylhexylamine	3	III	3, 8	B1, T2	242	T4	TP1	IB3	
2277	Ethyl methacrylate	3	II	3	T1	242	T4	TP1	IB2	
2278	n-Heptene	3	II	3	B101, T8	242	T4	TP1	IB2	
2279	Hexachlorobutadiene	6.1	III	6.1	T7	241	T4	TP1	IB3	
2280	Hexamethylenediamine, solid.	8	III	8		240	T4	TP1	IB8	BB3
2281	Hexamethylene diisocyanate.	6.1	II	6.1	B101, T14	243	T7	TP2 TP13	IB2	
2282	Hexanols	3	III	3	B1, T1	242	T2	TP1	IB3	
2283	Isobutyl methacrylate, inhibited.	3	III	3	B1, T1	242	T2	TP1	IB3	
2284	Isobutyronitrile	3	II	3, 6.1	T17	243	T7	TP2 TP13	IB2	
2285	Isocyanatobenzotrifluorides.	6.1	II	6.1, 3	5, B101, T14.	243	T7	TP2	IB2	
2286	Pentamethylheptane	3	III	3	B1, T1	242	T2	TP1	IB3	
2287	Isoheptenes	3	II	3	T7	242	T4	TP1	IB2	
2288	Isohexenes	3	II	3	T7	242	T11	TP1	IB2	BB8
2289	Isophoronediamine	8	III	8	T8	241	T4	TP1	IB3	
2290	Isophorone diisocyanate.	6.1	III	6.1	T7	241	T4	TP2	IB3	
2291	Lead compounds, soluble, n.o.s..	6.1	III	6.1	138	240			IB8	BB3
2293	4-Methoxy-4-methylpentan-2-one.	3	III	3	B1, T1	242	T2	TP1	IB3	
2294	N-Methylaniline	6.1	III	6.1	T7	241	T4	TP1	IB3	
2295	Methyl chloroacetate	6.1	I	6.1, 3	T42	243	T14	TP2 TP13		
2296	Methylcyclohexane	3	II	3	B1, T1	242	T4	TP1	IB2	
2297	Methylcyclohexanone	3	III	3	B1, T1	242	T2	TP1	IB3	
2298	Methylcyclopentane	3	II	3	T8	242	T4	TP1	IB2	
2299	Methyl dichloroacetate.	6.1	III	6.1	T1	241	T4	TP1	IB3	
2300	2-Methyl-5-ethylpyridine.	6.1	III	6.1	T7	241	T4	TP1	IB3	
2301	2-Methylfuran	3	II	3	T7	242	T4	TP1	IB2	
2302	5-Methylhexan-2-one	3	III	3	B1, T1	242	T2	TP1	IB3	
2303	Isopropenylbenzene	3	III	3	B1, T1	242	T2	TP1	IB3	
2304	Naphthalene, molten	4.1	III	4.1	A1, T8	241	T1	TP3	IB1	
2305	Nitrobenzenesulfonic acid.	8	II	8		242			IB2	
2306	Nitrobenzotrifluorides	6.1	II	6.1	T8	243	T7	TP2	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2307	3-Nitro-4-chlorobenzotrifluoride.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2308	Nitrosylsulfuric acid ..	8	II	8	A3, A6, A7, B2, N34, T9, T27.	242	T8	TP2 TP12	IB2	
2309	Octadiene .....	3	II	3	B1, T1	242	T4	TP1	IB2	
2310	Pentane-2,4-dione ..	3	III	3, 6.1	B1, T1	242	T4	TP1	IB3	
2311	Phenetidines .....	6.1	III	6.1	T7	241	T4	TP1	IB3	
2312	Phenol, molten .....	6.1	II	6.1	B14, B100, T8.	243	T7	TP3		
2313	Picolines .....	3	III	3	B1, T8	242	T4	TP1	IB3	
2315	Polychlorinated biphenyls, liquid.	9	II	9	9, 81	241	T4	TP1	IB3	
2315	Polychlorinated biphenyls, solid.	9	II	9	9, 81	240			IB7	
2316	Sodium cuprocyanide, solid.	6.1	I	6.1		242			IB7	BB1
2317	Sodium cuprocyanide, solution.	6.1	I	6.1	T8, T26	243	T14	TP2 TP13		
2318	Sodium hydrosulfide, with less than 25 percent water of crystallization.	4.2	II	4.2	A7, A19, A20.	241			IB6	BB2
2319	Terpene hydrocarbons, n.o.s.	3	III	3	B1 T1	242	T4	TP1 TP29	IB3	
2320	Tetraethylenepentamine.	8	III	8	T2	241	T4	TP1	IB3	
2321	Trichlorobenzenes, liquid.	6.1	III	6.1	T7	241	T4	TP1	IB3	
2322	Trichlorobutene .....	6.1	II	6.1	T8	243	T7	TP2	IB2	
2323	Triethyl phosphite ..	3	III	3	B1, T1	242	T2	TP1	IB3	
2324	Triisobutylene .....	3	III	3	B1, T7, T30.	242	T4	TP1	IB3	
2325	1,3,5-Trimethylbenzene.	3	III	3	B1, T1	242	T2	TP1	IB3	
2326	Trimethylcyclohexylamine.	8	III	8	T2	241	T4	TP1	IB3	
2327	Trimethylhexamethylenediamines .....	8	III	8	T7	241	T4	TP1	IB3	
2328	Trimethylhexamethylene diisocyanate.	6.1	III	6.1	T8	241	T4	TP2 TP13	IB3	
2329	Trimethyl phosphite ..	3	III	3	B1, T1	242	T2	TP1	IB3	
2330	Undecane .....	3	III	3	B1, T1	242	T2	TP1	IB3	
2331	Zinc chloride, anhydrous.	8	III	8		240			IB8	BB3
2332	Acetaldehyde oxime	3	III	3	B1 T8	242	T4	TP1	IB3	
2333	Allyl acetate .....	3	II	3, 6.1	T8	243	T7	TP1 TP13	IB2	
2334	Allylamine .....	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2335	Allyl Dethyl ether .....	3	II	3, 6.1	T8	243	T7	TP1 TP13	IB2	
2336	Allyl formate .....	3	I	3, 6.1	T18, T26	243	T14	TP2 TP13		
2337	Phenyl mercaptan ..	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2338	Benzotrifluoride .....	3	II	3	T2	242	T4	TP1	IB2	
2339	2-Bromobutane .....	3	II	3	B1, T1	242	T4	TP1	IB2	
2340	2-Bromoethyl ethyl ether.	3	II	3	T7	242	T4	TP1	IB2	
2341	1-Bromo-3-methylbutane.	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
2342	Bromomethylpropanes.	3	II	3	T7, T30	242	T4	TP1	IB2	
2343	2-Bromopentane .....	3	II	3	T1	242	T4	TP1	IB2	
2344	Bromopropanes .....	3	II	3	T7	242	T4	TP1	IB2	
2344	Bromopropanes .....	3	III	3	T2	242	T2	TP1	IB3	
2345	3-Bromopropyne .....	3	II	3	T8	242	T4	TP1	IB2	
2346	Butanedione .....	3	II	3	T1	242	T4	TP1	IB2	



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2347	Butyl mercaptans	3	II	3	A3, T8	242	T4	TP1	IB2	
2348	Butyl acrylates, inhibited.	3	III	3	B1, T8, T31.	242	T2	TP1	IB3	
2350	Butyl methyl ether	3	II	3	T8	242	T4	TP1	IB2	
2351	Butyl nitrites	3	I	3	T8	243	T11	TP1 TP8 TP27		
2351	Butyl nitrites	3	II	3	T8	242	T4	TP1	IB2	
2351	Butyl nitrites	3	III	3	B1, T8	242	T2	TP1	IB3	
2352	Butyl vinyl ether, inhibited.	3	II	3	B101, T7	242	T4	TP1	IB2	
2353	Butyryl chloride	3	II	3, 8	B100, T9, T26.	243	T8	TP2 TP12 TP13	IB2	
2354	Chloromethyl ethyl ether.	3	II	3, 61	T8	243	T7	TP1	IB2	
2356	2-Chloropropane	3	I	3	N36, T14	243	T11	TP2 TP13		
2357	Cyclohexylamine	8	II	8, 3	B101, T8, T26.	243	T7	TP2	IB2	
2358	Cyclooctatetraene	3	II	3	T8	242	T4	TP1	IB2	
2359	Diallylamine	3	II	3, 6.1, 8	T8	243	T7	TP1	IB2	
2360	Diallylether	3	II	3, 6.1	N12, T8	243	T7	TP1 TP13	IB2	
2361	Diisobutylamine	3	III	3, 8	B1, T1	242	T4	TP1	IB3	
2362	1,1-Dichloroethane	3	II	3	B101, T7	242	T4	TP1	IB2	
2363	Ethyl mercaptan	3	I	3	T21	243	T11	TP2 TP13		
2364	n-Propyl benzene	3	III	3	B1, T1	242	T2	TP1	IB3	
2366	Diethyl carbonate	3	III	3	B1, T1	242	T2	TP1	IB3	
2367	alpha-Methylvaleraldehyde.	3	II	3	B1, T1	242	T4	TP1	IB2	
2368	alpha-Pinene	3	III	3	B1, T1	242	T2	TP1	IB3	
2370	1-Hexene	3	II	3	B101, T8	242	T4	TP1	IB2	
2371	Isopentenes	3	I	3	T20	243	T11	TP2		
2372	1,2-Di-(dimethylamino)ethane.	3	II	3	T8	242	T4	TP1	IB2	
2373	Diethoxymethane	3	II	3	T8	242	T4	TP1	IB2	
2374	3,3-Diethoxypropene	3	II	3	T1	242	T4	TP1	IB2	
2375	Diethyl sulfide	3	II	3	B101, T14	243	T7	TP1 TP13	IB2	
2376	2,3-Dihydropyran	3	II	3	T7	242	T4	TP1	IB2	
2377	1,1-Dimethoxyethane	3	II	3	T13	242	T7	TP1	IB2	
2378	2-Dimethylaminoacetoneitrile.	3	II	3, 6.1	T8	243	T7	TP1	IB2	
2379	1,3-Dimethylbutylamine.	3	II	3, 8	T8	243	T7	TP1	IB2	
2380	Dimethyl diethoxysilane.	3	II	3	T8	242	T4	TP1	IB2	
2381	Dimethyl disulfide	3	II	3	T8	242	T4	TP1	IB2	
2382	Dimethyl hydrazine, symmetrical.	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2383	Dipropyl amine	3	II	3, 8	T8	243	T7	TP1	IB2	
2384	Di-n-propyl ether	3	II	3	T1	242	T4	TP1	IB2	
2385	Ethyl isobutyrate	3	II	3	T1	242	T4	TP1	IB2	
2386	1-Ethylpiperidine	3	II	3, 8	T8	243	T7	TP1	IB2	
2387	Fluorobenzene	3	II	3	B101, T8	242	T4	TP1	IB2	
2388	Fluorotoluenes	3	II	3	T8	242	T4	TP1	IB2	
2389	Furan	3	I	3	T18	243	T12	TP2 TP13		
2390	2-Iodobutane	3	II	3	T8	242	T4	TP1	IB2	
2391	Iodomethylpropanes	3	II	3	T8	242	T4	TP1	IB2	
2392	Iodopropanes	3	III	3	B1, T8	242	T2	TP1	IB3	
2393	Isobutyl formate	3	II	3	T1	242	T4	TP1	IB2	
2394	Isobutyl propionate	3	III	3	B1, T1	242	T2	TP1	IB3	
2395	Isobutyryl chloride	3	II	3, 8	B100, T9, T26.	243	T7	TP2	IB1	
2396	Methacrylaldehyde, inhibited.	3	II	3, 6.1	45, T8	243	T7	TP1 TP13	IB2	
2397	3-Methylbutan-2-one	3	II	3	T1	242	T4	TP1	IB2	
2398	Methyl tert-butyl ether	3	II	3	B101, T14	242	T7	TP1	IB2	
2399	1-Methylpiperidine	3	II	3, 8	T8	243	T7	TP1	IB2	
2400	Methyl isovalerate	3	II	3	T1	242	T4	TP1	IB2	
2401	Piperidine	8	I	3, 88, 3	T2, T17	243	T10	TP2		
2402	Propanethiols	3	II	3	T8	242	T4	TP1 TP13	IB2	
2403	Isopropenyl acetate	3	II	3	T1	242	T4	TP1	IB2	
2404	Propionitrile	3	II	3, 6.1	T14	243	T7	TP1 TP13	IB2	
2405	Isopropyl butyrate	3	III	3	B1, T1	242	T2	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2406 .....	Isopropyl isobutyrate	3	II	3 .....	T1 .....	242 .....	T4	TP1	IB2	
2407 .....	Isopropyl chloroformate.	6.1	I	6.1, 3, 8 .....	2, B9, B14, B32, B74, B77, T38, T43, T45.	244 .....	T20	TP2 TP13 TP38 TP44		
2409 .....	Isopropyl propionate	3	II	3 .....	T1 .....	242 .....	T4	TP1	IB2	
2410 .....	1,2,3,6-Tetrahydropyridine.	3	II	3 .....	T8 .....	242 .....	T4	TP1	IB2	
2411 .....	Butyronitrile .....	3	II	3, 6.1 .....	T14 .....	243 .....	T7	TP1 TP13	IB2	
2412 .....	Tetrahydrothiophene	3	II	3 .....	T7 .....	242 .....	T4	TP1	IB2	
2413 .....	Tetrapropylorthotitanate.	3	III	3 .....	B1, T8 .....	242 .....	T4	TP1	IB3	
2414 .....	Thiophene .....	3	II	3 .....	B101, T2	242 .....	T4	TP1	IB2	
2416 .....	Trimethyl borate .....	3	II	3 .....	T14 .....	242 .....	T7	TP1	IB2	
2424 .....	Octafluoropropane or Refrigerant gas R 218.	2.2		2.2 .....		314, 315 .....	T50			
2426 .....	Ammonium nitrate, liquid (hot concentrated solution).	5.1		5.1 .....	B5, B100, T25.	243 .....	T7			
2427 .....	Potassium chlorate, aqueous solution.	5.1	II	5.1 .....	A2, T8 .....	241 .....	T4	TP1	IB2	
2427 .....	Potassium chlorate, aqueous solution.	5.1	III	5.1 .....	A2, T8 .....	241 .....	T4	TP1	IB2	
2428 .....	Sodium chlorate, aqueous solution.	5.1	II	5.1 .....	A2, B6, T8	241 .....	T4	TP1	IB2	
2428 .....	Sodium chlorate, aqueous solution.	5.1	III	5.1 .....	A2, T8 .....	241 .....	T4	TP1	IB2	
2429 .....	Calcium chlorate aqueous solution.	5.1	II	5.1 .....	A2, N41, T8.	242 .....	T4	TP1	IB2	
2429 .....	Calcium chlorate aqueous solution.	5.1	III	5.1 .....	A2, N41, T8.	241 .....	T4	TP1	IB2	
2430 .....	Alkylphenols, solid, n.o.s. (including C2–C12 homologues).	8	I	8 .....	T8 .....	242 .....	T10	TP2 TP28	IB7	BB1
2430 .....	Alkylphenols, solid, n.o.s. (including C2–C12 homologues).	8	II	8 .....	T8 .....	240 .....	T3	TP2	IB8	BB2, BB4
2430 .....	Alkylphenols, solid, n.o.s. (including C2–C12 homologues).	8	III	8 .....	T8 .....	240 .....	T3	TP1	IB8	BB3
2431 .....	Anisidines .....	6.1	III	6.1 .....	T1 .....	241 .....	T4	TP1	IB3	
2432 .....	N,N-Diethylaniline .....	6.1	III	6.1 .....	T2 .....	241 .....	T4	TP1	IB3	
2433 .....	Chloronitrotoluenes, solid.	6.1	III	6.1 .....		240 .....			IB8	BB3
2433 .....	Chloronitrotoluenes liquid.	6.1	III	6.1 .....		241 .....	T4	TP1	IB3	
2434 .....	Dibenzylchlorosilane.	8	II	8 .....	B2, T8, T26.	242 .....	T7	TP2 TP13	IB2	
2435 .....	Ethylphenylchlorosilane.	8	II	8 .....	A7, B2, N34, T8, T26.	242 .....	T7	TP2 TP13	IB2	
2436 .....	Thioacetic acid .....	3	II	3 .....	T8 .....	242 .....	T4	TP1	IB2	
2437 .....	Methylphenylchlorosilane.	8	II	8 .....	T8, T26 .....	242 .....	T7	TP2 TP13	IB2	
2438 .....	Trimethylacetyl chloride.	6.1	I	6.1, 8, 3 .....	2, A3, A6, A7, B3, B9, B14, B32, B74, N34, T38, T43, T45.	244 .....	T20	TP2 TP13 TP38 TP45		
2439 .....	Sodium hydrogendifluoride solution.	8	II	8 .....	N3, N34 .....	242 .....			IB8	BB2, BB4
2439 .....	Sodium hydrogendifluoride, solid.	8	II	8 .....	B106, N3, N34.	240 .....			IB8	BB2, BB4 s
2440 .....	Stannic chloride, pentahydrate.	8	III	8 .....		240 .....			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2442	Trichloroacetyl chloride.	8	II	8, 6.1	2, A3, A7, B9, B14, B32, B74, N34, T38, T43, T45.	244	T20	TP2 TP38, TP45		
2443	Vanadium oxytrichloride.	8	II	8	A3, A6, A7, B2, B16, N34, T8, T26.	242	T7	TP2	IB2	
2444	Vanadium tetrachloride.	8	I	8	A3, A6, A7, B4, N34, T8, T26.	243	T10	TP2		
2445	Lithium alkyls	4.2	I	4.2, 4.3	B11, T28, T40.	244	T21	TP2 TP7		
2446	Nitroresols	6.1	III	6.1		240			IB8	BB3
2447	Phosphorus white, molten.	4.2	I	4.2, 6.1	B9, B26, N34, T15, T26, T29.	243	T21	TP3 TP7 TP26		
2448	Sulfur, molten	4.1	III	4.1	T9, T38	247	T1	TP3 TP38	IB1	
2456	2-Chloropropene	3	I	3	A3, N36, T20.	243	T11	TP2		
2457	2,3-Dimethylbutane	3	II	3	T13	242	T7	TP1	IB2	
2458	Hexadienes	3	II	3	B101, T7	242	T4	TP1	IB2	
2459	2-Methyl-1-butene	3	I	3	T14	243	T11	TP2		
2460	2-Methyl-2-butene	3	II	3	T14	242	T7	TP1	IB2	BB8
2461	Methylpentadienes	3	II	3	T7	242	T4	TP1	IB2	
2464	Beryllium nitrate	5.1	II	5.1, 6.1		242			IB8	BB2, BB4
2465	Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts.	5.1	II	5.1	28	240			IB8	BB4
2466	Potassium superoxide.	5.1	I	5.1	A20	None			IB6	BB1
2468	Trichloroisocyanuric acid, dry.	5.1	II	5.1		240			IB8	BB4
2469	Zinc bromate	5.1	III	5.1	A1, A29	240			IB8	BB3
2470	Phenylacetoneitrile, liquid.	6.1	III	6.1	T8	241	T4	TP1	IB3	
2471	Osmium tetroxide	6.1	I	6.1	A8, B100, N33, N34.	242			IB7	BB1
2473	Sodium arsenilate	6.1	III	6.1		240			IB8	BB3
2474	Thiophosgene	6.1	II	6.1	2, A7, B9, B14, B32, B74, N33, N34, T38, T43, T45.	244	T20	TP2 TP38 TP45		
2475	Vanadium trichloride	8	III	8		240			IB8	BB3
2477	Methyl isothiocyanate	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2478	Isocyanates, flammable, toxic, n.o.s. or Isocyanate solutions, flammable, toxic, n.o.s. flashpoint less than 23 degrees C.	3	II	3, 6.1	5, A3, A7, T15.	243	T11	TP2 TP13 TP27	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2480	Methyl isocyanate	6.1	I	6.1, 3	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2481	Ethyl isocyanate	3	I	3, 6.1	1, A7, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2482	n-Propyl isocyanate	6.1	I	6.1, 3	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2483	Isopropyl isocyanate	3	I	3, 6.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2484	tert-Butyl isocyanate	6.1	I	6.1, 3	1, A7, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2485	n-Butyl isocyanate	6.1	I	6.1, 3	2, A7, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2486	Isobutyl isocyanate	3	I	3, 6.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27		
2487	Phenyl isocyanate	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, N33, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2488	Cyclohexyl isocyanate.	6.1	I	6.1, 3	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2490	Dichloroisopropyl ether.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2491	Ethanolamine or Ethanolamine solutions.	8	III	8	T7	241	T4	TP1	IB3	
2493	Hexamethyleneimine	3	II	3, 8	B101, T8	243	T7	TP1	IB2	
2496	Propionic anhydride	8	III	8	T2	241	T4	TP1	IB3	
2498	1, 2, 3, 6-Tetrahydrobenzaldehyde.	3	III	3	B1, T1	242	T2	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2501	Tris-(1-aziridinyloxy)phosphine oxide, solution.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2501	Tris-(1-aziridinyloxy)phosphine oxide, solution.	6.1	III	6.1	T7	241	T4	TP1	IB3	
2502	Valeryl chloride	8	II	8, 3	A3, A6, A7, B2, N34, T8.	243	T7	TP2	IB2	
2503	Zirconium tetrachloride.	8	III	8		240			IB8	BB3
2504	Tetrabromoethane	6.1	III	6.1	T7	241	T4	TP1	IB3	
2505	Ammonium fluoride	6.1	III	6.1		240			IB8	BB3
2506	Ammonium hydrogen sulfate.	8	II	8		240			IB8	BB2, BB4
2507	Chloroplatinic acid, solid.	8	III	8		240			IB8	BB3
2508	Molybdenum pentachloride.	8	III	8	T8, T26	240	T4	TP1	IB8	BB3
2509	Potassium hydrogen sulfate.	8	II	8	A7, N34	240			IB8	BB2, BB4
2511	2-Chloropropionic acid.	8	III	8	T8	241	TP2	IB3		
2512	Aminophenols (o-; m-; p-).	6.1	III	6.1	T1	240	T4	TP1	IB8	BB3
2513	Bromoacetyl bromide	8	II	8	B2, T9, T26.	242	T8	TP2 TP12	IB2	
2514	Bromobenzene	3	III	3	B1, T1	242	T2	TP1	IB3	
2515	Bromoform	6.1	III	6.1	T7	241	T4	TP1	IB3	
2516	Carbon tetrabromide	6.1	III	6.1		240			IB8	BB3
2517	1-Chloro-1,1-difluoroethanes or Refrigerant gas R 142b.	2.1		2.1		314, 315	T50			
2518	1,5,9-Cyclododecatriene.	6.1	III	6.1	T7	241	T4	TP1	IB3	
2520	Cyclooctadienes	3	III	3	B1, T1	242	T2	TP1	IB3	
2521	Diketene, inhibited	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2522	2-Dimethylaminoethyl methacrylate.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2524	Ethyl orthoformate	3	III	3	B1, T7	242	T2	TP1	IB3	
2525	Ethyl oxalate	6.1	III	6.1	T1	241	T4	TP1	IB3	
2526	Furfurylamine	3	III	3, 8	B1, T1	242	T4	TP1	IB3	
2527	Isobutyl acrylate, inhibited.	3	III	3	B1, T1	242	T2	TP1	IB3	
2528	Isobutyl isobutyrate	3	III	3	B1, T1	242	T2	TP1	IB3	
2529	Isobutyric acid	3	III	3, 8	B1, T1	242	T4	TP1	IB3	
2531	Methacrylic acid, inhibited.	8	III	8	T8, T47	241	T4	TP1 TP18	IB3	
2533	Methyl trichloroacetate.	6.1	III	6.1	T1	241	T4	TP1	IB3	
2535	4-Methylmorpholine or n-methylmorpholine.	3	II	3, 8	B6, T8	243	T7	TP1	IB2	
2536	Methyltetrahydrofuran	3	II	3	B101, T7	242	T4	TP1	IB2	
2538	Nitronaphthalene	4.1	III	4.1	A1	240			IB8	BB3
2541	Terpinolene	3	III	3	B1, T1	242	T2	TP1	IB3	
2542	Tributylamine	6.1	II	6.1	B110, T14	243	T7	TP2	IB2	
2545	Hafnium powder, dry	4.2	II	4.2	A19, A20, B101, B106, N34.	241			IB6	BB2
2545	Hafnium powder, dry	4.2	III	4.2	B100, B106.	241			IB8	BB3
2546	Titanium powder, dry	4.2	II	4.2	A19, A20, N5, N34.	241			IB6	BB2
2546	Titanium powder, dry	4.2	III	4.2		241			IB8	BB3
2547	Sodium superoxide	5.1	I	5.1	A20, N34	None			IB6	BB1
2552	Hexafluoroacetone hydrate.	6.1	II	6.1	T14	243	T7	TP2	IB2	
2554	Methyl allyl chloride	3	II	3	B101, T8	242	T4	TP1 TP13	IB2	
2558	Epibromohydrin	6.1	I	6.1, 3	T18, T26	243	T14	TP2 TP13		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2560	2-Methylpentan-2-ol ..	3	III	3	B1, T1	242	T2	TP1	IB3	
2561	3-Methyl-1-butene ....	3	I	3	T20	243	T11	TP2		
2564	Trichloroacetic acid, solution.	8	II	8	A3, A6, A7, B2, N34, T8.	242	T7	TP2	IB2	
2564	Trichloroacetic acid, solution.	8	III	8	A3, A6, A7, N34, T7.	241	T4	TP1	IB3	
2565	Dicyclohexylamine ....	8	III	8	T8	241	T4	TP1	IB3	
2567	Sodium pentachlorophenate.	6.1	II	6.1		242			IB8	BB2, BB4
2570	Cadmium compounds	6.1	I	6.1		242			IB7	BB1
2570	Cadmium compounds	6.1	II	6.1		242			IB8	BB2, BB4
2570	Cadmium compounds	6.1	III	6.1		240			IB8	BB3
2571	Alkylsulfuric acids ....	8	II	8	B2, T9, T27.	242	T8	TP2 TP12 TP13	IB2	
2572	Phenylhydrazine .....	6.1	II	6.1	T8	243	T7	TP2	IB2	
2573	Thallium chlorate .....	5.1	II	5.1, 6.1		242			IB6	BB2
2574	Tricresyl phosphate with more than 3 percent ortho isomer.	6.1	II	6.1	A3, N33, N34, T8.	243	T7	TP2	IB2	
2576	Phosphorus oxybromide, molten.	8	II	8	B2, B8, N41, N43, T8, T27.	242	T7	TP3 TP13	IB1	
2577	Phenylacetyl chloride	8	II	8	B2, T8, T26.	242	T7	TP2	IB2	
2578	Phosphorus trioxide ..	8	III	8		240			IB8	BB3
2579	Piperazine .....	8	III	8	T7	240	T4	TP1	IB8	BB3
2580	Aluminum bromide, solution.	8	III	8	T8	241	T4	TP1	IB3	
2581	Aluminum chloride, solution.	8	III	8	T8	241	T4	TP1	IB3	
2582	Ferric chloride, solution.	8	III	8	B15, T8	241	T4	TP1	IB3	
2583	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid, with more than 5 percent free sulfuric acid.	8	II	8		240			IB8	BB2, BB4
2584	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with more than 5 percent free sulfuric acid.	8	II	8	B2, T8, T27.	242	T8	TP2 TP12 TP13	IB2	
2585	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with not more than 5 percent free sulfuric acid.	8	III	8		240			IB8	BB3
2586	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with not more than 5 percent free sulfuric acid.	8	III	8	T8	241	T4	TP1	IB3	
2587	Benzoquinone .....	6.1	II	6.1		242			IB8	BB2, BB4
2588	Pesticides, solid, toxic, n.o.s..	6.1	I	6.1		242			IB7	
2588	Pesticides, solid, toxic, n.o.s..	6.1	II	6.1		242			IB8	BB2, BB4
2588	Pesticides, solid, toxic, n.o.s..	6.1	III	6.1		240			IB8	BB3
2589	Vinyl chloroacetate ...	6.1	II	6.1, 3	T14	243	T7	TP2	IB2	
2590	White asbestos (chrysotile, actinolite, anthophyllite, tremolite).	9	III	9		240			IB8	BB2, BB3
2591	Xenon, refrigerated liquid (cryogenic liquids).	2.2		2.2		None	T75			

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2602	Dichlorodifluoromethane and difluoroethane azeotropic mixture or Refrigerant gas R 500 with approximately 74 percent dichlorodifluoromethane.	2.2		2.2		314, 315	T50			
2603	Cycloheptatriene	3	II	3, 6.1	T14	243	T7	TP1 TP13	IB2	
2604	Boron trifluoride diethyl etherate.	8	I	8, 3	A19, T8, T26.	243	T10	TP2		
2605	Methoxymethyl isocyanate.	3	I	3, 6.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
2606	Methyl orthosilicate	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2607	Acrolein dimer, stabilized.	3	III	3	B1, T1	242	T2	TP1	IB3	
2608	Nitropropanes	3	III	3	B1, T1	242	T2	TP1	IB3	
2609	Triallyl borate	6.1	III	6.1		241			IB3	
2610	Triallylamine	3	III	3, 8	B1, T1	242	T4	TP1	IB3	
2611	Propylene chlorohydrin.	6.1	II	6.1, 3	T9	243	T7	TP2 TP13	IB2	
2612	Methyl propyl ether	3	II	3	T14	242	T7	TP2	IB2	BB8
2614	Methallyl alcohol	3	III	3	B1, T1	242	T2	TP1	IB3	
2615	Ethyl propyl ether	3	II	3	B101, T8	242	T4	TP1	IB2	
2616	Triisopropyl borate	3	II	3	T8, T31	242	T4	TP1	IB2	
2616	Triisopropyl borate	3	III	3	B1, T8, T31.	242	T2	TP1	IB3	
2617	Methylcyclohexanols, flammable.	3	III	3	B1, T2	242	T2	TP1	IB3	
2618	Vinyltoluenes, inhibited.	3	III	3	B1, T1	242	T2	TP1	IB3	
2619	Benzyl dimethylamine	8	II	8, 3	B2, T1	243	T7	TP2	IB2	
2620	Amyl butyrates	3	III	3	B1, T1	242	T2	TP1	IB3	
2621	Acetyl methyl carbinol.	3	III	3	B1, T1	242	T2	TP1	IB3	
2622	Glycinaldehyde	3	II	3, 6.1	T8	243	T7	TP1	IB2	BB8
2624	Magnesium silicide	4.3	II	4.3	A19, A20, B105, B106.	241			IB7	BB2
2626	Chloric acid aqueous solution, with not more than 10 percent chloric acid.	5.1	II	5.1	T25	None			IB2	
2627	Nitrites, inorganic, n.o.s..	5.1	II	5.1	33	None			IB8	BB4
2628	Potassium fluoroacetate.	6.1	I	6.1		242			IB7	BB1
2629	Sodium fluoroacetate	6.1	I	6.1		242			IB7	BB1
2630	Selenates or Selenites.	6.1	I	6.1		242			IB7	BB1
2642	Fluoroacetic acid	6.1	I	6.1	B100	242			IB7	BB1
2643	Methyl bromoacetate	6.1	II	6.1	B100, T8	243	T7	TP2	IB2	
2644	Methyl iodide	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2645	Phenacyl bromide	6.1	II	6.1	B106	242			IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
2646	Hexachlorocyclopentadiene.	6.1	I	6.1	2, B9, B14, B32, B74, B77, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2647	Malononitrile	6.1	II	6.1		242			IB8	BB2, BB4
2648	1,2-Dibromobutan-3-one.	6.1	II	6.1		243			IB2	
2649	1,3-Dichloroacetone	6.1	II	6.1		242			IB8	BB2, BB4
2650	1,1-Dichloro-1-nitroethane.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2651	4,4'-Diaminodiphenylmethane.	6.1	III	6.1		240	T4	TP1	IB8	BB3
2653	Benzyl iodide	6.1	II	6.1	T8	243	T7	TP2	IB2	
2655	Potassium fluorosilicate.	6.1	III	6.1		240			IB8	BB3
2656	Quinoline	6.1	III	6.1	T8	241	T4	TP1	IB3	
2657	Selenium disulfide	6.1	II	6.1		242			IB8	BB2, BB4
2659	Sodium chloroacetate	6.1	III	6.1		240			IB8	BB3
2660	Nitrotoluidines (mono).	6.1	III	6.1		240			IB8	BB3
2661	Hexachloroacetone	6.1	III	6.1	T8	241	T4	TP1	IB3	
2662	Hydroquinone	6.1	III	6.1		240	T4	TP1	IB8	BB3
2664	Dibromomethane	6.1	III	6.1	T7	241	T4	TP1	IB3	
2667	Butyltoluenes	6.1	III	6.1	T2	241	T4	TP1	IB3	
2668	Chloroacetonitrile	6.1	II	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP38 TP45	IBC99	
2669	Chlorocresols, solid	6.1	II	6.1		242	T7		IB8	BB2, BB3
2669	Chlorocresols, liquid	6.1	II	6.1	T8	243	T7	TP2	IB2	
2670	Cyanuric chloride	8	II	8		240			IB8	BB2, BB4
2671	Aminopyridines (o-; m-; p-).	6.1	II	6.1	T7	242	T7	TP2	IB8	BB2, BB4
2672	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	III	8	T14	241	T7	TP1	IB3	
2673	2-Amino-4-chlorophenol.	6.1	II	6.1		242			IB8	BB2, BB4
2674	Sodium fluorosilicate	6.1	III	6.1		240			IB8	BB3
2677	Rubidium hydroxide solution.	8	II	8	B2, T8	242	T7	TP2	IB2	
2677	Rubidium hydroxide solution.	8	III	8	T7	241	T4	TP1	IB3	
2678	Rubidium hydroxide	8	II	8	T8	240	T7	TP2	IB8	BB2, BB4
2679	Lithium hydroxide, solution.	8	II	8	B2, T8	242	T7	TP2	IB2	
2679	Lithium hydroxide, solution.	8	III	8	T8	241	T4	TP2	IB3	
2680	Lithium hydroxide, monohydrate or Lithium hydroxide, solid.	8	II	8		240			IB8	BB2, BB4
2681	Caesium hydroxide solution or Cesium hydroxide solution.	8	II	8	B2, T8	242	T7	TP2	IB2	
2681	Caesium hydroxide solution or Cesium hydroxide solution.	8	III	8	T7	241	T4	TP1	IB3	
2682	Caesium hydroxide or Cesium hydroxide.	8	II	8		240			IB8	BB2, BB4
2683	Ammonium sulfide solution.	8	II	8, 6.1, 3	T14	243	T7	TP2 TP13	IB1	
2684	Diethylaminopropylamine.	3	III	3, 8	B1, T8	242	T4	TP1	IB3	



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2685	N,N-Diethylethylenediamine.	8	II	8, 3	T8	243	T7	TP2	IB2	
2686	2-Diethylaminoethanol.	8	II	8, 3	B2, T15, T26.	243	T7	TP2	IB2	
2687	Dicyclohexylammonium nitrite.	4.1	III	4.1		240			IB8	BB3
2688	1-Chloro-3-bromopropane.	6.1	III	6.1	T2	241	T4	TP1	IB3	
2689	Glycerol alpha-monochlorohydrin.	6.1	III	6.1	T2	241	T4	TP1	IB3	
2690	N-n-Butyl imidazole ..	6.1	II	6.1	T8	243	T7	TP2	IB2	
2691	Phosphorus pentabromide.	8	II	8	A7, B106, N34.	240			IB8	BB2, BB4
2692	Boron tribromide .....	8	I	8, 6.1	2, A3, A7, B9, B14, B32, B74, N34, T38, T43, T45.	244	T20	TP2 TP12 TP13 TP38 TP45		
2693	Bisulfites, aqueous solutions, n.o.s.	8	III	8	T8	241	T7	TP1 TP28	IB3	
2698	Tetrahydrophthalic anhydrides with more than 0.05 percent of maleic anhydride.	8	III	8		240			IB8	BB3
2699	Trifluoroacetic acid ...	8	I	8	A3, A6, A7, B4, N3, N34, T18, T27.	243	T10	TP2 TP12		
2705	1-Pentol .....	8	II	8	B2, T8	242	T7	TP2	IB2	
2707	Dimethyldioxanes .....	3	II	3	T8, T31	242	T4	TP1	IB2	
2707	Dimethyldioxanes .....	3	III	3	B1, T7, T30.	242	T2	TP1	IB3	
2709	Butyl benzenes .....	3	III	3	B1, T1	242	T2	TP1	IB3	
2710	Dipropyl ketone .....	3	III	3	B1, T1	242	T2	TP1	IB3	
2713	Acridine .....	6.1	III	6.1		240			IB8	BB3
2714	Zinc resinate .....	4.1	III	4.1	A1	240			IB6	
2715	Aluminum resinate .....	4.1	III	4.1		240			IB6	
2716	1,4-Butynediol .....	6.1	III	6.1	A1	240			IB8	BB3
2717	Camphor, synthetic ..	4.1	III	4.1	A1	240			IB8	BB3
2719	Barium bromate .....	5.1	II	5.1, 6.1		242			IB8	BB2, BB4
2720	Chromium nitrate .....	5.1	III	5.1	A1, A29	240			IB8	BB3
2721	Copper chlorate .....	5.1	II	5.1	A1	242			IB8	BB2, BB4
2722	Lithium nitrate .....	5.1	III	5.1	A1	240			IB8	BB3
2723	Magnesium chlorate ..	5.1	II	5.1		242			IB8	BB2, BB4
2724	Manganese nitrate .....	5.1	III	5.1	A1	240			IB8	BB3
2725	Nickel nitrate .....	5.1	III	5.1	A1	240			IB8	BB3
2726	Nickel nitrite .....	5.1	III	5.1	A1	240			IB8	BB3
2727	Thallium nitrate .....	6.1	II	6.1, 5.1		242			IB6	BB2
2728	Zirconium nitrate .....	5.1	III	5.1	A1, A29	240			IB8	BB3
2729	Hexachlorobenzene ..	6.1	III	6.1		241			IB3	
2730	Nitroanisole .....	6.1	III	6.1	T8	240	T4	TP1	IB8	BB3
2732	Nitrobromobenzenes solid.	6.1	III	6.1		240	T4	TP1	IB8	BB3
2732	Nitrobromobenzenes liquid.	6.1	III	6.1	T8, T38	241	T4	TP1 TP38	IB3	
2733	Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	I	3, 8	T42	243	T14	TP1 TP27		
2733	Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	II	3, 8	T8, T31	243	T11	TP1 TP27	IB2	
2733	Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	III	3, 8	B1, T8, T31.	242	T7	TP1 TP28	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2734	Amines, liquid, corrosive, flammable, n.o.s. or Polyamines, liquid, corrosive, flammable, n.o.s.	8	I	8, 3	A3, A6, N34, T8, T31.	243	T14	TP2 TP27		
2734	Amines, liquid, corrosive, flammable, n.o.s. or Polyamines, liquid, corrosive, flammable, n.o.s.	8	II	8, 3	T8, T31	243	T11	TP2 TP27	IB2	
2735	Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s.	8	I	8	A3, A6, B10, N34, T42.	243	T14	TP2 TP27		
2735	Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s.	8	II	8	B2, T8	242	T11	TP1 TP27	IB2	
2735	Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s.	8	III	8	T8	241	T7	TP1 TP28	IB3	
2738	N-Butylaniline	6.1	II	6.1	T8	243	T7	TP2	IB2	
2739	Butyric anhydride	8	III	8	T2	241	T4	TP1	IB3	
2740	n-Propyl chloroformate.	6.1	I	6.1, 3, 8	2, A3, A6, A7, B9, B14, B32, B74, B77, N34, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP44		
2741	Barium hypochlorite with more than 22 percent available chlorine.	5.1	II	5.1, 6.1	A7, A9, N34.	None			IB8	BB2, BB4
2742	Chloroformates, toxic, corrosive, flammable, n.o.s.	6.1	II	6.1, 8, 3	5	243	T7	TP2	IB1	
2743	n-Butyl chloroformate	6.1	I	6.1, 8, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
2744	Cyclobutyl chloroformate.	6.1	II	6.1, 8, 3	T18	243	T7	TP2 TP13	IB1	
2745	Chloromethyl chloroformate.	6.1	II	6.1, 8	T18	243	T7	TP2 TP13	IB2	
2746	Phenyl chloroformate	6.1	II	6.1, 8	T12	243	T7	TP2 TP13	IB2	
2747	tert-Butylcyclohexylchloroformate.	6.1	III	6.1	T8	241	T4	TP1	IB3	
2748	2-Ethylhexyl chloroformate.	6.1	II	6.1, 8	T12	243	T7	TP2 TP13	IB2	
2749	Tetramethylsilane	3	I	3	T21, T26	243	T14	TP2		
2750	1,3-Dichloropropanol-2.	6.1	II	6.1	T8	243	T7	TP2	IB2	
2751	Diethylthiophosphoryl chloride.	8	II	8	B2, T8	240	T7	TP2	IB8	BB2, BB4
2752	1,2-Epoxy-3-ethoxypropane.	3	III	3	B1, T1	242	T2	TP1	IB3	
2753	N-Ethylbenzyltoluidines solid.	6.1	III	6.1		240	T7	TP1	IB8	BB3
2753	N-Ethylbenzyltoluidines liquid.	6.1	III	6.1	T14	241	T7	TP1	IB3	
2754	N-Ethyltoluidines	6.1	II	6.1	T14	243	T7	TP2	IB2	
2757	Carbamate pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BB1
2757	Carbamate pesticides, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2757	Carbamate pesticides, solid, toxic.	6.1	III	6.1		240			IB8	BB3
2758	Carbamate pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2758	Carbamate pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2759	Arsenical pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BB1
2759	Arsenical pesticides, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4
2759	Arsenical pesticides, solid, toxic.	6.1	III	6.1		240			IB8	BB3
2760	Arsenical pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2760	Arsenical pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2761	Organochlorine pesticides, solid toxic.	6.1	I	6.1		242			IB7	BB1
2761	Organochlorine pesticides, solid toxic.	6.1	II	6.1		242			IB8	BB2, BB4
2761	Organochlorine pesticides, solid toxic.	6.1	III	6.1		240			IB8	BB3
2762	Organochlorine pesticides liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2762	Organochlorine pesticides liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2763	Triazine pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BB1
2763	Triazine pesticides, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4
2763	Triazine pesticides, solid, toxic.	6.1	III	6.1		240			IB8	BB3
2764	Triazine pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2764	Triazine pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2771	Thiocarbamate pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BB1
2771	Thiocarbamate pesticides, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4
2771	Thiocarbamate pesticides, solid, toxic.	6.1	III	6.1		240			IB8	BB3
2772	Thiocarbamate pesticide, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2772	Thiocarbamate pesticide, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2775	Copper based pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BB1

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2775 .....	Copper based pesticides, solid, toxic.	6.1	II	6.1 .....	.....	242 .....			IB8	BB2, BB4
2775 .....	Copper based pesticides, solid, toxic.	6.1	III	6.1 .....	.....	240 .....			IB8	BB3
2776 .....	Copper based pesticides, liquid, flammable, tox, flash point less than 23 degrees C.	3	I	3, 6.1 .....	.....	243 .....	T14	TP2 TP13 TP27		
2776 .....	Copper based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1 .....	.....	243 .....	T11	TP2 TP13 TP27	IB2	
2777 .....	Mercury based pesticides, solid, toxic.	6.1	I	6.1 .....	.....	242 .....			IB7	BB1
2777 .....	Mercury based pesticides, solid, toxic.	6.1	II	6.1 .....	.....	242 .....			IB8	BB2, BB4
2777 .....	Mercury based pesticides, solid, toxic.	6.1	III	6.1 .....	.....	240 .....			IB8	BB3
2778 .....	Mercury based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1 .....	.....	243 .....	T14	TP2 TP13 TP27		
2778 .....	Mercury based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1 .....	.....	243 .....	T11	TP2 TP13 TP27	IB2	
2779 .....	Substituted nitrophenol pesticides, solid, toxic.	6.1	I	6.1 .....	.....	242 .....			IB7	BB1
2779 .....	Substituted nitrophenol pesticides, solid, toxic.	6.1	II	6.1 .....	.....	242 .....			IB8	BB2, BB4
2779 .....	Substituted nitrophenol pesticides, solid, toxic.	6.1	III	6.1 .....	.....	240 .....			IB8	BB3
2780 .....	Substituted nitrophenol pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1 .....	.....	243 .....	T14	TP2 TP13 T27		
2780 .....	Substituted nitrophenol pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1 .....	.....	243 .....	T11	TP2 TP13 TP27	IB2	
2781 .....	Bipyridilium pesticides, solid, toxic.	6.1	I	6.1 .....	.....	242 .....			IB7	BB1
2781 .....	Bipyridilium pesticides, solid, toxic.	6.1	II	6.1 .....	.....	242 .....			IB8	BB2, BB4
2781 .....	Bipyridilium pesticides, solid, toxic.	6.1	III	6.1 .....	.....	240 .....			IB8	BB3
2782 .....	Bipyridilium pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1 .....	.....	243 .....	T14	TP2 TP13 TP27		
2782 .....	Bipyridilium pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1 .....	.....	243 .....	T11	TP2 TP13 TP27	IB2	
2783 .....	Organophosphorus pesticides, solid, toxic.	6.1	I	6.1 .....	N77 .....	242 .....			IB7	BB1
2783 .....	Organophosphorus pesticides, solid, toxic.	6.1	II	6.1 .....	N77 .....	242 .....			IB8	BB2, BB4
2783 .....	Organophosphorus pesticides, solid, toxic.	6.1	III	6.1 .....	N77 .....	240 .....			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2784	Organophosphorus pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1	T42	243	T14	TP2 TP13 TP27		
2784	Organophosphorus pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1	T18	243	T11	TP2 TP13 TP27	IB2	
2785	4-Thiapentanal	6.1	III	6.1	T8	241	T4	TP1	IB3	
2786	Organotin pesticides, solid, toxic.	6.1	I	6.1		242			IB7	BBI
2786	Organotin pesticides, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4
2786	Organotin pesticides, solid, toxic.	6.1	III	6.1		240			IB8	BB3
2787	Organotin pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
2787	Organotin pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
2788	Organotin compounds, liquid, n.o.s.	6.1	I	6.1	A3, N33, N34, T42.	243	T14	TP2 TP13 TP27		
2788	Organotin compounds, liquid, n.o.s.	6.1	II	6.1	A3, N33, N34, T14.	243	T11	TP2 TP13 TP27	IB2	
2788	Organotin compounds, liquid, n.o.s.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
2789	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass.	8	II	8, 3	A3, A6, A7, A10, B2, T8.	243	T7	TP2	IB2	
2790	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass.	8	II	8	A3, A6, A7, A10, B2, T8.	242	T7	TP2	IB2	
2790	Acetic acid solution, with more than 10 percent and less than 50 percent acid by mass.	8	III	8	T8	242	T4	TP1	IB3	
2793	Ferrous metal borings or Ferrous metal shavings or Ferrous metal turnings or Ferrous metal cuttings in a form liable to self-heating.	4.2	III	4.2	A1, A19, B101.	241			IB8	BB3, BB6
2796	Battery fluid, acid	8	II	8	A3, A7, B2, B15, N6, N34, T9, T27.	242	T8	TP2 TP12	IB2	
2796	Sulfuric acid with not more than 51% acid.	8	II	8	A3, A7, B2, B15, N6, N34, T9, T27.	242	T8	TP2 TP12	IB2	
2797	Battery fluid, alkali	8	II	8	B2, N6, T8	242	T7	TP2	IB2	
2798	Phenyl phosphorus dichloride.	8	II	8	B2, B15, T8, T26.	242	T7	TP2	IB2	
2799	Phenyl phosphorus thiodichloride.	8	II	8	B2, B15, T8, T26.	242	T7	TP2	IB2	
2801	Dyes, liquid, corrosive, n.o.s. or Dye intermediates liquid, corrosive, n.o.s.	8	I	8	11, B10	243	T14	TP2 TP27		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2801	Dyes, liquid, corrosive, n.o.s. or Dye intermediates, liquid, corrosive, n.o.s.	8	II	8	11, B2, T14.	242	T11	TP2 TP27	IB2	
2801	Dyes, liquid, corrosive, n.o.s. or Dye intermediates liquid, corrosive, n.o.s.	8	III	8	11, T7	241	T7	TP1 TP28	IB3	
2802	Copper chloride	8	III	8		240			IB8	BB3
2805	Lithium hydride, fused solid.	4.3	II	4.3	A8, A19, A20, B101, B106.	241			IB4	
2806	Lithium nitride	4.3	I	4.3	A19, B101, B106, N40.	242			IB4	BB1
2810	Toxic, liquids, organic, n.o.s. Inhalation hazard, Packing Group I, Zone A.	6.1	I	6.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27 TP38 TP44		
2810	Toxic, liquids, organic, n.o.s. Inhalation hazard, Packing Group I, Zone B.	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP27 TP38 TP45		
2810	Toxic, liquids, organic, n.o.s.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2810	Toxic, liquids, organic, n.o.s.	6.1	II	6.1	B110, T14	243	T11	TP2 TP13 TP27	IB2	
2810	Toxic, liquids, organic, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
2811	Toxic solids, organic, n.o.s.	6.1	I	6.1		242			IB7	
2811	Toxic solids, organic, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
2811	Toxic solids, organic, n.o.s.	6.1	III	6.1		240			IB8	BB3
2812	Sodium aluminate, solid.	8	III	8		240			IB8	BB3
2813	Water reactive solid, n.o.s.	4.3	I	4.3	B101, B106, N40.	240			IB4	
2813	Water-reactive solid, n.o.s.	4.3	II	4.3	B101, B106.	242			IB7	BB2
2813	Water-reactive solid, n.o.s.	4.3	III	4.3	B105, B106.	T7	241		IB8	BB4
2815	N-Aminoethylpiperazine.	8	III	8	T7	241	T4	TP1	IB3	
2817	Ammonium hydrogendifluoride, solution.	8	II	8, 6.1	N34, T15	243	T8	TP2 TP12 TP13	IB2	
2817	Ammonium hydrogendifluoride, solution.	8	III	8, 6.1	T8	241	T4	TP1 TP12 TP13	IB3	
2818	Ammonium polysulfide, solution.	8	II	8, 6.1	T14	243	T7	TP2 TP13	IB2	
2818	Ammonium polysulfide, solution.	8	III	8, 6.1	T7	241	T4	TP1 TP13	IB3	
2819	Amyl acid phosphate	8	III	8	T7	241	T4	TP1	IB3	
2820	Butyric acid	8	III	8	T1	241	T4	TP1	IB3	
2821	Phenol solutions	6.1	II	6.1	T14	243	T7	TP2	IB2	
2821	Phenol solutions	6.1	III	6.1	T7	241	T4	TP1	IB3	
2822	2-Chloropyridine	6.1	II	6.1	T14	243	T7	TP2	IB2	
2823	Crotonic acid, solid	8	III	8		240			IB8	BB3
2823	Crotonic acid liquid	8	III	8		241	T4	TP1	IB3	
2826	Ethyl chlorothioformate.	8	II	8, 6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP38 TP45		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2829	Caproic acid	8	III	8	T1	241	T4	TP1	IB3	
2830	Lithium ferrosilicon	4.3	II	4.3	A19, B105, B106.	241			IB7	BB2
2831	1,1,1-Trichloroethane	6.1	III	6.1	N36, T7	241	T4	TP1	IB3	
2834	Phosphorous acid	8	III	8	T7	240	T3	TP1	IB8	BB3
2835	Sodium aluminum hydride.	4.3	II	4.3	A8, A19, A20, B100.	242			IB1	
2837	Bisulfate, aqueous solution.	8	II	8	A7, B2, N34, T8, T26.	242	T7	TP2	IB2	
2837	Bisulfate, aqueous solution.	8	III	8	A7, N34, T7, T26.	241	T4	TP1	IB3	
2838	Vinyl butyrate, inhibited.	3	II	3	T7	242	T4	TP1	IB2	
2839	Aldol	6.1	II	6.1	T8	243	T7	TP2	IB2	
2840	Butyraldoxime	3	III	3	B1, T1	242	T2	TP1	IB3	
2841	Di-n-amylamine	3	III	3, 6.1	B1, T8	242	T4	TP1	IB3	
2842	Nitroethane	3	III	3	B1, T8	242	T2	TP1	IB3	
2844	Calcium manganese silicon.	4.3	III	4.3	A1, A19, B105, B106.	241			IB8	BB2, BB4
2845	Pyrophoric liquids, organic, n.o.s.	4.2	I	4.2	B11, T42	244	T22	TP2 TP7 TP38 TP45		
2849	3-Chloropropanol-1	6.1	III	6.1	T8	241	T4	TP1	IB3	
2850	Propylene tetramer	3	III	3	B1, T1	242	T2	TP1	IB3	
2851	Boron trifluoride dihydrate.	8	II	8	T9, T27	240	T7	TP2	IB8	BB2, BB4
2853	Magnesium fluorosilicate.	6.1	III	6.1		240			IB8	BB3
2854	Ammonium fluorosilicate.	6.1	III	6.1		240			IB8	BB3
2855	Zinc fluorosilicate	6.1	III	6.1		240			IB8	BB3
2856	Fluorosilicates, n.o.s	6.1	III	6.1		240			IB8	BB3
2858	Zirconium, dry, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns).	4.1	III	4.1	A1	240			IB8	
2859	Ammonium metavanadate.	6.1	II	6.1		242			IB8	BB2, BB4
2861	Ammonium polyvanadate.	6.1	II	6.1		242			IB8	BB2, BB4
2862	Vanadium pentoxide, non-fused form.	6.1	III	6.1		240			IB8	BB3
2863	Sodium ammonium vanadate.	6.1	II	6.1		242			IB8	BB2, BB4
2864	Potassium metavanadate.	6.1	II	6.1		242			IB8	BB2, BB4
2865	Hydroxylamine sulfate.	8	III	8		240			IB8	BB3
2869	Titanium trichloride mixtures.	8	II	8	A7, B106, N34.	240			IB8	BB2, BB4
2869	Titanium trichloride mixtures.	8	III	8	A7, N34	240			IB8	BB3
2871	Antimony powder	6.1	III	6.1		240			IB8	BB3
2872	Dibromochloropropane.	6.1	III	6.1	T7	241	T4	TP1	IB3	
2873	Dibutylaminoethanol	6.1	III	6.1	T1	241	T4	TP1	IB3	
2874	Furfuryl alcohol	6.1	III	6.1	T2	241	T4	TP1	IB3	
2875	Hexachlorophene	6.1	III	6.1		240			IB8	BB3
2876	Resorcinol	6.1	III	6.1		240			IB8	BB3
2878	Titanium sponge granules or Titanium sponge powders.	4.1	III	4.1	A1	240			IB8	BB3
2879	Selenium oxychloride	8	I	8, 6.1	A3, A6, A7, N34, T12, T27.	243	T10	TP2 TP12 TP13		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
2880	Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 percent but not more than 10 percent water.	5.1	II	5.1		240			IB8	BB2, BB4
2881	Metal catalyst, dry	4.2	II	4.2	N34	242			IB6	BB2
2881	Metal catalyst, dry	4.2	III	4.2	N34	241			IB8	BB3
2902	Pesticides, liquid, toxic, n.o.s.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2902	Pesticides, liquid, toxic, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
2902	Pesticides, liquid, toxic, n.o.s.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
2903	Pesticides, liquid, toxic, flammable, n.o.s flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2903	Pesticides, liquid, toxic, flammable, n.o.s flashpoint not less than 23 degrees C.	6.1	II	6.1,3	T14	243	T11	TP2 TP13 TP27	IB2	
2903	Pesticides, liquid, toxic, flammable, n.o.s flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2	IB3	
2904	Chlorophenolates, liquid or Phenolates, liquid.	8	III	8		241			IB3	
2905	Chlorophenolates, solid or Phenolates, solid.	8	III	8		240			IB8	BB3
2907	Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate.	4.1	II	4.1		None			IB6	BB2
2912	Radioactive material, low specific activity, n.o.s or Radioactive material, LSA, n.o.s.	7		7		427	T5	TP4		
2913	Radioactive material, surface contaminated object, n.o.s or Radioactive material, SCO.	7		7		427	T5	TP4		
2920	Corrosive liquids, flammable, n.o.s.	8	I	8, 3	B10, T42	243	T14	TP2 TP27		
2920	Corrosive liquids, flammable, n.o.s.	8	II	8, 3	B2, T15, T26.	243	T11	TP2 TP27	IB2	
2921	Corrosive solids, flammable, n.o.s.	8	I	8, 4.1	B106	242			IB6	
2921	Corrosive solids, flammable, n.o.s.	8	II	8, 4.1		242			IB8	BB2, BB4
2922	Corrosive liquids, toxic, n.o.s.	8	I	8, 6.1	A7, B10, T18, T27.	243	T14	TP2 TP13 TP27		
2922	Corrosive liquids, toxic, n.o.s.	8	II	8, 6.1	B3, T18, T26.	243	T7	TP2	IB2	
2922	Corrosive liquids, toxic, n.o.s.	8	III	8, 6.1	T8	241	T7	TP1 TP28	IB3	
2923	Corrosive solids, toxic, n.o.s.	8	I	8, 6.1		242			IB7	
2923	Corrosive solids, toxic, n.o.s.	8	II	8, 6.1		240			IB8	
2923	Corrosive solids, toxic, n.o.s.	8	III	8, 6.1		240			IB8	BB3
2924	Flammable liquids, corrosive, n.o.s.	3	I	3, 8	T42	243	T14	TP2		
2924	Flammable liquids, corrosive, n.o.s.	3	II	3, 8	T15, T26	243	T11	TP2 TP27	IB2	



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2924	Flammable liquids, corrosive, n.o.s.	3	III	3, 8	B1, T15, T26.	242	T7	TP1 TP28	IB3	
2925	Flammable solids, corrosive, organic, n.o.s.	4.1	II	4.1, 8	A1, B106	242			IB6	BB2
2925	Flammable solids, corrosive, organic, n.o.s.	4.1	III	4.1, 8	A1, B106	242			IB6	
2926	Flammable solids, toxic, organic, n.o.s.	4.1	II	4.1, 6.1	A1, B106	242			IB6	BB2
2926	Flammable solids, toxic, organic, n.o.s.	4.1	III	4.1, 6.1	A1, B106	242			IB6	
2927	Toxic liquids, corrosive, organic, n.o.s., inhalation hazard, Packing Group I, Zone B.	6.1	I	6.1, 8	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP27 TP38 TP45		
2927	Toxic liquids, corrosive, organic, n.o.s.	6.1	I	6.1, 8	T42	243	T14	TP2 TP13 TP27		
2927	Toxic liquids, corrosive, organic, n.o.s., inhalation hazard, Packing Group I, Zone A.	6.1	I	6.1, 8	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27 TP38 TP44		
2927	Toxic liquids, corrosive, organic, n.o.s.	6.1	II	6.1, 8	T42	243	T11	TP2 TP27	IB2	
2928	Toxic solids, corrosive, organic, n.o.s.	6.1	I	6.1, 8		242			IB7	
2928	Toxic solids, corrosive, organic, n.o.s.	6.1	II	6.1, 8		242			IB6	BB2
2929	Toxic liquids, flammable, organic, n.o.s., inhalation hazard, Packing Group I, Zone B.	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP27 TP38 TP45		
2929	Toxic liquids, flammable, organic, n.o.s.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2929	Toxic liquids, flammable, organic, n.o.s., inhalation hazard, Packing Group I, Zone A.	6.1	I	6.1, 3	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27 TP38 TP44		
2929	Toxic liquids, flammable, organic, n.o.s.	6.1	II	6.1, 3	T15	243	T11	TP2 TP13 TP27	IB2	
2930	Toxic solids, flammable, organic, n.o.s.	6.1	I	6.1, 4.1	B106	242			IB6	
2930	Toxic solids, flammable, organic, n.o.s.	6.1	II	6.1, 4.1	B106	242			IB8	BB2, BB4
2931	Vanadyl sulfate	6.1	II	6.1		242			IB8	BB2, BB4
2933	Methyl 2-chloropropionate.	3	III	3	B1, T7	242	T2	TP1	IB3	
2934	Isopropyl 2-chloropropionate.	3	III	3	B1, T1	242	T2	TP1	IB3	
2935	Ethyl 2-chloropropionate.	3	III	3	B1, T1	242	T2	TP1	IB3	
2936	Thiolactic acid	6.1	II	6.1	T8	242	T7	TP2	IB8	BB2, BB4
2937	alpha-Methylbenzyl alcohol.	6.1	III	6.1	T1	241	T4	TP1	IB3	
2940	9-Phosphabicyclononanes or Cyclooctadiene phosphines.	4.2	II	4.2	A19	241			IB6	BB2
2941	Fluoroanilines	6.1	III	6.1	T8	241	T4	TP1	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
2942	2-Trifluoromethylaniline.	6.1	III	6.1		241			IB3	
2943	Tetrahydrofurfurylamine.	3	III	3	B1, T1	242	T2	TP1	IB3	
2945	N-Methylbutylamine ..	3	II	3, 8	T8	243	T7	TP1	IB2	
2946	2-Amino-5-diethylaminopentane.	6.1	III	6.1	T1	241	T4	TP1	IB3	
2947	Isopropyl chloroacetate.	3	III	3	B1, T1	242	T2	TP1	IB3	
2948	3-Trifluoromethylaniline.	6.1	II	6.1	T14	243	T7	TP2	IB2	
2949	Sodium hydrosulfide with not less than 25 percent water of crystallization.	8	II	8	A7	240	T7	TP2	IB8	BB2, BB4
2950	Magnesium granules, coated particle size not less than 149 microns.	4.3	III	4.3	A1, A19, B108.	240			IB8	BB4
2965	Boron trifluoride dimethyl etherate.	4.3	I	4.3, 8, 3	A19, T12, T26.	243	T10	TP2 TP7		
2966	Thioglycol	6.1	II	6.1	T8	243	T7	TP2	IB2	
2967	Sulfamic acid	8	III	8		240			IB8	BB3
2968	Maneb stabilized or Maneb preparations, stabilized against self-heating.	4.3	III	4.3	54, A1, A19, B108.	242			IB8	BB4
2969	Castor beans or Castor meal or Castor pomace or Castor flake.	9	II	None		240			IB8	BB2, BB4
2983	Ethylene oxide and propylene oxide mixtures, with not more than 30 percent ethylene oxide.	3	I	3, 6.1	5, A11, N4, N34, T24, T29.	243	T14	TP2 TP7 TP13		
2984	Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary).	5.1	III	5.1	17, A1, B104, T8, T37.	241	T4	TP1 TP6 TP24 TP37	IB2	BB5
2985	Chlorosilanes, flammable, corrosive, n.o.s.	3	II	3, 8	B100, T17, T26.	243	T11	TP2 TP13 TP27	IB1	
2986	Chlorosilanes, corrosive, flammable, n.o.s.	8	II	8, 3	B100, T18, T26.	243	T11	TP2 TP27	IB2	
2987	Chlorosilanes, corrosive, n.o.s.	8	II	8	B2, T14, T26.	242	T14	TP2 TP27	IB2	
2988	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	4.3	I	4.3, 3, 8	A2, T24, T26.	244	T10	TP2 TP7 TP13		
2989	Lead phosphite, dibasic.	4.1	II	4.1		240			IB8	BB2, BB4
2989	Lead phosphite, dibasic.	4.1	III	4.1		240			IB8	BB3
2991	Carbamate pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2991	Carbamate pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
2991	Carbamate pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
2992	Carbamate pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2992	Carbamate pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27		
2992	Carbamate pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
2993	Arsenical pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2993	Arsenical pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
2993	Arsenical pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	
2994	Arsenical pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2994	Arsenical pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
2994	Arsenical pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
2995	Organochlorine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2995	Organochlorine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
2995	Organochlorine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	
2996	Organochlorine pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2996	Organochlorine pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
2996	Organochlorine pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
2997	Triazine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T42	243	T14	TP2 TP13 TP27		
2997	Triazine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
2997	Triazine pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	T14	242	T7	TP2 TP28	IB3	
2998	Triazine pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
2998	Triazine pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
2998	Triazine pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3002	Phenyl urea pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP27		
3002	Phenyl urea pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T7	TP2		
3002	Phenyl urea pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T4	TP1		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3005	Thiocarbamate pesticides, liquid, flammable, toxic, flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13		
3005	Thiocarbamate pesticides, liquid, flammable, toxic, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3005	Thiocarbamate pesticides, liquid, flammable, toxic, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	T14	242	T7	TP2 TP28	IB3	
3006	Thiocarbamate pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13		
3006	Thiocarbamate pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3006	Thiocarbamate pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3009	Copper based pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
3009	Copper based pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3009	Copper based pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	
3010	Copper based pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3010	Copper based pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3010	Copper based pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3011	Mercury based pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
3011	Mercury based pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3011	Mercury based pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	T14	242	T7	TP2 TP28	IB3	
3012	Mercury based pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3012	Mercury based pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3012	Mercury based pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3013	Substituted nitrophenol pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
3013	Substituted nitrophenol pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
3013	Substituted nitrophenol pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	
3014	Substituted nitrophenol pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3014	Substituted nitrophenol pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3014	Substituted nitrophenol pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3015	Bipyridilium pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	I	6.1,	T42	243	T14	TP2 TP13 TP27		
3015	Bipyridilium pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 4	T14	243	T11	TP2 TP13 TP27	IB2	
3015	Bipyridilium pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1,	B1, T14	242	T7	TP2 TP28	IB3	
3016	Bipyridilium pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3016	Bipyridilium pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3016	Bipyridilium pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3017	Organophosphorus pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	N76, T42	243	T14	TP2 TP13 TP27		
3017	Organophosphorus pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	N76, T14	243	T11	TP2 TP13 TP27	IB2	
3017	Organophosphorus pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, N76, T14.	242	T7	TP2 TP28	IB3	
3018	Organophosphorus pesticides, liquid, toxic.	6.1	I	6.1	N76, T42	243	T14	TP2 TP13 TP27		
3018	Organophosphorus pesticides, liquid, toxic.	6.1	II	6.1	N76, T14	243	T11	TP2 TP13 TP27	IB2	
3018	Organophosphorus pesticides, liquid, toxic.	6.1	III	6.1	N76, T14	241	T7	TP2 TP28	IB3	
3019	Organotin pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	I	6.1, 3	T42	243	T14	TP2 TP13 TP27		
3019	Organotin pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3019	Organotin pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1, T14	242	T7	TP2 TP28	IB3	
3020	Organotin pesticides, liquid, toxic.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3020	Organotin pesticides, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP13 TP27	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
3020	Organotin pesticides, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3021	Pesticides, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	I	3, 6.1	B5	243	T14	TP2 TP13 TP27		
3021	Pesticides, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
3022	1,2-Butylene oxide, stabilized.	3	II	3	T8	242	T4	TP1	IB2	
3023	2-Methyl-2-heptanethiol.	6.1	I	6.1, 3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
3024	Coumarin derivative pesticides, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
3024	Coumarin derivative pesticides, liquid, flammable, toxic, flashpoint less than 23 degrees C.	3	II	3, 6.1		243	T11	TP2 TP13 TP27	IB2	
3025	Coumarin derivative pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	I	6.1, 3		243	T14	TP2 TP13 TP27		
3025	Coumarin derivative pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	II	6.1, 3		243	T11	TP2 TP13 TP27	IB2	
3025	Coumarin derivative pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C.	6.1	III	6.1, 3	B1	242	T7	TP1 TP28	IB3	
3026	Coumarin derivative pesticides, liquid, toxic.	6.1	I	6.1		243	T14	TP2 TP13 TP27		
3026	Coumarin derivative pesticides, liquid, toxic.	6.1	II	6.1		243	T11	TP2 TP27	IB2	
3026	Coumarin derivative pesticides, liquid, toxic.	6.1	III	6.1		241	T7	TP1 TP28	IB3	
3027	Coumarin derivative pesticides, solid, toxic.	6.1	I	6.1		242	T14	TP2 TP27	IB7	BB1
3027	Coumarin derivative pesticides, solid, toxic.	6.1	II	6.1		242	T11	TP2 TP27	IB8	BB2, BB4
3027	Coumarin derivative pesticides, solid, toxic.	6.1	III	6.1		240	T7	TP1 TP28	IB8	BB3
3048	Aluminum phosphide pesticides.	6.1	I	6.1	A8	242			IB7	BB1
3049	Metal alkyl halides water-reactive, n.o.s. or Metal aryl halides water-reactive, n.o.s.	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		
3050	Metal alkyl hydrides water-reactive, n.o.s. or Metal aryl hydrides water-reactive, n.o.s.	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		
3051	Aluminum alkyls	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3052	Aluminum alkyl halides.	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		
3052	Aluminum alkyl halides.	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		
3053	Magnesium alkyls	4.2	I	4.2, 4.3	B11, T28, T29, T40.	244	T21	TP2 TP7		
3054	Cyclohexyl mercaptan.	3	III	3	B1, T1	242	T2	TP1	IB3	
3055	2-(2-Aminoethoxy) ethanol.	8	III	8	T2	241	T4	TP1	IB3	
3056	n-Heptaldehyde	3	III	3	B1, T1	242	T2	TP1	IB3	
3057	Trifluoroacetyl chloride.	2.3, 8		2.3, 8	2, B7, B9, B14.	314, 315	T50	TP21		
3065	Alcoholic beverages	3	II	3	24, B1, T1	242	T4	TP1	IB2	
3065	Alcoholic beverages	3	III	3	24, B1, N11, T1.	242	T2	TP1	IB3	
3066	Paint or Paint related material.	8	II	8	B2, T14	242	T7	TP2	IB2	
3066	Paint or Paint related material.	8	III	8	B52, T7	241	T4	TP1	IB3	
3070	Ethylene oxide and dichlorodifluoromethane mixture, with not more than 12.5 percent ethylene oxide.	2.2		2.2		314, 315	T50			
3071	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	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3073	Vinylpyridines, inhibited.	6.1	II	6.1, 3, 8	B100, T8	243	T7	TP2 TP13	IB1	
3076	Aluminum alkyl hydrides.	4.2	I	4.2, 4.3	B9, B11, T28, T29, T40.	244	T21	TP2 TP7		
3077	Environmentally hazardous substances, solid, n.o.s.	9	III	9	8, B54, N20.	240			IB8	
3078	Cerium, turnings or gritty powder.	4.3	II	4.3	A1, B106, B109.	242			IB7	BB2
3079	Methacrylonitrile, inhibited.	3	I	3, 6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
3080	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	II	6.1, 3	T15	243	T11	TP2 TP13 TP27	IB2	
3082	Environmentally hazardous substances, liquid, n.o.s.	9	III	9	8, T1	241	T4	TP1 TP29	IB3	
3084	Corrosive solids, oxidizing, n.o.s.	8	II	8, 5.1	B100	242			IB6	BB2
3085	Oxidizing solid, corrosive, n.o.s.	5.1	II	5.1, 8		242			IB6	BB2
3085	Oxidizing solid, corrosive, n.o.s.	5.1	III	5.1, 8		240			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3086	Toxic solids, oxidizing, n.o.s.	6.1	II	6.1, 5.1		242			IB6	BB2
3087	Oxidizing solid, toxic, n.o.s.	5.1	II	5.1, 6.1		242			IB6	BB2
3087	Oxidizing solid, toxic, n.o.s.	5.1	III	5.1, 6.1		240			IB8	BB3
3088	Self-heating, solid, organic, n.o.s.	4.2	II	4.2	B101	241			IB6	BB2
3088	Self-heating, solid, organic, n.o.s.	4.2	III	4.2	B101	241			IB8	BB3
3089	Metal powders, flammable, n.o.s.	4.1	II	4.1		240			IB8	BB2, BB4
3089	Metal powders, flammable, n.o.s.	4.1	III	4.1		240			IB6	
3092	1-Methoxy-2-propanol	3	III	3	B1, T1	242	T2	TP1	IB3	
3093	Corrosive liquids, oxidizing, n.o.s.	8	II	8, 5.1		243			IB2	
3095	Corrosive solids, self-heating, n.o.s.	8	II	8, 4.2		242			IB6	BB2
3096	Corrosive solids, water-reactive, n.o.s.	8	II	8, 4.3	B105	242			IB6	BB2
3098	Oxidizing liquid, corrosive, n.o.s.	5.1	II	5.1, 8		243			IB1	
3098	Oxidizing liquid, corrosive, n.o.s.	5.1	III	5.1, 8		242			IB2	
3099	Oxidizing liquid, toxic, n.o.s.	5.1	II	5.1, 6.1		243			IB1	
3099	Oxidizing liquid, toxic, n.o.s.	5.1	III	5.1, 6.1		242			IB2	
3109	Organic peroxide type F, liquid.	5.2	II	5.2	225	T23			IB52	BB5
3110	Organic peroxide type F, solid.	5.2	II	5.2	T42	225	T23			
3111	Organic peroxide type F, liquid, temperature controlled.	5.2	II	5.2		225	T23		IB52	BB5
3120	Organic peroxide type F, solid, temperature controlled.	5.2	II	5.2		225	T23			
3122	Toxic liquids, oxidizing, n.o.s. Inhalation Hazard, Packing Group I, Zone B.	6.1	I	6.1, 5.1	2, B9, B14, B32, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP44		
3122	Toxic liquids, oxidizing, n.o.s. Inhalation hazard, Packing Group I, Zone A.	6.1	I	6.1, 5.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
3122	Toxic liquids, oxidizing, n.o.s.	6.1	II	6.1, 5.1		243			IB2	
3123	Toxic liquids, water-reactive, n.o.s. Inhalation hazard, packing group I, Zone A.	6.1	I	6.1, 4.3	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP38 TP44		
3123	Toxic liquids, water-reactive, n.o.s. Inhalation hazard, Packing group I, Zone B.	6.1	I	6.1, 4.3	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP44		
3123	Toxic liquids, water-reactive, n.o.s.	6.1	II	6.1, 4.3		243			IB2	
3124	Toxic solids, self-heating, n.o.s.	6.1	II	6.1, 4.2		242			IB6	BB2
3125	Toxic solids, water-reactive, n.o.s.	6.1	II	6.1, 4.3		B101	242		IB6	BB2
3126	Self-heating, solid, corrosive, organic, n.o.s.	4.2	II	4.2, 8		242			IB5	BB2



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3126	Self-heating, solid, corrosive, organic, n.o.s.	4.2	III	4.2, 8		242			IB8	BB3
3128	Self-heating, solid, toxic, organic, n.o.s.	4.2	II	4.2, 6.1		242			IB5	BB2
3128	Self-heating, solid, toxic, organic, n.o.s.	4.2	III	4.2, 6.1		242			IB8	BB3
3129	Water-reactive liquid, corrosive, n.o.s.	4.3	II	4.3, 8	B106	243			IB1	
3129	Water-reactive liquid, corrosive, n.o.s.	4.3	III	4.3, 8	B106	242			IB2	
3130	Water-reactive liquid, toxic, n.o.s.	4.3	II	4.3, 6.1	B106	243			IB1	
3130	Water-reactive liquid, toxic, n.o.s.	4.3	III	4.3, 6.1	B106	242			IB2	
3131	Water-reactive solid, corrosive, n.o.s.	4.3	II	4.3, 8	B101, B106.	242			IB6	BB2
3131	Water-reactive solid, corrosive, n.o.s.	4.3	III	4.3, 8	B105, B106.	241			IB8	BB4
3132	Water-reactive solid, flammable, n.o.s.	4.3	I	4.3, 4.1	B101, B106, N40.	242			IB4	
3132	Water-reactive solid, flammable, n.o.s.	4.3	II	4.3, 4.1	B101, B106.	242			IB4	
3132	Water-reactive solid, flammable, n.o.s.	4.3	III	4.3, 4.1	B105, B106.	241			IB6	
3134	Water-reactive solid, toxic, n.o.s.	4.3	II	4.3, 6.1	B105, B106.	242			IB5	BB2
3134	Water-reactive solid, toxic, n.o.s.	4.3	III	4.3, 6.1	B105, B106.	241			IB8	BB4
3135	Water-reactive solid, self-heating, n.o.s.	4.3	II	4.3, 4.2	B101, B106.	242			IB5	BB2
3135	Water-reactive solid, self-heating, n.o.s.	4.3	III	4.3, 4.2	B101, B106.	241			IB8	BB4
3136	Trifluoromethane, refrigerated liquid.	2.2		2.2		314, 315	T75			
3138	Ethylene, acetylene and propylene 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		2.1		314, 315	T75			
3139	Oxidizing liquid, n.o.s.	5.1	II	5.1	127, A2	242			IB2	
3139	Oxidizing liquid, n.o.s.	5.1	III	5.1	127, A2	241			IB2	
3140	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	6.1	I	6.1	A4, T42	243	T14	TP2 TP27		
3140	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3140	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3141	Atimony compounds, inorganic, liquid, n.o.s.	6.1	III	6.1	35, T7	241	T7	TP1 TP28	IB3	
3142	Disinfectants, liquid, toxic, n.o.s.	6.1	I	6.1	A4, T42	243	T14	TP2 TP27		
3142	Disinfectants, liquid, toxic, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3142	Disinfectants, liquid, toxic, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3143	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	I	6.1	A5	242	T14	TP2 TP27	IB7	BB1
3143	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
3143	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	III	6.1	240				IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3144	Nicotine compounds, liquid, n.o.s. or Nicotine preparations, liquid, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3144	Nicotine compounds, liquid, n.o.s. or Nicotine preparations, liquid, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3145	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	I	8	T8	243	T14	TP2		
3145	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	II	8	T8	242	T11	TP2 TP27	IB2	
3145	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	III	8	T7	241	T7	TP1 TP28	IB3	
3146	Organotin compounds, solid, n.o.s.	6.1	I	6.1	A5	242			IB7	BB1
3146	Organotin compounds, solid, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
3146	Organotin compounds, solid, n.o.s.	6.1	III	6.1		240			IB8	BB3
3147	Dyes, solid, corrosive, n.o.s. or Dye intermediates corrosive, n.o.s. solid.	8	I	8		242			IB7	BB1
3147	Dyes, solid, corrosive, n.o.s. or Dye intermediates, solid, corrosive, n.o.s.	8	II	8	240				IB8	BB2, BB4
3147	Dyes, solid, corrosive, n.o.s. or Dye intermediates, solid, corrosive, n.o.s.	8	III	8		240			IB8	BB3
3148	Water-reactive liquid, n.o.s.	4.3	II	4.3	B106	243			IB1	
3148	Water-reactive liquid, n.o.s.	4.3	III	4.3	B106	242			IB2	
3149	Hydrogen peroxide and peroxyacetic acid mixtures, stabilized with acids, water and not more than 5 percent peroxyacetic acid.	5.1	II	5.1, 8	A2, A3, A6, B53, B104, B110, T14.	243	T7	TP2 TP6 TP24	IB2	BB5
3151	Polyhalogenated biphenyls, liquid or Polyhalogenated terphenyls liquid.	9	II	9		241			IB3	
3152	Polyhalogenated biphenyls, solid or Polyhalogenated terphenyls, solid.	9	II	9		241			IB8	BB2, BB4
3153	Perfluoro(methyl vinyl ether).	2.1		2.1		314, 315	T50			
3155	Pentachlorophenol	6.1	II	6.1		242			IB8	BB2, BB4
3158	Gas, refrigerated liquid, n.o.s. (cryogenic liquid).	2.2		2.2		318	T75			
3159	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a.	2.2		2.2		314, 315	T50			
3161	Liquefied gas, flammable, n.o.s.	2.1		2.1		314, 315	T50			
3163	Liquefied gas, n.o.s.	2.2		2.2		314, 315	T50			
3170	Aluminum smelting by-products or Aluminum remelting by-products.	4.3	II	4.3	128, B106, B115.	242			IB7	BB2

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3170	Aluminum smelting by-products or Aluminum remelting by-products.	4.3	III	4.3	128, B106, B115.	241			IB8	BB4
3174	Titanium disulphide ..	4.2	III	4.2		241			IB8	BB3
3175	Solids containing flammable liquid, n.o.s.	4.1	II	4.1	47	240			IB6	BB2
3176	Flammable solid, organic, molten, n.o.s.	4.1	II	4.1	T9	240	T3	TP3 TP26	IB1	
3176	Flammable solid, organic, molten, n.o.s.	4.1	III	4.1	T9	240	T1	TP3 TP26	IB1	
3178	Flammable solid, inorganic, n.o.s.	4.1	II	4.1	A1	240			IB8	BB2, BB4
3178	Flammable solid, inorganic, n.o.s.	4.1	III	4.1	A1	240			IB8	BB3
3179	Flammable solid, toxic, inorganic, n.o.s.	4.1	II	4.1, 6.1	A1, B106	242			IB6	BB2
3179	Flammable solid, toxic, inorganic, n.o.s.	4.1	III	4.1, 6.1	A1, B106	242			IB6	
3180	Flammable solid, corrosive, inorganic, n.o.s.	4.1	II	4.1, 8	A1, B106	242			IB6	BB2
3180	Flammable solid, corrosive, inorganic, n.o.s.	4.1	III	4.1, 8	A1, B106	242			IB6	
3181	Metal salts of organic compounds, flammable, n.o.s.	4.1	II	4.1	A1	240			IB8	BB2, BB4
3181	Metal salts of organic compounds, flammable, n.o.s.	4.1	III	4.1	A1	240			IB8	BB3
3182	Metal hydrides, flammable, n.o.s.	4.1	II	4.1	A1	240			IB4	
3182	Metal hydrides, flammable, n.o.s.	4.1	III	4.1	A1	240			IB4	
3183	Self-heating liquid, organic, n.o.s.	4.2	II	4.2		242			IB2	
3183	Self-heating liquid, organic, n.o.s.	4.2	III	4.2		241			IB2	
3184	Self-heating liquid, toxic, organic, n.o.s.	4.2	II	4.2, 6.1		243			IB2	
3184	Self-heating liquid, toxic, organic, n.o.s.	4.2	III	4.2, 6.1		241			IB2	
3185	Self-heating liquid, corrosive, organic, n.o.s.	4.2	II	4.2, 8		243			IB2	
3185	Self-heating liquid, corrosive, organic, n.o.s.	4.2	III	4.2, 8		241			IB2	
3186	Self-heating liquid, inorganic, n.o.s.	4.2	II	4.2		242			IB2	
3186	Self-heating liquid, inorganic, n.o.s.	4.2	III	4.2		241			IB2	
3187	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	II	4.2, 6.1		243			IB2	
3187	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	III	4.2, 6.1		241			IB2	
3188	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	II	4.2, 8		243			IB2	
3188	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	III	4.2, 8		241			IB2	
3189	Metal powder, self-heating, n.o.s.	4.2	II	4.2		241			IB6	BB2
3189	Metal powder, self-heating, n.o.s.	4.2	III	4.2		241			IB8	BB3
3190	Self-heating solid, inorganic, n.o.s.	4.2	II	4.2		241			IB6	BB2
3190	Self-heating solid, inorganic, n.o.s.	4.2	III	4.2		241			IB8	BB3
3191	Self-heating solid, toxic, inorganic, n.o.s.	4.2	II	4.2, 6.1		242			IB5	BB2

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3191	Self-heating solid, toxic, inorganic, n.o.s.	4.2	III	4.2, 6.1		242			IB8	BB3
3192	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	II	4.2, 8		242			IB5	BB2
3192	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	III	4.2, 8		242			IB8	BB3
3203	Pyrophoric organometallic compound, water-reactive, n.o.s.	4.2	I	4.2, 4.3	T28, T40	242	T21	TP2 TP7		
3203	Pyrophoric organometallic compound, water-reactive, n.o.s.	4.2	I	4.2, 4.3	T28, T40	242	T21	TP2 TP7		
3205	Alkaline earth metal alcoholates, n.o.s.	4.2	II	4.2	65	241			IB6	BB2
3205	Alkaline earth metal alcoholates, n.o.s.	4.2	III	4.2	65	241			IB8	BB3
3206	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	II	4.2, 8	64	242			IB5	BB2
3206	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	III	4.2, 8	64	242			IB8	BB3
3207	Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.	4.3	I	4.3, 3	T28	244	T13	TP2 TP7		
3207	Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.	4.3	II	4.3, 3	T28	243	T7	TP2 TP7	IB1	BB2
3207	Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.	4.3	III	4.3, 3	T28, B101, B106.	242	T7	TP2 TP7	IB2	BB4
3208	Metallic substance, water-reactive, n.o.s.	4.3	I	4.3	B101, B106.	242			IB4	
3208	Metallic substance, water-reactive, n.o.s.	4.3	II	4.3	B101, B106.	242			IB7	BB2
3208	Metallic substance, water-reactive, n.o.s.	4.3	III	4.3	B105, B108.	241			IB8	BB4
3209	Metallic substance, water-reactive, self-heating, n.o.s.	4.3	II	4.3, 4.2	B101, B106.	242			IB5	BB2
3209	Metallic substance, water-reactive, self-heating, n.o.s.	4.3	III	4.3, 4.2	B101, B106.	242			IB8	BB4
3210	Chlorates, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	T8	242	T4	TP1	IB2	
3211	Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	T8	242	T4	TP1	IB2	
3211	Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	T8	241	T4	TP1	IB2	
3212	Hypochlorites, inorganic, n.o.s.	5.1	II	5.1		240			IB8	BB2, BB4
3213	Bromates, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	T8	242	T4	TP1	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3214	Permanganates, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	26, T8	242	T4	TP1	IB2	
3215	Persulfates, inorganic, n.o.s.	5.1	III	5.1		240			IB8	BB3
3216	Persulfates, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	T2	241	T4	TP1 TP29	IB2	
3218	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	58, T8	242	T4	TP1	IB2	
3218	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	58, T8	241	T4	TP1	IB2	
3219	Nitrites, inorganic, aqueous solution, n.o.s.	5.1	II	5.1	T8	242	T4	TP1	IB1	
3219	Nitrites, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	T8	241	T4	TP1	IB2	
3220	Pentafluoroethane or Refrigerant gas R 125.	2.2		2.2		314, 315	T50			
3241	2-Bromo-2-nitropropane-1,3-diol.	4.1	III	4.1	46	None			IB8	BB3
3242	Azodicarbonamide	4.1	II	4.1	38	240			IB8	
3243	Solids containing toxic liquid, n.o.s.	6.1	II	6.1	48	240			IB2	
3244	Solids containing corrosive liquid, n.o.s.	8	II	8	49	240			IB5	
3246	Methanesulfonyl chloride.	6.1	I	6.1, 8	2, 25, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP12 TP13 TP38 TP45		
3247	Sodium peroxoborate, anhydrous.	5.1	II	5.1		240			IB8	BB4
3248	Medicine, liquid, flammable, toxic, n.o.s.	3	II	3, 6.1	36	None			IB2	
3248	Medicine, liquid, flammable, toxic, n.o.s.	3	III	3, 6.1	36	None			IB3	
3250	Chloroacetic acid, molten.	6.1	II	6.1, 8	T9	243	T7	TP3	IB1	
3251	Isosorbide-5-mononitrate.	4.1	III	4.1	66	240			IB8	
3252	Diffluoromethane or Refrigerant gas R 32.	2.1		2.1		314, 315	T50			
3253	Disodium trioxosilicate.	8	III	8		240			IB8	BB3
3256	Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point.	3	III	3	T1	247	T3	TP3 TP29	IB1	
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.).	9	III	9	T1	247	T3	TP3 TP29	IB1	
3259	Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	I	8		242			IB7	BB1
3259	Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	II	8		240			IB8	BB2, BB4
3259	Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	III	8		240			IB8	BB3

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3260	Corrosive solid, acidic, inorganic, n.o.s.	8	I	8		242			IB7	BB1
3260	Corrosive solid, acidic, inorganic, n.o.s.	8	II	8		240			IB8	BB2, BB4
3260	Corrosive solid, acidic, inorganic, n.o.s.	8	III	8		240			IB8	BB3
3261	Corrosive solid, acidic, organic, n.o.s.	8	I	8		242			IB7	BB1
3261	Corrosive solid, acidic, organic, n.o.s.	8	II	8		240			IB8	BB2, BB4
3261	Corrosive solid, acidic, organic, n.o.s.	8	III	8		240			IB8	BB3
3262	Corrosive solid, basic, inorganic, n.o.s.	8	I	8		242			IB7	BB1
3262	Corrosive solid, basic, inorganic, n.o.s.	8	II	8		240			IB8	BB2, BB4
3262	Corrosive solid, basic, inorganic, n.o.s.	8	III	8		240			IB8	BB3
3263	Corrosive solid, basic, organic, n.o.s.	8	I	8		242			IB7	BB1
3263	Corrosive solid, basic, organic, n.o.s.	8	II	8		240			IB8	BB2, BB4
3263	Corrosive solid, basic, organic, n.o.s.	8	III	8		240			IB8	BB3
3264	Corrosive liquid, acidic, inorganic, n.o.s.	8	I	8	B10	243	T14	TP2 TP27		
3264	Corrosive liquid, acidic, inorganic, n.o.s.	8	II	8	B2, T14	242	T11	TP2 TP27	IB2	
3264	Corrosive liquid, acidic, inorganic, n.o.s.	8	III	8	T7	241	T7	TP1 TP28	IB3	
3265	Corrosive liquid, acidic, organic, n.o.s.	8	I	8	B10	243	T14	TP2 TP27		
3265	Corrosive liquid, acidic, organic, n.o.s.	8	II	8	B2, T14	242	T11	TP2 TP27	IB2	
3265	Corrosive liquid, acidic, organic, n.o.s.	8	III	8	T7	241	T7	TP1 TP28	IB3	
3266	Corrosive liquid, basic, inorganic, n.o.s.	8	I	8	B10	243	T14	TP2 TP27		
3266	Corrosive liquid, basic, inorganic, n.o.s.	8	II	8	B2, T14	242	T11	TP2 TP27	IB2	
3266	Corrosive liquid, basic, inorganic, n.o.s.	8	III	8	T7	241	T7	TP1 TP28	IB3	
3267	Corrosive liquid, basic, organic, n.o.s.	8	I	8	B10	243	T14	TP2 TP27		
3267	Corrosive liquid, basic, organic, n.o.s.	8	II	8	B2, T14	242	T11	TP2 TP27	IB2	
3267	Corrosive liquid, basic, organic, n.o.s.	8	III	8	T7	241	T7	TP1 TP28	IB3	
3271	Ethers, n.o.s.	3	II	3	T8	242	T7	TP1 TP8 TP28	IB2	
3271	Ethers, n.o.s.	3	III	3	B1, T7	242	T4	TP1 TP29	IB3	
3272	Esters, n.o.s.	3	II	3	T8	242	T7	TP1 TP8 TP28	IB2	
3272	Esters, n.o.s.	3	III	3	B1, T7	242	T4	TP1 TP29	IB3	
3273	Nitriles, flammable, toxic, n.o.s.	3	I	3, 6.1		243	T14	TP2 TP13 TP27		
3273	Nitriles, flammable, toxic, n.o.s.	3	II	3, 6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3274	Alcoholates solution, n.o.s., in alcohol.	3	II	3, 8		243			IB2	
3275	Nitriles, toxic, flammable, n.o.s.	6.1	I	6.1, 3	5	243	T14	TP2 TP13 TP27		
3275	Nitriles, toxic, flammable, n.o.s.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3276	Nitriles, toxic, n.o.s.	6.1	I	6.1	5	243	T14	TP2 TP13 TP27		
3276	Nitriles, toxic, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
3276	Nitriles, toxic, n.o.s ...	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3277	Chloroformates, toxic, corrosive, n.o.s.	6.1	II	6.1, 8	T12, T26	243	T8	TP2 TP13 TP28	IB2	
3278	Organophosphorus compound, toxic n.o.s.	6.1	I	6.1	5	243	T14	TP2 TP13 TP27	IB7	
3278	Organophosphorus compound, toxic n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3278	Organophosphorus compound, toxic n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3279	Organophosphorus compound, toxic, flammable, n.o.s.	6.1	I	6.1, 3	5	243	T14	TP2 TP13		
3279	Organophosphorus compound, toxic, flammable, n.o.s.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3280	Organoarsenic compound, n.o.s.	6.1	I	6.1	5	242	T14	TP2 TP27	IB7	BB1
3280	Organoarsenic compound, n.o.s.	6.1	II	6.1	T14	242	T11	TP2 TP27	IB8	BB2, BB4
3280	Organoarsenic compound, n.o.s.	6.1	III	6.1	T7	240	T7	TP1 TP28	IB8	BB3
3281	Metal carbonyls, n.o.s.	6.1	I	6.1	5	243	T14	TP2 TP13 TP27		
3281	Metal carbonyls, n.o.s.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3281	Metal carbonyls, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3282	Organometallic compound, toxic n.o.s.	6.1	I	6.1	B106	242	T14	TP2 TP27	IB7	BB1
3282	Organometallic compound, toxic n.o.s.	6.1	II	6.1	T14	242	T11	TP2 TP27	IB8	BB2, BB4
3282	Organometallic compound, toxic n.o.s.	6.1	III	6.1	T7	240	T7	TP1 TP28	IB8	BB3
3283	Selenium compound, n.o.s.	6.1	I	6.1		242	T14	TP2 TP27	IB7	BB1
3283	Selenium compound, n.o.s.	6.1	II	6.1	T14	242	T11	TP2 TP27	IB8	BB2, BB4
3283	Selenium compound, n.o.s.	6.1	III	6.1	T7	240	T7	TP1 TP28	IB8	BB3
3284	Tellurium compound, n.o.s.	6.1	I	6.1		242	T14	TP2 TP27	IB7	BB1
3284	Tellurium compound, n.o.s.	6.1	II	6.1	T14	242	T11	TP2 TP27	IB8	BB2, BB4
3284	Tellurium compound, n.o.s.	6.1	III	6.1	T7	240	T7	TP1 TP28	IB8	BB3
3285	Vanadium compound, n.o.s.	6.1	I	6.1	242	T14	TP2 TP27	IB7	BB1	
3285	Vanadium compound, n.o.s.	6.1	II	6.1	T14	242	T11	TP2 TP27	IB8	BB2, BB4
3285	Vanadium compound, n.o.s.	6.1	III	6.1	T7	240	T7	TP1 TP28	IB8	BB3
3286	Flammable liquid, toxic, corrosive, n.o.s.	3	I	3, 6.1, 8		243	T14	TP2 TP13 TP27		
3286	Flammable liquid, toxic, corrosive, n.o.s.	3	II	3, 6.1, 8	T14	243	T11	TP2 TP13 TP27	IB2	
3287	Toxic liquid, inorganic, n.o.s.	6.1	I	6.1	T42	243	T14	TP2 TP13 TP27		
3287	Toxic liquid, inorganic, n.o.s Inhalation Hazard, Packing Group I, Zone A.	6.1	I	6.1	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27 T38 T44		
3287	Toxic liquid, inorganic, n.o.s Inhalation Hazard, Packing Group I, Zone B.	6.1	I	6.1	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP27 T38, T45		
3287	Toxic liquid, inorganic, n.o.s.	6.1	II	6.1	B110, T14	243	T11	TP2 TP27	IB2	

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3287	Toxic liquid, inorganic, n.o.s.	6.1	III	6.1	T7	241	T7	TP1 TP28	IB3	
3288	Toxic solid, inorganic, n.o.s.	6.1	I	6.1		242			IB7	
3288	Toxic solid, inorganic, n.o.s.	6.1	II	6.1		242			IB8	BB2, BB4
3288	Toxic solid, inorganic, n.o.s.	6.1	III	6.1		240			IB8	BB3
3289	Toxic liquid, corrosive, inorganic, n.o.s.	6.1	I	6.1, 8	T42	243	T14	TP2 TP13 TP27		
3289	Toxic liquid, corrosive, inorganic, n.o.s Inhalation Hazard, Packing Group I, Zone B.	6.1	I	6.1, 8	2, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP27 TP38 TP45		
3289	Toxic liquid, corrosive, inorganic, n.o.s inhalation Hazard, Packing Group I, Zone A.	6.1	I	6.1, 8	1, B9, B14, B30, B72, T38, T43, T44.	244	T22	TP2 TP13 TP27 TP38 TP44		
3289	Toxic liquid, corrosive, inorganic, n.o.s.	6.1	II	6.1, 8	T14	243	T11	TP2 TP27	IB2	
3290	Toxic solid, corrosive, inorganic, n.o.s.	6.1	I	6.1, 8		242			IB7	
3290	Toxic solid, corrosive, inorganic, n.o.s.	6.1	II	6.1, 8		242			IB6	BB2
3293	Hydrazine, aqueous solution with not more than 37 percent hydrazine, by mass.	6.1	III	6.1	T7	241	T4	TP1	IB3	
3294	Hydrogen cyanide, solution in alcohol with not more than 45 percent hydrogen cyanide.	6.1	I	6.1, 3	2, 25, B9, B14, B32, B74, T38, T43, T45.	244	T20	TP2 TP13 TP38 TP45		
3295	Hydrocarbons, liquid, n.o.s.	3	I	3	T8, T31	243	T11	TP1 TP8		
3295	Hydrocarbons, liquid, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
3295	Hydrocarbons, liquid, n.o.s.	3	III	3	B1, T7, T30.	242	T4	TP1 TP29	IB3	
3296	Heptafluoropropane or Refrigerant gas R 227.	2.2		2.2		314, 315	T50			
3297	Ethylene oxide and chlorotetrafluoroethane mixture with not more than 8.8 percent.	2.2		2.2		314, 315	T50			
3298	Ethylene oxide and pentafluoroethane mixture with not more than 7.9 percent ethylene oxide.	2.2		2.2		314, 315	T50			
3299	Ethylene oxide and tetrafluoroethane mixture with not more than 5.6 percent ethylene oxide.	2.2		2.2		314, 315	T50			
3301	Corrosive liquid, self-heating, n.o.s.	8	II	8, 4.2	B2	242			IB1	
3302	2-Dimethylaminoethyl acrylate.	6.1	II	6.1	T8	243	T7	TP2	IB2	
3311	Gas, refrigerated liquid, flammable, n.o.s (cryogenic liquid).	2.2		2.2, 5.1		318	T75			



TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port. Tank special provisions	IBC code	IBC special provisions
3312	Gas, refrigerated liquid, flammable, n.o.s (cryogenic liquid).	2.1		2.1		318	T75			
3313	Organic pigments, self-heating.	4.2	II	4.2		241			IB8	BB4
3313	Organic pigments, self-heating.	4.2	III	4.2	B101	241			IB8	BB3
3314	Plastic molding compound in dough, sheet or extruded rope form evolving flammable vapor.	9	III	9	32	221			IB8	BB6
3318	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.2		2.2	13	314, 315	T50			
3318	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.3		2.3, 8	4	314, 315	T50			
3320	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	II	8	B2, N34, T8.	242	T7	TP2	IB2	
3320	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	III	8	B2, N34, T7.	241	T4	TP2	IB3	
3336	Mercaptans, liquid, flammable, n.o.s., or Mercaptan mixture, liquid, flammable, n.o.s.	3	I	3	T23	243	T11	TP2		
3336	Mercaptans, liquid, flammable, n.o.s., or Mercaptan mixture, liquid, flammable, n.o.s.	3	II	3	T8, T31	242	T7	TP1 TP8 TP28	IB2	
3336	Mercaptans, liquid, flammable, n.o.s., or Mercaptan mixture, liquid, flammable, n.o.s.	3	III	3	B1, B52, T7, T30.	241	T4	TP1 TP29	IB3	
3337	Refrigerant gas R 404A.	2.2				314, 315	T50			
3338	Refrigerant gas R 407A.	2.2				314, 315	T50			
3339	Refrigerant gas R 407B.	2.2				314, 315	T50			
3340	Refrigerant gas R 407C.	2.2				314, 315	T50			
3341	Thiourea dioxide	4.2	II	4.2		241			IB6	BB2
3341	Thiourea dioxide	4.2	III	4.2		241			IB8	BB3
3342	Xanthates	4.2	II	4.2		241			IB6	BB2
3342	Xanthates	4.2	III	4.2		241			IB8	BB3
3345	Phenoxyacetic acid derivative pesticide, solid, toxic.	6.1	I	6.1		242			IB7	BB1
3345	Phenoxyacetic acid derivative pesticide, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4

TABLE SHOWING PROPOSED PORTABLE TANK AND IBC AUTHORIZATIONS—Continued

UN No.	Name/Description	Class	PG	Label(s)	Special provisions	Bulk section 173.xxx	Portable tank instruction	Port.Tank special provisions	IBC code	IBC special provisions
3345	Phenoxyacetic acid derivative pesticide, solid, toxic.	6.1	III	6.1		240			IB8	BB3
3346	Phenoxyacetic acid derivative pesticide, liquid flammable, toxic flashpoint less than 23° C.	3	I	3, 6.1	T23	243	T14	TP2 TP13 TP27		
3346	Phenoxyacetic acid derivative pesticide, liquid flammable, toxic flashpoint less than 23° C.	3	II	3, 6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3347	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flashpoint not less than 23° C.	6.1	I	6.1, 3	T24, T26	243	T14	TP2 TP13 TP27		
3347	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flashpoint not less than 23° C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3347	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flashpoint not less than 23° C.	6.1	III	6.1, 3	T14	241	T7	TP2 TP28	IB3	
3348	Phenoxyacetic acid derivative pesticide, liquid, toxic.	6.1	I	6.1	T24, T26	243	T14	TP2 TP13 TP27		
3348	Phenoxyacetic acid derivative pesticide, liquid, toxic.	6.1	II	6.1	T14	243	T11	TP2 TP27	IB2	
3348	Phenoxyacetic acid derivative pesticide, liquid, toxic.	6.1	III	6.1	T14	241	T7	TP2 TP28	IB3	
3349	Pyrethroid pesticide, solid, toxic.	6.1	I	6.1		242			IB7	BB1
3349	Pyrethroid pesticide, solid, toxic.	6.1	II	6.1		242			IB8	BB2, BB4
3349	Pyrethroid pesticide, solid, toxic.	6.1	III	6.1		230			IB8	BB3
3350	Pyrethroid pesticide, liquid, flammable, toxic, flashpoint less than 23° C.	3	I	3, 6.1	T24, T26	243	T14	TP2 TP13 TP27		
3350	Pyrethroid pesticide, liquid, flammable, toxic, flashpoint less than 23° C.	3	II	3, 6.1	T14	243	T11	TP2 TP13 TP27	IB2	
3351	Pyrethroid pesticide, liquid, flammable, toxic, flashpoint not less than 23° C.	6.1	I	6.1, 3	T24, T26	243	T14	TP2 TP13 TP27		
3351	Pyrethroid pesticide, liquid, flammable, toxic, flashpoint not less than 23° C.	6.1	II	6.1, 3	T14	243	T11	TP2 TP13 TP27	IB2	
3351	Pyrethroid pesticide, liquid, flammable, toxic, flashpoint not less than 23° C.	6.1	III	6.1, 3	T14	241	T7	TP2 TP28	IB3	
3352	Pyrethroid pesticide, liquid toxic.	6.1	I	6.1		242	T14	TP2 TP13 TP27		
3352	Pyrethroid pesticide, liquid toxic.	6.1	II	6.1		242	T11	TP2 TP27	IB2	
3352	Pyrethroid pesticide, liquid toxic.	6.1	III	6.1		240	T7	TP2 TP28	IB3	

f. In Columns (9A) and (9B), the following entries would be revised as follows:

Note to readers: \*\*\* means no change to current limit.

Column (2)	Column (4)	Column (5)	Column (9A) Revise to read:	Column (9B) Revise to read:
Acetone cyanohydrin, stabilized .....	UN1541	I	***	Forbidden.
Boron tribromide .....	UN2692	I	***	Forbidden.
n-Butyl chloroformate .....	UN2743	I	Forbidden .....	Forbidden.
n-Butyl isocyanate .....	UN2485	I	***	Forbidden.
Bisulfites, aqueous solutions, n.o.s .....	UN2693	III	5 L .....	60 L.
Cells, containing sodium .....	UN3292	II	25 kg gross .....	
Chloroacetonitrile .....	UN2668	II	***	Forbidden.
Chloroform .....	UN1888	III	60 L .....	220 L.
Crotonaldehyde, stabilized .....	UN1143	I		Forbidden.
Diethyl sulfide .....	UN2375	II	5 L.	
Divinyl ether, inhibited .....	UN1167	I		30 L.
Lithium battery .....	UN3090	II	5 kg gross .....	***
Methacrylonitrile, inhibited .....	UN3079	I	***	Forbidden.
Methyl bromide and ethylene dibromide mixtures, liquid .....	UN1647	I	***	Forbidden.
Methyl orthosilicate .....	UN2606	I	***	Forbidden.
Nitrogen trifluoride, compressed .....	UN2451		75 kg .....	150 kg.
Nitrous oxide, refrigerated liquid .....	UN2201		Forbidden .....	Forbidden.
Nitromethane .....	UN1261	II	***	Forbidden.
Phosphorus oxychloride .....	UN1810	II	***	Forbidden.
n-Propyl chloroformate .....	UN2740	I	***	Forbidden.
Sulfur trioxide, inhibited or Sulfur trioxide, stabilized .....	UN1829	I	***	Forbidden.
Tear gas substances, solid, n.o.s. ....	UN1693	I	***	15 kg.
Titanium tetrachloride .....	UN1838	II	***	Forbidden.
Thiophosgene .....	UN2474	II	***	Forbidden.

g. In Columns (10A) and (10B), the following entries would be revised as follows:

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Ammonium nitrate-fuel oil mixture containing only prilled ammonium nitrate and fuel oil .....	NA0331	10	19E
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.	UN0222	10	19E
Ammonium perchlorate .....	UN0402	10	19E
Ammonium picrate, dry or wetted with less than 10 percent water, by mass .....	UN0004	10	5E, 19E
Ammunition, illuminating with or without burster, expelling charge or propelling charge .....	UN0171	03	
Ammunition, illuminating with or without burster, expelling charge or propelling charge .....	UN0254	03	
Ammunition, illuminating with or without burster, expelling charge or propelling charge .....	UN0297	02	
Ammunition, incendiary liquid or gel, with burster, expelling charge or propelling charge .....	UN0247	04	23E
Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge.	UN0243	08	8E, 14E, 15E, 17E
Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge.	UN0244	08	8E, 14E, 15E, 17E
Ammunition, incendiary with or without burster, expelling charge or propelling charge .....	UN0009	03	
Ammunition, incendiary with or without burster, expelling charge, or propelling charge .....	UN0010	03	
Ammunition, incendiary with or without burster, expelling charge, or propelling charge .....	UN0300	02	
Ammunition, practice .....	UN0362	02	
Ammunition, practice .....	UN0488	03	
Ammunition, proof .....	UN0363	02	
Ammunition, smoke, white phosphorus with burster, expelling charge, or propelling charge	UN0245	08	8E, 14E, 15E, 17E
Ammunition, smoke, white phosphorus with burster, expelling charge, or propelling charge	UN0246	08	8E, 14E, 15E, 17E
Ammunition, smoke with or without burster, expelling charge or propelling charge .....	UN0015		8E, 17E, 20E
Ammunition, smoke with or without burster, expelling charge or propelling charge .....	UN0016		8E, 17E, 20E
Ammunition, smoke with or without burster, expelling charge or propelling charge .....	UN0303		7E, 8E, 14E, 15E, 17E
Ammunition, tear-producing with burster, expelling charge or propelling charge .....	UN0018		8E, 17E, 20E
Ammunition, tear-producing with burster, expelling charge or propelling charge .....	UN0019		8E, 17E, 20E
Ammunition, tear-producing with burster, expelling charge or propelling charge .....	UN0301		7E, 8E, 14E, 15E, 17E
Ammunition, toxic with burster, expelling charge, or propelling charge .....	UN0020	08	8E, 14E, 15E, 17E
Ammunition, toxic with burster, expelling charge, or propelling charge .....	UN0021	08	8E, 14E, 15E, 17E
Articles, explosive, extremely insensitive or Articles, EEI .....	UN0486	07	
Articles, explosive, n.o.s .....	UN0349	05	
Articles, explosive, n.o.s .....	UN0350	06	

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Articles, explosive, n.o.s .....	UN0351	06	
Articles, explosive, n.o.s .....	UN0352	06	
Articles, explosive, n.o.s .....	UN0353	06	
Articles, explosive, n.o.s .....	UN0354	08	8E, 14E, 15E, 17E
Articles, explosive, n.o.s .....	UN0355	08	8E, 14E, 15E, 17E
Articles, explosive, n.o.s .....	UN0356	08	8E, 14E, 15E, 17E
Articles, explosive, n.o.s .....	UN0462	07	
Articles, explosive, n.o.s .....	UN0463	07	
Articles, explosive, n.o.s .....	UN0464	07	
Articles, explosive, n.o.s .....	UN0465	08	
Articles, explosive, n.o.s .....	UN0466	07	
Articles, explosive, n.o.s .....	UN0467	07	
Articles, explosive, n.o.s .....	UN0468	07	
Articles, explosive, n.o.s .....	UN0469	08	
Articles, explosive, n.o.s .....	UN0470	07	
Articles, explosive, n.o.s .....	UN0471	06	
Articles, explosive, n.o.s .....	UN0472	08	
Articles, pyrophoric .....	UN0380	08	8E, 14E, 15E, 17E
Articles, pyrotechnic for technical purposes .....	UN0428	07	
Articles, pyrotechnic for technical purposes .....	UN0429	07	
Articles, pyrotechnic for technical purposes .....	UN0430	07	
Articles, pyrotechnic for technical purposes .....	UN0431	06	
Articles, pyrotechnic for technical purposes .....	UN0432	05	
Barium azide, dry or wetted with less than 50 percent water, by mass. ....	UN0224	12	
Barium styphnate .....	NA0473		
Black powder, compressed or Gunpowder, compressed or Black powder, in pellets or Gunpowder, in pellets.	UN0028	10	
Black powder or Gunpowder, granular or as a meal .....	UN0027	10	
Bombs, photo-flash .....	UN0037	08	
Bombs, photo-flash .....	UN0038	03	
Bombs, photo-flash .....	UN0039	03	
Bombs, photo-flash .....	UN0299	03	
Bombs, with bursting charge .....	UN0033	08	
Bombs, with bursting charge .....	UN0034	03	
Bombs, with bursting charge .....	UN0035	03	
Bombs, with bursting charge .....	UN0291	08	
Bombs with flammable liquid, with bursting charge .....	UN0399	04	23E
Bombs with flammable liquid, with bursting charge .....	UN0400	04	23E
Boosters with detonator .....	UN0225	11	
Boosters with detonator .....	UN0268	07	
Boosters, without detonator .....	UN0042	07	
Boosters, without detonator .....	UN0283	07	
Bursters, explosive .....	UN0043	07	
Cartridges, flash .....	UN0049	07	
Cartridges, flash .....	UN0050	07	
Cartridges for weapons, blank .....	UN0326	07	
Cartridges for weapons, blank .....	UN0413	07	
Cartridges for weapons, blank or Cartridges, small arms, blank .....	UN0014	05	
Cartridges for weapons, blank or Cartridges, small arms, blank .....	UN0327	07	
Cartridges for weapons, blank or Cartridges, small arms, blank .....	UN0338	06	
Cartridges for weapons, inert projectile .....	UN0328	03	
Cartridges for weapons, inert projectile or Cartridges, small arms .....	UN0012	05	
Cartridges for weapons, inert projectile or Cartridges, small arms .....	UN0339	06	
Cartridges for weapons, inert projectile or Cartridges, small arms .....	UN0417	06	
Cartridges for weapons, with bursting charge .....	UN0005	08	
Cartridges for weapons, with bursting charge .....	UN0006	03	
Cartridges for weapons, with bursting charge .....	UN0007	08	
Cartridges for weapons, with bursting charge .....	UN0321	03	
Cartridges for weapons, with bursting charge .....	UN0348	08	
Cartridges for weapons, with bursting charge .....	UN0412	02	
Cartridges, oil well .....	UN0277	07	
Cartridges, oil well .....	UN0278	06	
Cartridges, power device .....	UN0275	07	
Cartridges, power device .....	UN0276	06	
Cartridges, power device .....	UN0323	05	
Cartridges, power device .....	UN0381	07	
Cartridges, signal .....	UN0054	07	
Cartridges, signal .....	UN0312	06	
Cartridges, signal .....	UN0405	05	
Cases, cartridge, empty with primer .....	UN0055	05	
Cases, cartridges, empty with primer .....	UN0379	06	
Cases, combustible, empty, without primer .....	UN0446	06	
Cases, combustible, empty, without primer .....	UN0447	07	

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Charges, bursting, plastics bonded .....	UN0457	07	
Charges, bursting, plastics bonded .....	UN0458	07	
Charges, bursting, plastics bonded .....	UN0459	06	
Charges, bursting, plastics bonded .....	UN0460	05	
Charges, demolition .....	UN0048	03	
Charges, depth .....	UN0056	03	
Charges, explosive, commercial <i>without detonator</i> .....	UN0442	07	
Charges, explosive, commercial <i>without detonator</i> .....	UN0443	07	
Charges, explosive, commercial <i>without detonator</i> .....	UN0444	06	
Charges, explosive, commercial <i>without detonator</i> .....	UN0445	05	
Charges, propelling .....	UN0271	07	
Charges, propelling .....	UN0272	07	
Charges, propelling .....	UN0415	07	
Charges, propelling .....	UN0491	06	
Charges, propelling, for cannon .....	UN0242	10	
Charges, propelling, for cannon .....	UN0279	10	
Charges, propelling, for cannon .....	UN0414	10	
Charges, shaped, flexible, linear .....	UN0237	06	
Charges, shaped, flexible, linear .....	UN0288	07	
Charges, shaped, <i>without detonator</i> .....	UN0059	07	
Charges, shaped, <i>without detonator</i> .....	UN0439	07	
Charges, shaped, <i>without detonator</i> .....	UN0440	06	
Charges, shaped, <i>without detonator</i> .....	UN0441	05	
Charges, supplementary explosive .....	UN0060	10	
Components, explosive train, n.o.s .....	UN0382	11	
Components, explosive train, n.o.s .....	UN0383	06	
Components, explosive train, n.o.s .....	UN0384	05	
Components, explosive train, n.o.s .....	UN0461	11	
Contrivances, water-activated, <i>with burster, expelling charge or propelling charge</i> .....	UN0248	08	8E, 14E, 15E, 17E
Contrivances, water-activated, <i>with burster, expelling charge or propelling charge</i> .....	UN0249	08	8E, 14E, 15E, 17E
Cord, detonating, <i>flexible</i> .....	UN0065	07	
Cord, detonating, <i>flexible</i> .....	UN0289	06	
Cord detonating or Fuse detonating <i>metal clad</i> .....	UN0102	07	
Cord, detonating or Fuse, detonating <i>metal clad</i> .....	UN0290	07	
Cord, detonating, mild effect or Fuse, detonating, mild effect <i>metal clad</i> .....	UN0104	06	
Cord, igniter .....	UN0066	06	
Cutters, cable, explosive .....	UN0070	05	
Cyclotetramethylenetetranitramine, desensitized or Octogen, desensitized or HMX, desensitized.	UN0484	10	
Cyclotetramethylenetetranitramine, wetted or HMX, wetted or Octogen, <i>wetted with not less than 15 percent water, by mass.</i>	UN0226	10	
Cyclotrimethylenetrinitramine, desensitized or Cyclonite, desensitized or Hexogen, desensitized or RDX, desensitized.	UN0483	10	
Cyclotrimethylenetrinitramine, wetted or Cyclonite, wetted or Hexogen, wetted or RDX, <i>wetted with not less than 15 percent water by mass.</i>	UN0072	10	
Deflagrating metal salts of aromatic nitroderivatives, n.o.s .....	UN0132	10	5E
Detonator assemblies, non-electric <i>for blasting</i> .....	UN0360	11	
Detonator assemblies, non-electric <i>for blasting</i> .....	UN0361	06	
Detonator assemblies, non-electric <i>for blasting</i> .....	UN0500	05	
Detonators, electric, <i>for blasting</i> .....	UN0030	11	
Detonators, electric, <i>for blasting</i> .....	UN0255	06	
Detonators, electric <i>for blasting</i> .....	UN0456	05	
Detonators for ammunition .....	UN0073	11	
Detonators for ammunition .....	UN0364	11	
Detonators for ammunition .....	UN0365	06	
Detonators for ammunition .....	UN0366	05	
Detonators, non-electric, <i>for blasting</i> .....	UN0029	11	
Detonators, non-electric, <i>for blasting</i> .....	UN0267	06	
Detonators, non-electric <i>for blasting</i> .....	UN0455	05	
Diazodinitrophenol, <i>wetted with not less than 40 percent water or mixture of alcohol and water, by mass.</i>	UN0074	12	
Diethyleneglycol dinitrate, desensitized <i>with not less than 25 percent non-volatile, water-insoluble phlegmatizer, by mass.</i>	UN0075	13	21E
Dinitroglycoluril or Dingu .....	UN0489	10	
Dinitrophenol, <i>dry or wetted with less than 15 percent water, by mass</i> .....	UN0076	10	5E
Dinitrophenolates <i>alkali metals, dry or wetted with less than 15 percent water, by mass</i> .....	UN0077	10	5E
Dinitroresorcinol, <i>dry or wetted with less than 15 percent water, by mass</i> .....	UN0078	10	5E
Dinitrosobenzene .....	UN0406	10	
Dipicryl sulfide, <i>dry or wetted with less than 10 percent water, by mass</i> .....	UN0401	10	
Explosive, blasting, type A .....	UN0081	10	21E
Explosive, blasting, type B .....	UN0082	10	
Explosive, blasting, type B or Agent blasting, Type B .....	UN0331	10	
Explosive, blasting, type C .....	UN0083	10	22E

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Explosive, blasting, type D .....	UN0084	10	19E
Explosive, blasting, type E .....	UN0241	10	
Explosive, blasting, type E or Agent blasting, Type E .....	UN0332	10	
Fireworks .....	UN0333	07	
Fireworks .....	UN0334	07	
Fireworks .....	UN0335	07	
Fireworks .....	UN0336	06	
Fireworks .....	UN0337	05	
Flares, aerial .....	UN0093	07	
Flares, aerial .....	UN0403	06	
Flares, aerial .....	UN0404	05	
Flares, aerial .....	UN0420	07	
Flares, aerial .....	UN0421	07	
Flares, surface .....	UN0092	07	
Flares, surface .....	UN0418	07	
Flares, surface .....	UN0419	07	
Flash powder .....	UN0094	15	
Flash powder .....	UN0305	15	
Fracturing devices, explosive, without detonators for oil wells .....	UN0099	07	
Fuse, igniter tubular metal clad .....	UN0103	06	
Fuse, non-detonating instantaneous or quickmatch .....	UN0101	07	
Fuse, safety .....	UN0105	05	
Fuzes, detonating .....	UN0106	11	
Fuzes, detonating .....	UN0107	11	
Fuzes, detonating .....	UN0257	06	
Fuzes, detonating .....	UN0367	05	
Fuzes, detonating, with protective features .....	UN0408	07	
Fuzes, detonating, with protective features .....	UN0409	07	
Fuzes, detonating, with protective features .....	UN0410	06	
Fuzes, igniting .....	UN0316	07	
Fuzes, igniting .....	UN0317	06	
Fuzes, igniting .....	UN0368	05	
Grenades, empty primed .....	NA0349	05	
Grenades, hand or rifle, with bursting charge .....	UN0284	07	
Grenades, hand or rifle, with bursting charge .....	UN0285	07	
Grenades, hand or rifle, with bursting charge .....	UN0292	08	
Grenades, hand or rifle, with bursting charge .....	UN0293	08	
Grenades, practice, hand or rifle .....	UN0110	05	
Grenades, practice, hand or rifle .....	UN0318	07	
Grenades, practice, hand or rifle .....	UN0372	07	
Grenades, practice, Hand or rifle .....	UN0452	06	
Guanyl nitrosaminoguanlylidene hydrazine, wetted with not less than 30 percent water, by mass.	UN0113	12	
Guanyl nitrosaminoguanlyltetrazene, wetted or Tetrazene, wetted with not less than 30 percent water or mixture of alcohol and water, by mass.	UN0114	12	
Hexanitrodiphenylamine or Dipicrylamine or Hexyl .....	UN0079	10	
Hexanitrostilbene .....	UN0392	10	
Hexolite, or Hexotol dry or wetted with less than 15 percent water, by mass .....	UN0118	10	
Hexotonal .....	UN0393	10	
Igniters .....	UN0121	07	
Igniters .....	UN0314	07	
Igniters .....	UN0315	07	
Igniters .....	UN0325	06	
Igniters .....	UN0454	05	
Jet perforating guns, charged oil well, with detonator .....	NA0124	07	
Jet perforating guns, charged oil well, with detonator .....	NA0494	06	
Jet perforating guns, charged, oil well, without detonator .....	UN0124	07	
Jet perforating guns, charged, oil well, without detonator .....	UN0494	06	
Lead azide, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	UN0129	12	
Lead mononitroresorcinate .....	NA0473	12	
Lead styphnate, wetted or Lead trinitroresorcinate, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	UN0130	12	
Lighters, fuse .....	UN0131	05	
Mannitol hexanitrate, wetted or Nitromannite, wetted with not less than 40 percent water, or mixture of alcohol and water, by mass.	UN0133	10	
5-Mercaptotetrazol-1-acetic acid .....	UN0448	09	
Mercury fulminate, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass.	UN0135	12	
Mines with bursting charge .....	UN0136	08	
Mines with bursting charge .....	UN0137	03	
Mines with bursting charge .....	UN0138	03	
Mines with bursting charge .....	UN0294	08	

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Model rocket motor .....	NA0276	06	
Model rocket motor .....	NA0323	05	
Nitro urea .....	UN0147	10	
5-Nitrobenzotriazol .....	UN0385	10	
Nitrocellulose, <i>dry or wetted with less than 25 percent water (or alcohol), by mass</i> .....	UN0340	13	27E
Nitrocellulose, <i>plasticized with not less than 18 percent plasticizing substance, by mass</i> ...	UN0343	10	
Nitrocellulose, <i>unmodified or plasticized with less than 18 percent plasticizing substance, by mass.</i>	UN0341	13	27E
Nitrocellulose, <i>wetted with not less than 25 percent alcohol, by mass</i> .....	UN0342	10	
Nitroglycerin, <i>desensitized with not less than 40 percent non-volatile water insoluble phlegmatizer, by mass.</i>	UN0143	13	21E
Nitroglycerin, <i>solution in alcohol, with more than 1 percent but not more than 10 percent nitroglycerin.</i>	UN0144	10	21E
Nitroguanidine or Picrite, <i>dry or wetted with less than 20 percent water, by mass</i> .....	UN0282	10	
Nitrostarch, <i>dry or wetted with less than 20 percent water, by mass</i> .....	UN0146	10	
Nitrotriazolone or NTO .....	UN0490	10	
Octolite or Octol, <i>dry or wetted with less than 15 percent water, by mass</i> .....	UN0266	10	
Octonal .....	UN0496	10	
Pentaerythrite tetranitrate or Pentaerythritol tetranitrate or PETN, <i>with not less than 7 percent wax by mass.</i>	UN0411	10	
Pentaerythrite tetranitrate, <i>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.</i>	UN0150	10	
Pentolite, <i>dry or wetted with less than 15 percent water, by mass</i> .....	UN0151	10	
Powder cake, <i>wetted or Powder paste, wetted with not less than 17 percent alcohol by mass.</i>	UN0433	10	
Powder cake, <i>wetted or Powder paste, wetted with not less than 25 percent water, by mass.</i>	UN0159	10	
Powder, smokeless .....	UN0160	.....	26E
Powder, smokeless .....	UN0161	.....	26E
Primers, cap type .....	UN0044	05	
Primers, cap type .....	UN0377	11	
Primers, cap type .....	UN0378	06	
Primers, tubular .....	UN0319	07	
Primers, tubular .....	UN0320	06	
Primers, tubular .....	UN0376	05	
Projectiles, <i>inert with tracer</i> .....	UN0345	01	
Projectiles, <i>inert, with tracer</i> .....	UN0424	03	
Projectiles, <i>inert, with tracer</i> .....	UN0425	02	
Projectiles, <i>with burster or expelling charge</i> .....	UN0346	03	
Projectiles, <i>with burster or expelling charge</i> .....	UN0347	02	
Projectiles, <i>with burster or expelling charge</i> .....	UN0426	08	
Projectiles, <i>with burster or expelling charge</i> .....	UN0427	08	
Projectiles, <i>with burster or expelling charge</i> .....	UN0434	03	
Projectiles, <i>with burster or expelling charge</i> .....	UN0435	02	
Projectiles, <i>with bursting charge</i> .....	UN0167	08	
Projectiles, <i>with bursting charge</i> .....	UN0168	03	
Projectiles, <i>with bursting charge</i> .....	UN0169	03	
Projectiles, <i>with bursting charge</i> .....	UN0324	08	
Projectiles, <i>with bursting charge</i> .....	UN0344	02	
Propellant, liquid .....	UN0495	10	
Propellant, liquid .....	UN0497	10	
Propellant, solid .....	UN0498	.....	26E
Propellant, solid .....	UN0499	.....	26E
RDX and HMX mixtures, <i>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.</i>	UN0391	10	
Release devices, explosive .....	UN0173	05	
Rivets, explosive .....	UN0174	05	
Rocket motors .....	UN0186	03	
Rocket motors .....	UN0280	03	
Rocket motors .....	UN0281	03	
Rocket motors, liquid fueled .....	UN0395	04	23E
Rocket motors, liquid fueled .....	UN0396	04	23E
Rocket motors with hypergolic liquids <i>with or without an expelling charge</i> .....	UN0250	08	8E, 14E, 15E,
Rocket motors with hypergolic liquids <i>with or without an expelling charge</i> .....	UN0322	08	8E, 14E, 15E,
Rockets, line-throwing .....	UN0238	07	
Rockets, line-throwing .....	UN0240	07	
Rockets, line-throwing .....	UN0453	06	
Rockets, liquid fueled <i>with bursting charge</i> .....	UN0397	04	23E
Rockets, liquid fueled <i>with bursting charge</i> .....	UN0398	04	23E
Rockets, <i>with bursting charge</i> .....	UN0180	08	
Rockets, <i>with bursting charge</i> .....	UN0181	03	

Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Rockets, with bursting charge .....	UN0182	03	
Rockets, with bursting charge .....	UN0295	08	
Rockets, with expelling charge .....	UN0436	03	
Rockets, with expelling charge .....	UN0437	03	
Rockets, with expelling charge .....	UN0438	02	
Rockets, with inert head .....	UN0183	03	
Samples, explosive, other than initiating explosives .....	UN0190	14	
Signal devices, hand .....	UN0191	06	
Signal devices, hand .....	UN0373	05	
Signals, distress, ship .....	UN0194	07	
Signals, distress, ship .....	UN0195	07	
Signals, railway track, explosive .....	UN0192	07	
Signals, railway track, explosive .....	UN0193	05	
Signals, railway track, explosive .....	UN0492	07	
Signals, railway track, explosive .....	UN0493	06	
Signals, smoke .....	UN0196	07	
Signals, smoke .....	UN0197	06	
Signals, smoke .....	UN0313	07	
Signals, smoke .....	UN0487	07	
Sodium dinitro-o-cresolate, dry or wetted with less than 15 percent water, by mass .....	UN0234	10	5E
Sodium picramate, dry or wetted with less than 20 percent water, by mass .....	UN0235	10	5E
Sounding devices, explosive .....	UN0204	08	
Sounding devices, explosive .....	UN0296	08	
Sounding devices, explosive .....	UN0374	07	
Sounding devices, explosive .....	UN0375	07	
Substances, explosive, n.o.s .....	UN0357	.....	8E, 14E, 15E, 17E
Substances, explosive, n.o.s .....	UN0358	.....	8E, 14E, 15E, 17E
Substances, explosive, n.o.s .....	UN0359	.....	8E, 14E, 15E, 17E
Substances, explosive, n.o.s .....	UN0473	12	
Substances, explosive, n.o.s .....	UN0474	10	
Substances, explosive, n.o.s .....	UN0475	10	
Substances, explosive, n.o.s .....	UN0476	08	
Substances, explosive, n.o.s .....	UN0477	10	
Substances, explosive, n.o.s .....	UN0478	08	
Substances, explosive, n.o.s .....	UN0479	09	
Substances, explosive, n.o.s .....	UN0480	09	
Substances, explosive, n.o.s .....	UN0481	05	
Substances, explosive, n.o.s .....	UN0485	08	
Substances, explosive, very insensitive, n.o.s., or Substances, EVI, n.o.s .....	UN0482	10	
Tetranitroaniline .....	UN0207	10	
Tetrazol-1-acetic acid .....	UN0407	09	
Torpedoes, liquid fueled, with inert head .....	UN0450	04	23E
Torpedoes, liquid fueled, with or without bursting charge .....	UN0449	04	23E
Torpedoes with bursting charge .....	UN0329	03	
Torpedoes with bursting charge .....	UN0330	08	
Torpedoes with bursting charge .....	UN0451	03	
Toy Caps .....	NA0337	05	
Tracers for ammunition .....	UN0212	07	
Tracers for ammunition .....	UN0306	06	
Trinitro-meta-cresol .....	UN0216	10	5E
Trinitroaniline or Picramide .....	UN0153	10	
Trinitroanisole .....	UN0213	10	
Trinitrobenzene, dry or wetted with less than 30 percent water, by mass .....	UN0214	10	
Trinitrobenzenesulfonic acid .....	UN0386	10	5E
Trinitrobenzoic acid, dry or wetted with less than 30 percent water, by mass .....	UN0215	10	5E
Trinitrochlorobenzene or Picryl chloride. ....	UN0155	10	
Trinitrofluorenone .....	UN0387	10	
Trinitronaphthalene .....	UN0217	10	
Trinitrophenetole .....	UN0218	10	
Trinitrophenol or Picric acid, dry or wetted with less than 30 percent water, by mass .....	UN0154	10	5E
Trinitrophenylmethylnitramine or Tetryl. ....	UN0208	10	
Trinitroresorcinol or Styphnic acid, dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass. ....	UN0219	10	5E
Trinitroresorcinol, wetted or Styphnic acid, wetted with not less than 20 percent water, or mixture of alcohol and water by mass. ....	UN0394	10	5E
Trinitrotoluene and Trinitrobenzene mixtures or TNT and trinitrobenzene mixtures or TNT and hexanitrostilbene mixtures or Trinitrotoluene and hexanitrostilbene mixtures. ....	UN0388	10	
Trinitrotoluene mixtures containing Trinitrobenzene and Hexanitrostilbene or TNT mixtures containing trinitrobenzene and hexanitrostilbene. ....	UN0389	10	
Trinitrotoluene or TNT, dry or wetted with less than 30 percent water, by mass .....	UN0209	10	
Tritonal .....	UN0390	10	
Urea nitrate, dry or wetted with less than 20 percent water, by mass .....	UN0220	10	
Warheads, rocket with burster or expelling charge .....	UN0370	02	



Column (2) entry	Column (4) entry	Column (10a) revise to read:	Column (10b) revise to read:
Warheads, rocket with burster or expelling charge .....	UN0371	08	
Warheads, rocket with bursting charge .....	UN0286	03	
Warheads, rocket with bursting charge .....	UN0287	03	
Warheads, rocket with bursting charge .....	UN0369	08	
Warheads, torpedo with bursting charge .....	UN0221	03	
Zirconium picramate, dry or wetted with less than 20 percent water, by mass. ....	UN0236	10	5E

13. In Appendix B to § 172.101, paragraphs 1. and 2. would be revised and the List of Marine Pollutants would be amended by removing 73 entries, adding 2 entries and revising 2 entries in appropriate alphabetical order to read as follows:

**Appendix B to § 172.101—List of Marine Pollutants**

1. See § 171.4 of this subchapter for applicability of marine pollutants. This

appendix lists potential marine pollutants as defined in § 171.8 of this subchapter.

2. Marine pollutants listed in this appendix are not necessarily listed by name in the § 172.101 Table. If a marine pollutant not listed by name or by synonym in the § 172.101 Table meets the definition of any hazard Class 1 through 8, then you must determine the class and division of the material in accordance with § 173.2a of this subchapter. You must also select the most appropriate hazardous material description

and proper shipping name. If a marine pollutant not listed by name or by synonym in the § 172.101 Table does not meet the definition of any Class 1 through 8, then you must offer it for transportation under the most appropriate of the following two Class 9 entries: “Environmentally hazardous substances, liquid, n.o.s.,” UN3082, or “Environmentally hazardous substances, solid, n.o.s.,” UN3077.

\* \* \* \* \*

**LIST OF MARINE POLLUTANTS**

S.M.P. (1)	Marine pollutant (2)
[Remove:] .....	Acetal
	Acetaldehyde
	Amyl mercaptans
	Anisole
	Benzaldehyde
	Butyl benzenes
	n-Butyl butyrate
	Butylphenols, liquid
	Butylphenols, solid
	Butyraldehyde
	Calcium naphthenate
	Camphor oil
	Chlorotoluenes (ortho-, meta-, para-)
	Coal tar
	Coal tar naphtha
	Creosote (coal tar)
	Creosote (wood tar)
	Cresols (o-; m-; p-)
	Cresylic acid
	Cresylic acid sodium salt
	normal-Decaldehyde
	normal-Decanol
	Decyl acrylate
	Dichlorobenzene (meta; ortho; para)
	Dichlorophenols, liquid
	Dichlorophenols, solid
	2,4-Dichlorophenoxyacetic acid (see also 2,4D)
	2,4 Dichlorophenoxyacetic acid diethanolamine salt
	2,4 Dichlorophenoxyacetic acid dimethylamine salt
	2,4-Dichlorophenoxyacetic acid triisopropylamine salt
	Diethylbenzenes (mixed isomers)
	Diisopropyl-naphthalene
	Dimethyl disulphide
	Dimethyl glyoxal (butanedione)
	Dimethyl sulphide
	Diphenyl ether
	Diphenyl ether/biphenyl phenyl ether mixtures
	Diphenyl/diphenyl ether (mixtures)
	EPTC (ISO)
	Ethyl acrylate, inhibited
	2-Ethylbutyraldehyde
	2-Ethylhexenal
	Ethyl chlorothioformate
	2,4-Hexadiene aldehyde
	normal-Hexaldehyde

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
	Iron oxide, spent
	Iron sponge, spent
	Isobutyl aldehyde
	Isobutyl isobutyrate
	Isobutyl propionate
	Isobutyraldehyde
	Isodecaldehyde
	Isodecanol
	Isononanol
	Isooctanol
	Isopropylbenzene
	Isovaleraldehyde
	1-Methyl-4-ethylbenzene
	2-Methyl-5-ethylpyridine
	Methyl salicylate
	2-Methylbutyraldehyde
	Methylnaphthalenes, liquid
	Methylnaphthalenes, solid
	Naphthalene, crude or refined
	Naphthalene, molten
	Naphthenic acids, liquid
	Naphthenic acids, solid
	Nitroresols
	Nitrotoluenes (ortho-;meta-;para-), liquid
	Nitrotoluenes (ortho-;meta-;para-), solid
	1-Nonanal
	1-Nonanol
	1-Octanol
	alpha-Pinene
	Propanethiols
	Propionaldehyde
	n-Propylbenzene
	Styrene monomer, inhibited
	n-Tetramethylbenzenes
	4-Thiapentanal
	1,2,3-Trimethylbenzene
	1,2,4-Trimethyl benzene
	1,3,5-Trimethyl benzene
	Turpentine
	1-Undecanol
	normal-Valeraldehyde
	Vinyltoluenes, inhibited <i>mixed isomers</i>
	Xylenols
[Add:]	
*	* * * * *
	Chlorotoluenes (meta-;para-)
*	* * * * *
	Desmedipham
*	* * * * *
PP .....	Diclofop-methyl
*	* * * * *
	Dichlorobenzene (para)
*	* * * * *
	Diisopropyl-naphthalenes, mixed isomers
*	* * * * *
PP .....	Fenchlorazole-ethyl
*	* * * * *
PP .....	Fenoxapro-ethyl
*	* * * * *
PP .....	Fenoxaprop-P-ethyl
*	* * * * *
	Linuron

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
* * * * *	* * * * *
PP .....	Silafluofen
* * * * *	* * * * *
PP .....	1,2,3-Trichlorobenzene
* * * * *	* * * * *
[Revise:]	
* * * * *	* * * * *
PP .....	Dodecyl hydroxypropyl sulfide
* * * * *	* * * * *

14. In § 172.102, in paragraph (c)(1), Special Provisions 43, 110, 128 and 136 would be revised and Special Provisions 139, 142 and 143 would be added; paragraph (c)(3) introductory text, Special Provisions B53 and B69 and paragraphs (c)(4) and (c)(7) would be revised; and in paragraph (c)(8), Special Provisions W7, W8 and W9 would be added in numerical order to read as follows:

**§ 172.102 Special provisions.**

\* \* \* \* \*  
 (c) \* \* \*  
 (1) \* \* \*

*Code/Special Provisions*

\* \* \* \* \*

43 The membrane filters, including paper separators and coating or backing materials, that are present in transport, must not be able to propagate a detonation as tested by one of the tests described in the UN Manual of Tests and Criteria, Part I, Test series 1(a). On the basis of the results of suitable burning rate tests, and taking into account the standard tests in the UN Manual of Tests and Criteria, Part III, subsection 33.2.1, nitrocellulose membrane filters in the form in which they are to be transported that do not meet the criteria for a Division 4.1 material are not subject to the requirements of this subchapter. Packagings must be so constructed that explosion is not possible by reason of increased internal pressure. Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the requirements of this subchapter when contained individually in an article or a sealed packet.

\* \* \* \* \*

110 Fire extinguishers transported under UN1044 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.

\* \* \* \* \*

128 Regardless of the provisions of § 172.101(c)(12), aluminum smelting by-products, aluminum remelting by-products and coated magnesium granules described under these entries meeting the definition of Class 8, Packing Group II or III, may be classed as a Division 4.3 material and transported under this entry. The presence of a Class 8 hazard must be communicated as required by this part for subsidiary hazards.

\* \* \* \* \*

136 This entry only applies to machinery and apparatus containing hazardous materials as in integral element of the machinery or apparatus. It may not be used to describe machinery or apparatus for which a proper shipping name exists in the § 172.101 Table. Except when approved by the Associate Administrator, machinery or apparatus may only contain hazardous materials for which exceptions are referenced in Column (8) of the § 172.101 Table and are provided in part 173, subpart D, of this subchapter. Hazardous materials shipped under this entry are excepted from the labeling requirements of this subchapter unless offered for transportation or transported by aircraft and are not subject to the placarding requirements of subpart F of part 173 of this subchapter. Orientation markings as described in § 172.312 (a)(2) are required when liquid hazardous materials may escape due to incorrect orientation. The machinery or apparatus, if unpackaged, or the packaging in which it is contained shall be marked "Dangerous goods in machinery" or "Dangerous goods in apparatus", as appropriate, with the identification number UN3363. For transportation by aircraft, machinery or apparatus may not contain any material forbidden for transportation by passenger or cargo aircraft. The Associate Administrator may except from the requirements of this subchapter, equipment, machinery and apparatus provided:

- a. It is shown that it does not pose a significant risk in transportation;
- b. The quantities of hazardous materials do not exceed those specified in § 173.4 of this subchapter; and
- c. The equipment, machinery or apparatus conforms with § 173.222 of this subchapter.

\* \* \* \* \*

139 Use of the "special arrangement" proper shipping names for international shipments must be made under an IAEA Certificate of Competent Authority issued by the U.S. Competent Authority in accordance with the requirements in § 173.471, § 173.472, or § 173.473 of this subchapter. Use of these proper shipping names for domestic shipments may be made only under a DOT exemption, as defined in, and in accordance with the requirements of subpart B of part 107 of this subchapter.

\* \* \* \* \*

142 These hazardous materials may not be classified and transported unless authorized by the Associate Administrator. The Associate Administrator will base the authorization on results from Series 2 tests and a Series 6(c) test from the UN Manual of Tests and Criteria on packages as prepared for transport in accordance with the requirements of this subchapter.

- 143 These articles may contain:
- a. Division 2.2 compressed gases, including oxygen;
  - b. Signal devices (Class 1) which may include smoke and illumination signal flares. Signal devices must be packed in plastic or fiberboard inner packagings;
  - c. Electric storage batteries;
  - d. First aid kits; or
  - e. Strike anywhere matches.

\* \* \* \* \*

(3) "B" codes. These provisions apply only to bulk packagings, other than IBCs:

*Code/Special Provisions*

\* \* \* \* \*

B53 Packagings must be made of either aluminum or steel.

\* \* \* \* \*

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 be approved by the Associate Administrator.

\* \* \* \* \*

(4) Table 1—IBC Codes and BB Special IBC Packing Provisions. These

provisions apply only to transportation in IBCs:

TABLE 1.—IBC CODES<sup>1</sup>

IBC Code	Authorized IBCs
IB1	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N). <i>Additional Requirement:</i> 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.
IB2	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). <i>Additional Requirement:</i> 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	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). <i>Additional Requirement:</i> 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.
IB4	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	<i>Authorized IBCs:</i> 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	<i>Authorized IBCs:</i> 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). <i>Additional Requirement:</i> Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	<i>Authorized IBCs:</i> 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). <i>Additional Requirement:</i> Liners of wooden IBCs must be sift-proof.
IB8	<i>Authorized IBCs:</i> 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).
IB99	IBCs are only authorized if approved by the Associate Administrator.

<sup>1</sup> IBCs may be used for the transportation of hazardous materials when no IBC code is assigned in the § 172.101 Hazardous Materials Table for the specific material if approved by the Associate Administrator.

TABLE 2.—ORGANIC PEROXIDE IBC CODE (IB52)<sup>1</sup>

UN No.	Organic peroxide	Type of IBC	Maximum quantity (liters)	Control temperature (°C)	Emergency temperature (°C)
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 A	31A	1250		
		31HA1	1000		
		31H1	1000		
	1,1-Di-(tert-butylperoxy) cyclohexane, not more than 42% in diluent type A.				
	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			
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED				
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B.	31HA1	1000	+30	+35
		31A	1250	+30	+35
	tert-Butyl peroxyneodecanoate, not more than 32% in diluent type A.	31A	1250	0	+10

TABLE 2.—ORGANIC PEROXIDE IBC CODE (IB52)<sup>1</sup>—Continued

UN No.	Organic peroxide	Type of IBC	Maximum quantity (liters)	Control temperature (°C)	Emergency temperature (°C)
	tert-Butyl peroxyneodecanoate, not more than 42% stable dispersion, in water.	31A	1250	-5	+5
	tert-Butyl peroxy-pivalate, not more than 27% in diluent type B .....	31HA1	1000	+10	+15
		31A	1250	+10	+15
	Cumyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	-15	-5
	Di-(4-tert-butylcyclohexyl) peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30	+35
	Dicetyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30	+35
	Di-(2-ethylhexyl) peroxydicarbonate, not more than 52%, stable dispersion, in water.	31A	1250	-20	-10
	Dimyristyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+15	+20
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A.	31HA1	1000	+10 C	+15
		31A	1250	+10 C	+15
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 52%, stable dispersion, in water.	31A	1250	+10	+15
	1,1,3,3-Tetramethylbutyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	-5	+5

<sup>1</sup> This IBC Code applies to organic peroxides of type F. For formulations not listed in this table, only IBCs that are approved by the Associate Administrator may be used.

TABLE 3.—BB CODES

BB1 .....	IBCs must be packed in closed freight containers or a closed transport vehicle.
BB2 .....	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.
BB3 .....	Flexible IBCs shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.
BB4 .....	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
BB5 .....	IBCs must be provided with 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.
BB6 .....	Non-specification bulk bins are authorized.
BB7 .....	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 of this subchapter.

\* \* \* \* \*

(7) “T” codes. (i) These provisions apply to the transportation of 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. In T23, the organic peroxides and self-reactive substances which are authorized to be transported in portable tanks are listed

along with the applicable control and emergency temperatures. Liquefied compressed gases are assigned to portable tank instruction T50. T50 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. Refrigerated liquefied gases which 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 § 173.32b 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(f)(3) of this subchapter for the pressure relief devices. When the word “Normal” is indicated, § 178.275(f)(3) of this subchapter does not apply. Column 5 either 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

[Portable Tank Instructions: T1–T22—Portable tank instructions. 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(f)) (4)	Bottom opening requirements (See § 178.275(c)) (5)
T1	1.5	§ 178.274(d)(2)	Normal	§ 178.274(c)(2).
T2	1.5	§ 178.274(d)(2)	Normal	§ 178.275(c)(3).
T3	2.65	§ 178.274(d)(2)	Normal	§ 178.275(c)(2).
T4	2.65	§ 178.274(d)(2)	Normal	§ 178.275(c)(3).
T5	2.65	§ 178.274(d)(2)	§ 178.275(f)(3)	Prohibited.
T6	4	§ 178.274(d)(2)	Normal	§ 178.275(c)(2).
T7	4	§ 178.274(d)(2)	Normal	§ 178.275(c)(3).
T8	4	§ 178.274(d)(2)	Normal	Prohibited.
T9	4	6 mm	Normal	Prohibited.
T10	4	6 mm	§ 178.275(f)(3)	Prohibited.
T11	6	§ 178.274(d)(2)	Normal	§ 178.275(c)(3).
T12	6	§ 178.274(d)(2)	§ 178.275(f)(3)	§ 178.275(c)(3).
T13	6	6 mm	Normal	Prohibited.
T14	6	6 mm	§ 178.275(f)(3)	Prohibited.
T15	10	§ 178.274(d)(2)	Normal	§ 178.275(c)(3).
T16	10	§ 178.274(d)(2)	§ 178.275(f)(3)	§ 178.275(c)(3).
T17	10	6 mm	Normal	§ 178.275(c)(3).
T18	10	6 mm	§ 178.275(f)(3)	§ 178.275(c)(3).
T19	10	6 mm	§ 178.275(f)(3)	Prohibited.
T20	10	8 mm	§ 178.275(f)(3)	Prohibited.
T21	10	10 mm	Normal	Prohibited.
T22	10	10 mm	§ 178.275(f)(3)	Prohibited.

(iii) The following table specifies the portable tank requirements applicable to T23 for self-reactive substances of Division 4.1 and organic peroxides of Division 5.2 which are authorized to be transported in portable tanks:

PORTABLE TANK INSTRUCTION

[T23—Portable tank instruction. T23 applies to self-reactive substances of Division 4.1 and organic peroxides of Division 5.2.]

UN No.	Hazardous material	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel)	Bottom opening requirements	Pressure-relief requirements	Filling limits	Control temperature (°C)	Emergency temperature (°C)
3109	Organic peroxide, Type F, liquid.  tert-Butyl hydroperoxide not more than 72% water. (Provided that steps have been taken to achieve the safety equivalence of 65% tert-Butyl hydroperoxide and 35% water.)  Cumyl hydro-peroxide, not more than 90% in diluent type A.  Di-tert-butyl peroxide, not more than 32% in diluent type A.  Isopropyl cumyl hydro-peroxide, not more than 72% in diluent type A.  p-Menthyl hydro-peroxide, not more than 72% in diluent type A.  Pinanyl hydro-peroxide, not more than 50% in diluent type A.	444444	See § 178.274(d)(2).	See § 178.275(c)(3).	See § 178.275(j)(1).	Not more than 90% at 59 °F (15 °C).  Not more than 90% at 59 °F (15 °C).  Not more than 90% at 59 °F (15 °C).  Not more than 90% at 59 °F (15 °C).  Not more than 90% at 59 °F (15 °C).  Not more than 90% at 59 °F (15 °C).		
3110	Organic peroxide, Type F, solid.  Dicumyl peroxide. Maximum quantity per portable tank 2,000 kg.	4	§ 178.274(d)(2)	§ 178.275(c)(3)	§ 178.275(j)(1)	Not more than 90% at 59 °F (15 °C).		
3119	Organic peroxide, Type F, liquid, temperature controlled.	444444	See § 178.274(d)(2).	See § 178.275(c)(3).	See § 178.275(j)(1).	Not more than 90% at 59 °F (15 °C).	As approved by Assoc. Admin. for HMS.	As approved by Assoc. Admin. for HMS.

PORTABLE TANK INSTRUCTION—Continued

[T23—Portable tank instruction. T23 applies to self-reactive substances of Division 4.1 and organic peroxides of Division 5.2.]

UN No.	Hazardous material	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel)	Bottom opening requirements	Pressure-relief requirements	Filling limits	Control temperature (°C)	Emergency temperature (°C)
3120	tert-Butyl peroxyacetate, not more than 32% in diluent type B.	4	§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	+30 .....	+35
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B.		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	+15 .....	+20
	tert-Butyl peroxyvalate, not more than 27% in diluent type B.		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	−5 .....	+10
	tert-Butyl peroxy-3,5,5-trimethyl-hexanoate, not more than 32% in diluent type B.		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	+35 .....	+40
	Di-(3,5,-trimethyl-hexanoyl) peroxide, not more than 38% in diluent type A.		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	0 .....	+5
	Organic peroxide, Type F, solid, temperature controlled.		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	As approved by Assoc. Admin. for HMS.	As approved by Assoc. Admin. for HMS.
	Self-reactive liquid Type F ..		§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	As approved by Assoc. Admin. for HMS.	As approved by Assoc. Admin. for HMS.
3229	Self-reactive liquid Type F ..	4	§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).		
3230	Self-Reactive solid Type F	4	§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).		
3239	Self-reactive liquid Type F, temperature controlled.	4	§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	As approved by Assoc. Admin. for HMS.	As approved by Assoc. Admin. for HMS.
3240	Self-reactive solid Type F, temperature controlled.	4	§ 178.274(d)(2) ..	§ 178.275(c)(3) ...	§ 178.275(j)(1) ....	Not more than 90% at 59 °F (15 °C).	As approved by Assoc. Admin. for HMS.	As approved by Assoc. Admin. for HMS.

(iv) The following portable tank instruction applies to portable tanks used for the transportation of liquefied compressed gases. The T50 table provides the UN identification number and proper shipping name for each

liquefied compressed gas authorized to be transported in a T50 portable tank. The following table provides maximum allowable working pressures, bottom opening requirements, pressure relief device requirements and degree of

filling requirements for each liquefied compressed gases permitted for transportation in a T50 portable tank:

**Note to reader:** We are proposing to revise the word “stabilized” in the proper shipping names below to read “inhibited” (see preamble discussion under § 172.101).

PORTABLE TANK INSTRUCTION

[T50—Portable tank instruction 50 applies to liquefied compressed gases.]

UN No.	Non-refrigerated liquefied compressed gasses	Max. allowable working 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) .....	0.53
1009	Bromotrifluoromethane or Refrigerant gas R 13B1	38.0 34.0 30.0 27.5	.....do .....	Normal .....	1.13
1010	Butadienes, stabilized .....	7.5 7.0 7.0	.....do .....	.....do .....	0.55
1011	Butane .....	7.0 7.0 7.0 7.0	.....do .....	.....do .....	0.51

PORTABLE TANK INSTRUCTION—Continued

[T50—Portable tank instruction 50 applies to liquefied compressed gases.]

UN No.	Non-refrigerated liquefied compressed gasses	Max. allowable working pressure (bar) Small; Bare; Sunshield Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1012	Butylene .....	8.0 7.0 7.0 7.0	.....do .....	.....do .....	0.53
017	Chlorine .....	19.0 17.0 15.0 13.5	Not allowed .....	§ 178.276(e) .....	1.25
1018	Chlorodifluoromethane or Refrigerant gas R 22 .....	26.0 24.0 21.0	Allowed .....	Normal .....	1.03
1020	Chloropentafluoroethane or Refrigerant gas R 115 .....	19.0 23.0 20.0 18.0	.....do .....	.....do .....	1.06
1021	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124. ....	16.0 10.3 9.8 7.9	.....do .....	.....do .....	1.2
1027	Cyclopropane .....	7.0 18.0 16.0 14.5	.....do .....	.....do .....	0.53
1028	Dichlorodifluoromethane or Refrigerant gas R 12 ..	13.0 16.0 15.0 13.0	.....do .....	.....do .....	1.15
1029	Dichlorofluoromethane or Refrigerant gas R 21 .....	11.5 7.0 7.0 7.0	.....do .....	.....do .....	1.23
1030	1,1-Difluoroethane or Refrigerant gas R 152a .....	7.0 16.0 14.0 12.4	.....do .....	.....do .....	0.79
1032	Dimethylamine, anhydrous .....	11.0 7.0 7.0 7.0	.....do .....	.....do .....	0.59
1033	Dimethyl ether .....	7.0 15.5 13.8 12.0	.....do .....	.....do .....	0.58
1036	Thylamine .....	10.6 7.0 7.0 7.0	.....do .....	.....do .....	0.61
1037	Ethyl chloride .....	7.0 7.0 7.0 7.0	.....do .....	.....do .....	0.8
1040	Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 °C. ....	7.0 - 10	Not allowed .....	§ 178.276(e) .....	.078
1041	Ethylene oxide and carbon dioxide mixture with more than 9% but no more than 87% ethylene oxide. ....	1	Allowed .....	Normal .....	See § 173.32(f)
1055	Isobutylene .....	8.1 7.0 7.0 7.0	.....do .....	.....do .....	0.52
1060	Methyl acetylene and propadiene mixture, stabilized. ....	28.0 24.5 22.0 20.0	.....do .....	.....do .....	0.43



## PORTABLE TANK INSTRUCTION—Continued

[T50—Portable tank instruction 50 applies to liquefied compressed gases.]

UN No.	Non-refrigerated liquefied compressed gasses	Max. allowable working pressure (bar) Small; Bare; Sunshield Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1061	Methylamine, anhydrous .....	10.8 9.6 7.8 7.0	.....do .....	.....do .....	0.58
1062	Methyl bromide .....	7.0 7.0 7.0	Not allowed .....	§ 178.276(e) .....	1.51
1063	Methyl chloride or Refrigerant gas R 40 .....	14.5 12.7 11.3 10.0	Allowed .....	Normal .....	.081
1064	Methyl mercaptan .....	7.0 7.0 7.0	Not allowed .....	§ 178.276(e) .....	0.78
1067	Dinitrogen tetroxide .....	7.0 7.0 7.0	.....do .....	§ 178.276(e) .....	1.3
1075	Petroleum gas, liquefied .....	(1)	Allowed .....	Normal .....	See § 173.32(f)
1077	Propylene .....	28.0 24.5 22.0 20.0	.....do .....	.....do .....	0.43
1078	Refrigerant gas, n.o.s .....	(1)	.....do .....	.....do .....	See § 173.32(f)
1079	Sulphur dioxide .....	11.6 10.3 8.5 7.6	Not Allowed .....	§ 178.276(e) .....	1.23
1082	Trifluorochloroethylene, stabilized or Refrigerant gas R 1113.	17.0 15.0 13.1 11.6	.....do .....	§ 178.276(e) .....	1.13
1083	Trimethylamine, anhydrous .....	7.0 7.0 7.0	Allowed .....	Normal .....	0.56
1085	Vinyl bromide, stabilized .....	7.0 7.0 7.0	.....do .....	.....do .....	1.37
1086	Vinyl chloride, stabilized .....	10.6 9.3 8.0 7.0	.....do .....	.....do .....	0.81
1087	Vinyl methyl ether, stabilized .....	7.0 7.0 7.0	.....do .....	.....do .....	0.67
1581	Chloropicrin and methyl bromide mixture .....	7.0 7.0 7.0	Not allowed .....	§ 178.276(e) .....	1.51
1582	Chloropicrin and methyl chloride mixture .....	19.2 16.9 15.1 13.1	.....do .....	§ 178.276(e) .....	0.81
1858	Hexafluoropropylene compressed or Refrigerant gas R 1216.	19.2 16.9 15.1 13.1	Allowed .....	Normal .....	1.11

PORTABLE TANK INSTRUCTION—Continued

[T50—Portable tank instruction 50 applies to liquefied compressed gases.]

UN No.	Non-refrigerated liquefied compressed gasses	Max. allowable working pressure (bar) Small; Bare; Sunshield Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1912	Methyl chloride and methylene chloride mixture ....	15.2 13.0 11.6 10.1	.....do .....	.....do .....	0.81
1958	1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114.	7.0 7.0 7.0 7.0	.....do .....	.....do .....	1.3
1965	Hydrocarbon gas, mixture liquefied, n.o.s .....	(1)	.....do .....	.....do .....	See § 173.32(f)
1969	Isobutane .....	8.5 7.5 7.0 7.0	.....do .....	.....do .....	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	.....do .....	.....do .....	1.05
1974	Chlorodifluorobromomethane or Refrigerant gas R 12B1.	7.4 7.0 7.0 7.0	.....do .....	.....do .....	1.61
1976	Octafluorocyclobutane or Refrigerant gas RC 318	8.8 7.8 7.0 7.0	.....do .....	.....do .....	1.34
1978	Propane .....	22.5 20.4 18.0 16.5	.....do .....	.....do .....	0.42
1983	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a.	7.0 7.0 7.0 7.0	.....do .....	.....do .....	1.18
2035	1,1,1-Trifluoroethane compressed or Refrigerant gas R 143a.	31.0 27.5 24.2 21.8	.....do .....	.....do .....	0.76
2424	Octafluoropropane or Refrigerant gas R 218 .....	23.1 20.8 18.6 16.6	.....do .....	.....do .....	1.07
2517	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b.	8.9 7.8 7.0 7.0	.....do .....	.....do .....	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	.....do .....	.....do .....	1.01
3057	Trifluoroacetyl chloride .....	14.6 12.9 11.3 9.9	Not allowed .....	§ 178.276(e) .....	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) .....	1.09
3153	Perfluoro (methyl vinyl ether) .....	14.3 13.4 11.2 10.2	.....do .....	Normal .....	1.14
3159	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a.	17.7 15.7 13.8 12.1	.....do .....	.....do .....	1.04

PORTABLE TANK INSTRUCTION—Continued

[T50—Portable tank instruction 50 applies to liquefied compressed gases.]

UN No.	Non-refrigerated liquefied compressed gasses	Max. allowable working pressure (bar) Small; Bare; Sunshield Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
3161	Liquefied gas, flammable, n.o.s. ....	( <sup>1</sup> )	.....do .....	.....do .....	See § 173.32(f)
3163	Liquefied gas, n.o.s. ....	( <sup>1</sup> )	.....do .....	.....do .....	See § 173.32(f)
3220	Pentafluoroethane or Refrigerant gas R 125 .....	34.4 30.8 27.5 24.5	.....do .....	.....do .....	0.95
3252	Difluoromethane or Refrigerant gas R 32 .....	43.0 39.0 34.4 30.5	.....do .....	.....do .....	0.78
3296	Heptafluoropropane or Refrigerant gas R 227 .....	16.0 14.0 12.5 11.0	.....do .....	.....do .....	1.2
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8.8% ethylene oxide.	8.1 7.0 7.0 7.0	.....do .....	.....do .....	1.16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide.	25.9 23.4 20.9 18.6	.....do .....	.....do .....	1.02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide.	16.7 14.7 12.9 11.2	.....do .....	.....do .....	1.03
3318	Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia.	( <sup>1</sup> )	.....do .....	§ 178.276(e) .....	§ 173.32(f)
3337	Refrigerant gas R 404A .....	31.6 28.3 25.3 22.5	.....do .....	Normal .....	0.84
3338	Refrigerant gas R 407A .....	31.3 28.1 25.1 22.4	.....do .....	.....do .....	0.95
3339	Refrigerant gas R 407B .....	33.0 29.6 26.5 23.6	.....do .....	.....do .....	0.95
3340	Refrigerant gas R 407C .....	29.9 26.8 23.9 21.3	.....do .....	.....do .....	0.95

<sup>1</sup> See MAWP definition in § 178.276(a).

(v) 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.

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

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

(C) the portable tank has a pressure relief device as specified in the T Code or is preceded by a frangible disc when no frangible disc is required. If a frangible disc is required in series with the pressure relief device, the

alternative portable tank must be fitted with a frangible disc; and

(D) the portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings when two effective means of closure are specified; or the portable tank has no bottom openings or three effective means of closure when three effective means of closure are specified. If no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vii) When a hazardous material is not assigned a portable tank T Code or TP 9 is referenced in Column (7) of the § 172.101 Table, the hazardous material may only be transported in a portable tank if approved by the Associate Administrator.

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

*Code/Special Provisions*

TP1 The maximum degree of filling must not exceed the degree of filling determined by the following (see Note 1 following TP3 for an explanation of the coefficients):

$$\left( \text{Degree of filling} = \frac{97}{1 + \alpha (tr - tf)} \right)$$

TP2 The maximum degree of filling must not exceed the degree of filling determined by the following (see Note 1 following TP3):

$$\left( \text{Degree of filling} = \frac{95}{1 + \alpha (tr - tf)} \right)$$

TP3 a. For liquids transported under elevated temperature, the maximum degree of filling is determined by the following:

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

Where:  $\alpha$  is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling ( $t_f$ ) and the maximum mean bulk temperature during transportation ( $t_r$ ) both in degrees Celsius.

b. For liquids transported under ambient conditions  $\alpha$  may be calculated using the formula:

$$\alpha = \frac{d_{15} - d_{50}}{35 d_{50}}$$

Where:  $d_{15}$  and  $d_{50}$  are the densities of the liquid at 15 °C (59 °F) and 50 °C (122 °F), respectively.

TP4 The maximum degree of filling for portable tanks must not exceed 90%.

TP5 [Reserved.]

TP6 To prevent the tank from bursting in an event, including fire engulfment under the conditions prescribed in CGA pamphlet S-1.2 (see § 171.7 of this subchapter), it must be equipped with pressure relief devices that are adequate in relation to the capacity of the tank and the nature of the hazardous material transported.

TP7 The vapor space must be purged of air by nitrogen or other means.

TP8 A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flashpoint of the hazardous material transported is greater than 0 °C (32 °F).

TP9 A hazardous material assigned to special provision TP9 in Column (7) of the § 172.101 Table may only be transported in a portable tank if approved by the Associate Administrator.

TP10 The portable tank must be fitted with a lead lining at least 5 mm (0.2 inches) thick. The lead lining must be tested annually to ensure that it is intact and functional. Another suitable lining material may be used if approved by the Associate Administrator.

TP12 This material is considered highly corrosive to steel.

TP13 Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.

TP16 The tank must be protected against over and under pressurization which may be experienced during transportation. The means of protection must be approved by the approval agency designated to approve the portable tank in accordance with the procedures in subpart E, part 107 of this subchapter. The pressure relief device must be preceded by a frangible disk in accordance with the requirements of § 178.275(f)(3) of this subchapter to prevent crystallization of the product in the pressure relief device.

TP17 Only inorganic non-combustible materials may be used for thermal insulation of the tank.

TP18 The temperature of this material must be maintained between 18 °C (64.4 °F) and 40 °C (104 °F) while in transportation. Portable tanks containing solidified methacrylic acid must not be reheated during transportation.

TP19 The calculated wall thickness must be increased by 3 mm at the time of construction. Wall thickness must be verified ultrasonically at intervals midway between periodic hydraulic tests (every 2.5 years). The portable tank must not be used if the wall thickness is less than that prescribed by the applicable T code in Column (7) of the Table for this material.

TP20 This hazardous material must only be transported in insulated tanks under a nitrogen blanket.

TP21 The wall thickness must not be less than 8 mm. Tanks must be hydraulically tested and internally inspected at intervals not exceeding 2.5 years.

TP22 Lubricants for portable tank fittings must be oxygen compatible.

TP24 The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.

TP25 Sulphur trioxide 99.95% pure and above may be transported in tanks without an

inhibitor provided that it is maintained at a temperature equal to or above 32.5 °C (90.5 °F).

TP26 The heating device must be exterior to the shell. For UN 3176, this requirement only applies when the hazardous material reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in § 178.275, where the test pressure is 1.5 times the MAWP.

TP28 A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP29 A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP30 This hazardous material may only be transported in insulated tanks.

TP31 This hazardous material may only be transported in tanks in the solid state.

TP37 IM portable tanks are only authorized for the shipment of hydrogen peroxide solutions in water containing 72% or less hydrogen peroxide by weight. Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure. In addition, the portable tank must be designed so that internal surfaces may be effectively cleaned and passivated. Each tank must be equipped with pressure relief devices conforming to the following requirements:

Concentration of hydrogen peroxide solution	Total venting capacity in standard cubic feet per hour (S.C.F.H.) per pound of hydrogen peroxide solution
52% or less .....	11
Over 52%, but not greater than 60% .....	22
Over 60%, but not greater than 72% .....	32

TP38 Each tank must be insulated with an insulating material so that the overall thermal conductance at 15.5 °C (60 °F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials may not promote corrosion to steel when wet.

TP44 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this

subchapter. Thickness of stainless steel for tank shell and heads must be the greater of 7.62 mm (0.300 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.5 times the vapor pressure of the hazardous material at 46 °C (115 °F).

TP45 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for portable tank shells and heads must be the greater of 6.35 mm (0.250 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.3 times the vapor pressure of the hazardous material at 46 °C (115 °F).

TP46 Portable tanks in sodium metal service are not required to be hydrostatically retested.

TP47 This hazardous material is not permitted for transport in IM portable tanks.

(8) \* \* \*

#### Code/Special Provisions

W7 Vessel stowage category for uranyl nitrate hexahydrate solution is "D" as defined in § 172.101(k)(4).

W8 Vessel stowage category for pyrophoric thorium metal or pyrophoric uranium metal is "D" as defined in § 172.101(k)(4).

W9 When offered for transportation by water, the following Specification packagings are not authorized unless approved by the Associate Administrator: Woven plastic bags, plastic film bags, textile bags, paper bags, IBCs and bulk packagings.

\* \* \* \* \*

13. In addition, in § 172.102, in paragraph (c)(3), Special Provisions B100, B101, B103, B104, B105, B106, B108, B109 and B110 would be removed.

14. In § 172.203, paragraph (d)(11) would be revised, new paragraphs (i)(5) and (i)(6) would be added, and paragraph (n) would be revised to read as follows:

#### § 172.203 Additional description requirements.

\* \* \* \* \*

(d) \* \* \*

(11) For a shipment of low specific activity material or surface contaminated objects, the appropriate group notation of LSA-I, LSA-II, LSA-III, SCO-I, or SCO-II, unless these symbols are contained in the proper shipping name.

\* \* \* \* \*

(i) \* \* \*

(5) Minimum flashpoint if 61°C or below (in °C closed cup (c.c.)).

(6) Subsidiary hazards not communicated in the proper shipping name.

\* \* \* \* \*

(n) *Elevated temperature materials.* If a liquid material in a package meets the

definition of an elevated temperature material in § 171.8 of this subchapter, and the fact that it is an elevated temperature material is not disclosed in the proper shipping name (for example, when the words "Molten" or "Elevated temperature" are part of the proper shipping name), the word "HOT" must immediately precede the proper shipping name of the material on the shipping paper.

\* \* \* \* \*

15. In § 172.402, paragraph (b) would be revised to read as follows:

#### § 172.402 Additional labeling requirements.

\* \* \* \* \*

(b) *Display of hazard class on labels.* The appropriate hazard class or division number must be displayed in the lower corner of a primary hazard label and a subsidiary hazard label. A subsidiary label meeting the specifications of this section which were in effect on [Date of publication of final rule] (such as, a label without the hazard class or division number displayed in the lower corner of the label) may continue to be used as a subsidiary label in domestic transportation by rail or highway until October 1, 2005, provided the color tolerances are maintained and are in accordance with the display requirements in this subchapter.

\* \* \* \* \*

#### § 172.405 [Amended]

16. In § 172.405, the following changes would be made:

a. In paragraph (a) introductory text, the wording "subsidiary label when—" would be removed and "subsidiary label." would be added in its place.

b. Paragraphs (a)(1) and (a)(2) would be removed.

17. In § 172.411, the section heading, the text of paragraph (c) preceding the labels, and paragraph (d) would be revised to read as follows:

#### § 172.411 EXPLOSIVE 1.1, 1.2, 1.3, 1.4, 1.5 and 1.6 labels.

\* \* \* \* \*

(c) Except for size and color, the EXPLOSIVE 1.4, EXPLOSIVE 1.5 and EXPLOSIVE 1.6 labels must be as follows:

\* \* \* \* \*

(d) In addition to complying with § 172.407, the background color on the EXPLOSIVE 1.4, EXPLOSIVE 1.5, EXPLOSIVE 1.6 and EXPLOSIVE subsidiary label must be orange. The "\*" shall be replaced with the appropriate compatibility group. The compatibility group letter must be shown as a capitalized Roman letter. Division numerals must measure at least

30 mm (1.2 inches) in height and at least 5 mm (0.2 inches) in width.

18. In addition, in § 172.411, in paragraph (c), the wording "EXPLOSIVE SUBSIDIARY LABEL:" and the label following it would be removed.

19. In § 172.504, in paragraph (g), a sentence would be added at the end of the existing text and paragraphs (g)(1) through (g)(4) would be added to read as follows:

#### § 172.504 General placarding requirements.

\* \* \* \* \*

(g) \* \* \* When more than one compatibility group placard is required for Class 1 materials, only one placard is required to be displayed as follows:

(1) Explosive articles of compatibility groups C, D or E may be placarded displaying compatibility group E.

(2) Explosive articles of compatibility groups C, D, E or N may be placarded displaying compatibility group D.

(3) Explosive substances of compatibility groups C and D may be placarded displaying compatibility group D.

(4) Explosive articles of compatibility groups C, D, E or G, except for fireworks, may be placarded displaying compatibility group E.

20. In § 172.519, paragraph (b)(4) would be revised to read as follows:

#### § 172.519 General specifications for placards.

\* \* \* \* \*

(b) \* \* \*

(4) For a placard corresponding to the primary or subsidiary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. A permanently affixed subsidiary placard meeting the specifications of this section which were in effect on [date of publication of final rule] (such as, a placard without the hazard class or division number displayed in the lower corner of the placard) and which was installed prior to October 1, 2001, may continue to be used as a subsidiary placard in domestic transportation by rail or highway, provided the color tolerances are maintained and are in accordance with the display requirements in this subchapter. Stocks of non-permanently affixed subsidiary placards in compliance with the requirements in effect on [date of publication of final rule], may continue to be used in domestic transportation by rail or highway until October 1, 2005, or until current stocks are depleted, whichever occurs first.

\* \* \* \* \*

**PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS**

21. The authority citation for part 173 would continue to read as follows:

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

22. In § 173.2a, in paragraph (b), in the Precedence of Hazard Table, in the first column, the first three entries would be amended by adding a footnote reference “2” immediately following “I”, “II”, and “III”, respectively, and in

footnote 2 at the end of the table would be revised to read as follows:

**§ 173.2a Classification of a material having more than one hazard.**

\* \* \* \* \*  
(b) \* \* \*

**PRECEDENCE OF HAZARD TABLE**

<sup>2</sup> Materials of Division 4.1 other than self-reactive substances and solid desensitized explosives, and materials of Class 3 other than liquid desensitized explosives.

\* \* \* \* \*  
23. In § 173.4, paragraph (a)(1) introductory text is revised to read as follows:

**§ 173.4 Small quantity exceptions.**

(a) \* \* \*

(1) The maximum quantity of material per inner receptacle or article is limited to:

\* \* \* \* \*

24. In § 173.24b, paragraph (e) would be added to read as follows:

**§ 173.24b Additional general requirements for bulk packagings.**

\* \* \* \* \*

(e) *Specification packagings and UN standard packagings manufactured outside the United States*—(1) *UN portable tanks*. A UN portable tank manufactured in the United States must conform in all details to the applicable requirements in this part, the specification requirements in part 178 of this subchapter and the retest requirements in part 180 of this subchapter.

(2) *UN portable tanks manufactured outside the United States*. A UN portable tank manufactured outside the United States, in accordance with national or international regulations based on the UN Recommendations on the Transport of Dangerous Goods and is an authorized packaging, it may be filled, offered and transported in the United States, if the § 172.101 Table of this subchapter authorizes the hazardous material and it conforms to the applicable T code and tank provision codes assigned to the hazardous material in Column (7) of the Table. In addition, the portable tank must be in accordance with the following:

(i) Conform to applicable provisions in the UN Recommendations on the Transport of Dangerous Goods (Incorporated by reference, see § 171.7 of this subchapter) and the requirements of this subpart;

(ii) Be capable of passing the prescribed tests in part 178 of this subchapter applicable to the UN portable tank specification;

(iii) Be designed and manufactured according to the ASME Code (Incorporated by reference, see § 171.7 of this subchapter) or a pressure vessel design code approved by the Associate Administrator;

(iv) Be approved by the Associate Administrator when the portable tank is designed and constructed under the provisions of an alternative arrangement (see § 178.274(a)(2) of this subchapter); and

(v) When manufactured in a country other than the United States, the competent authority of the country of manufacture must provide reciprocal treatment for UN portable tanks manufactured in the United States.

25. Section 173.32 would be revised to read as follows:

**§ 173.32 Requirements for the use of portable tanks.**

(a) *General requirements*. No person may offer a hazardous material for transportation in a portable tank except as authorized by this subchapter.

(1) Except as otherwise provided in this subpart, a portable tank may not be used for the transportation of a hazardous material unless it meets the requirements of this subchapter.

(2) No person may fill and offer for transportation a portable tank when the prescribed periodic test or inspection under subpart G of part 180 of this subchapter has become due until the test or inspection has been successfully completed. This requirement does not apply to any portable tank filled prior to the test or inspection due date.

(3) When a portable tank is used as a cargo tank container, it shall conform to all the requirements prescribed for cargo tank containers. (See § 173.33.)

(b) *Substitute packagings*. A particular Specification portable tank may be substituted for another portable tank as follows:

(1) An IM or UN portable tank may be used whenever an IM or UN portable tank having less stringent requirements is authorized provided the portable tank meets or exceeds the requirements for pressure-relief devices, bottom outlets and any other special provisions specified in § 172.102(c)(7)(vi) of this subchapter.

(2) Where a Specification IM101 or IM102 portable tank is prescribed, a Specification 51 portable tank otherwise conforming to the special commodity requirements of § 172.102(c)(7) of this subchapter may be used.

(3) A DOT Specification 51 portable tank may be used whenever a DOT Specification 56, 57, or 60 portable tank is authorized. A DOT Specification 60 portable tank may be used whenever a DOT Specification 56 or 57 portable tank is authorized. A higher integrity tank used instead of a specified portable tank must meet the same design profile; for example, a DOT Specification 51 portable tank must be lined if used instead of a lined DOT Specification 60 portable tank.

(c) *Grandfather provisions for portable tanks*—(1) *Continued use of specification 56 and 57 portable tanks*. Continued use of an existing portable tank constructed to DOT Specification 56 or 57 is authorized only for a tank constructed before October 1, 1996. A stainless steel portable tank internally lined with polyethylene that was constructed on or before October 1, 1996, and that meets all requirements of DOT Specification 57 except for being equipped with a polypropylene discharge ball valve and polypropylene secondary discharge opening closure, may be marked as a Specification 57 portable tank and used in accordance with the provisions of this section.

(2) A DOT Specification 51 and IM 101 or IM 102 portable tank may not be manufactured after January 1, 2003 may continue to be used for the transportation of a hazardous material provided they fulfill the requirements of

this subchapter, including the specification requirements and the requirements of this subchapter for the transportation of the particular hazardous material (see § 171.14(d)(5) of this subchapter), and provided it conforms to the periodic inspection and tests specified for the particular portable tank in subpart G of part 180 of this subchapter. On and after January 1, 2003, all newly manufactured portable tanks must conform to the requirements for the design, construction and approval of UN portable tanks as specified in §§ 178.273, 178.274, 178.275, 178.276 and 178.277 of this subchapter.

(3) A DOT Specification portable tank manufactured prior to January 1, 1992 that is equipped with a non-reclosable pressure relief device may continue in service for the hazardous materials for which it is authorized. Except for a DOT Specification 56 or 57 portable tank, a DOT Specification portable tank manufactured after January 1, 1992, used for materials meeting the definition for Division 6.1 liquids, Packing Group I or II, Class 2 gases, or Class 3 or 4 liquids, must be equipped with a re-closing pressure relief valve having adequately sized venting capacity.

(d) *Maximum Allowable Working Pressure.* (1) Prior to filling and offering a portable tank for transportation, the shipper must confirm that the portable tank conforms to the specification required for the hazardous material and that the maximum allowable working pressure (MAWP) of the portable tank is greater than or equal to the highest pressure obtained under the following conditions:

(i) For compressed gases and certain refrigerated liquids that are not cryogenic liquids and that are not transported in a UN portable tank, the pressure prescribed in § 173.315. For liquefied compressed gases transported in a UN portable tank, the pressures prescribed in T50 in § 172.102 of this subchapter.

(ii) For liquid hazardous materials the pressures specified in § 178.275(a) of this subchapter used for determining the MAWP.

(iii) The maximum pressure used to load or unload the hazardous material.

(2) Unless otherwise specified, where a portable tank is authorized, the minimum tank design pressure is 172 kPa (25 psig) for any Packing Group I or Packing Group II liquid hazardous material that meets more than one hazard class definition.

(e) *External inspection prior to filling.* Each portable tank must be given a complete external inspection. Any

unsafe condition must be corrected prior to its being offered for transportation. The external inspection shall include a visual inspection of:

(1) The shell, piping, valves and other appurtenances for corroded areas, dents, defects in welds and other defects such as missing, damaged, or leaking gaskets;

(2) All flanged connections or blank flanges for missing or loose nuts and bolts;

(3) All emergency devices for corrosion, distortion, or any damage or defect that could prevent their normal operation;

(4) All required markings on the tank for legibility; and

(5) Any device for tightening manhole covers to ensure such devices are operative and adequate to prevent leakage at the manhole cover.

(f) *Loading requirements.* (1) A hazardous material may not be loaded in a portable tank if the part of the tank or any of its appurtenances having contact with the material during transportation would be damaged, would cause a dangerous reaction with the material or would compromise the ability of the portable tank to retain the hazardous material.

(2) A hazardous material may not be loaded in a portable tank unless it has pressure relief devices providing total relieving capacity meeting the requirements of this subchapter.

(3) Except during a hydrostatic test, a portable tank may not be subjected to a pressure greater than its maximum allowable working pressure.

(4) A portable tank may not be loaded to a gross weight greater than the maximum allowable gross weight specified on its identification plate.

(5) Except for a non-flowable solid or a liquid with a viscosity of 2,680 centistokes (millimeters squared per second) or greater at 20°C (68 °F), a portable tank or compartment thereof having a volume greater than 7,500 L (1,980 gallons) may not be loaded to a filling density of more than 20% and less than 80% by volume. This filling restriction does not apply if a portable tank is divided by partitions or surge plates into compartments of not more than 7,500 L (1,980) capacity. Portable tanks must not be offered for transportation in an ullage condition liable to produce an unacceptable hydraulic force due to surge.

(6) The outage for a portable tank may not be less than 2% at a temperature of 50 °C (122 °F). For UN portable tanks, the applicable maximum filling limits apply as specified according to the assigned TP codes in Column (7) of the § 172.101 Table of this subchapter except when transported domestically.

(7) Each tell-tale indicator for the space between a frangible disc and a safety relief valve mounted in series must be checked after the tank is filled and prior to transportation to ensure that the frangible disc is leak free. Any leakage through the frangible disc must be corrected prior to offering the tank for transportation. The tell-tale device must be designed to prevent the loss of any hazardous material through the device itself while the tank is in transportation.

(8) During filling, the temperature of the hazardous materials shall not exceed the limits of the design temperature range of the portable tank.

(9) The maximum mass of liquefied compressed gas per liter (gallon) of shell capacity (kg/L or lbs./gal.) may not exceed the density of the liquefied compressed gas at 50 °C (122 °F). The portable tank must not be liquid full at 60 °C (140 °F).

(g) *Relief system.* Any DOT Specification portable tank manufactured prior to January 1, 1992 that is equipped with a non-reclosable pressure relief device may continue in service for the hazardous materials for which it is authorized. Except for DOT Specification 56 and 57 portable tanks, any DOT Specification portable tank manufactured after January 1, 1992 used for materials meeting the definition for Division 6.1 liquids Packing Group I or II, Class 2 gases, or Class 3 or 4 liquids must be equipped with a reclosing pressure relief valve having adequately sized venting capacity.

(h) *Additional requirements for specific modal transport.* In addition to other applicable requirements, the following apply:

(1) A portable tank containing a hazardous material may not be loaded on a highway or rail transport vehicle unless loaded entirely within the horizontal outline thereof, without overhang or projection of any part of the tank assembly. In addition, for unloading a portable tank, see § 177.834(h) of this subchapter.

(2) A portable tank used for the transportation of flammable liquids by rail may not be fitted with non-reclosing pressure relief devices except in series with reclosing pressure relief valves.

(3) A portable tank or Specification 106A or 110A multi-unit tank car containing a hazardous material may not be offered for transportation aboard a passenger vessel unless:

(i) The vessel is operating under a change to its character of vessel certification as defined in § 171.8 of this subchapter; and

(ii) The material is permitted to be transported aboard a passenger vessel in the § 172.101 Table of this subchapter.

(i) *Additional general commodity specific requirements.* In addition to other applicable requirements, the following requirements apply:

(1) Each uninsulated portable tank used for the transportation of liquefied compressed gases must have an exterior surface finish that is significantly reflective, such as a light-reflecting color if painted, or a bright reflective metal or other material if unpainted.

(2) If a hazardous material is being transported in a molten state, the portable tank must be thermally insulated with suitable insulation material of sufficient thickness that the overall thermal conductance is not more than 0.080 Btu per hour per square foot per degree Fahrenheit differential.

(j) *Additional requirements for portable tanks other than IM specification and UN portable tanks.* (1) The bursting strength of any piping and fittings must be at least four times the design pressure of the tank, and at least four times the pressure to which, in any instance, it may be subjected in service by the action of a pump or other device (not including safety relief valves) that may subject piping to pressures greater than the design pressure of the tank.

(2) Pipe joints must be threaded, welded or flanged. If threaded pipe is used, the pipe and pipe fittings must not be lighter than (Schedule 80) weight. Non-malleable metals must not be used in the construction of valves or fittings. Where copper tubing is permitted, joints must be brazed or be of equally strong metal union type. The melting point of brazing material may not be lower than 1,000 °F (537.8°C). The method of joining tubing must not decrease the strength of the tubing such as by the cutting of threads.

(3) Non-malleable metals may not be used in the construction of valves or fittings.

(4) Suitable provision must be made in every case to allow for expansion, contraction, jarring and vibration of all pipe. Slip joints may not be used for this purpose.

(5) Piping and fittings must be grouped in the smallest practicable space and must be protected from damage as required by the specification.

(6) All piping, valves and fittings on every portable tank must be leakage tested with gas or air after installation and proved tight at not less than the design pressure of the portable tank on which they are used. In the event of replacement, all such piping, valves, or fittings so replaced must be tested in accordance with the requirements of

this section before the portable tank is returned to transportation service. The requirements of this section apply to all hoses used on portable tanks, except that hoses may be tested either before or after installation on the portable tank.

(7) All materials used in the construction of portable tanks and their appurtenances may not be subject to destructive attack by the contents of the tank.

(8) All parts of the portable tanks and appurtenances for anhydrous ammonia must be steel. No aluminum, copper, silver, zinc, nor their alloys may be used. Brazed joints may not be used.

(9) Each outlet of a portable tank used for the transportation of liquefied compressed gases, except carbon dioxide, must be provided with a suitable automatic excess-flow valve (see definition in § 178.337-1(g) of this subchapter). These valves must be located inside the portable tank or at a point outside the portable tank where the line enters or leaves the portable tank. The valve seat must be located inside the portable tank or may be located within a welded flange or its companion flange, or within a nozzle or within a coupling. The installation must be made in such a manner as to reasonably assure that any undue strain which causes failure requiring functioning of the valve shall cause failure in such a manner that it will not impair the operation of the valve.

(i) Safety device connections and liquid level gauging devices that are constructed so that the outward flow of tank contents will not exceed that passed by an opening of 0.1397 cm (0.0550 inches) are not required to be equipped with excess-flow valves.

(ii) An excess-flow valve must close automatically if the flow reaches the rated flow of gas or liquid specified by the original valve manufacturer when piping mounted directly on the valve is sheared off before the first valve, pump, or fitting downstream from the excess flow valve.

(iii) An excess-flow valve may be designed with a by-pass, not to exceed a 0.1016 cm (0.040 inches) diameter opening to allow equalization of pressure.

(iv) Filling and discharge lines must be provided with manually operated shut-off valves located as close to the tank as practical. The use of "Stop-Check" valves to satisfy with one valve the requirements of this section is forbidden.

(10) Each portable tank used for carbon dioxide and nitrous oxide must be lagged with a suitable insulation material of such thickness that the overall thermal conductance is not more

than 0.08 Btu per square foot per degree Fahrenheit differential in temperature per hour. The conductance must be determined at 60° Fahrenheit. Insulation material used on portable tanks for nitrous oxide must be noncombustible.

(11) A refrigerating and/or heating coil or coils must be installed in portable tanks used for carbon dioxide and nitrous oxide. Such coils must be tested externally to at least the same pressure as the test pressure of the portable tank. The coils must also be tested internally to at least twice the working pressure of the heating or refrigerating system to be used, but in no case less than the test pressure of the portable tank. Such coils must be securely anchored. The refrigerant or heating medium to be circulated through the coil or coils must be such as to cause no adverse chemical reaction with the portable tank or its contents in the event of leakage.

**§ 173.32a [Removed]**

26. § 173.32a would be removed.

**§ 173.32b [Removed]**

27. § 173.32b would be removed.

**§ 173.32c [Removed]**

28. § 173.32c would be removed.

29. In § 173.61, paragraph (e)(3) would be revised and a new paragraph (e)(8) would be added to read as follows:

**§ 173.61 Mixed packaging requirements.**

\* \* \* \* \*

(e) \* \* \*

(3) Explosives of compatibility group S may be packaged together with explosives of all other compatibility groups except A and L, and the entire package shall be treated as belonging to any of the packaged compatibility groups except S.

\* \* \* \* \*

(8) Explosive articles of compatibility groups C, D, E and G, except for fireworks and articles requiring special packaging, may be packaged together and the entire package shall be treated as belonging to compatibility group E.

**§ 173.62 [Amended]**

30. In § 173.62, in paragraph (c), in the Explosives Packing Instructions Table, in the fourth column, the following changes would be made in appropriate packaging specification number order:

a. For packing instruction entries, 112(a), 112(b), 112(c), 113, 115, 116, 130, 131, 134, 135, 136, 138, 140, 141, 142 and 144, under the word "Drums", the wording "plywood (1D)" would be added in the alpha-numeric order of the parenthetical.



b. For the packing instruction entries, 112(c), 113, 115, 134, 138 and 140, under the word "Drums", the wording "plastics, removable head (1H2)" would be added in the alpha-numeric order of the parenthetical.

c. For the packing instruction entries, 134 and 138, under the word "Drums", the wording "fiberboard (1G)" would be added in the alpha-numeric order of the parenthetical.

d. For the packing instruction entry, 144, under the wording "plastics, expanded (4H1)", the word "Drums." would be added and under the new word "Drums.", the wording, "steel, removable head (1A2)", "Aluminum, removable head (1B2)" and "plastics, removable head (1H2)" would be added in the alpha-numeric order of the parenthetical.

e. For the packing instruction entry, 144, under the word "Boxes", the wording "plastics, solid (4H2)" would be added in the alpha-numeric order of the parenthetical.

f. For the packing instruction entries, 112(c) and 113, under the word "Boxes", the wording "aluminum (4B)" would be added in the alpha-numeric order of the parenthetical.

31. In § 173.128, paragraph (d)(1)(ii) would be revised to read as follows:

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

\* \* \* \* \*

(a) \* \* \*

(1) \* \* \*

(ii) A mixture of organic peroxides prepared according to § 173.225(c)(3); or

\* \* \* \* \*

32. In § 173.150, paragraph (d)(2) is revised to read as follows:

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

\* \* \* \* \*

(d) \* \* \*

(2) Is in an inner packaging of five liters (1.3 gallons) or less, and is not transported as checked or carry-on baggage by passenger aircraft, except as provided in § 175.10(a)(17) of this subchapter; or

\* \* \* \* \*

33. In § 173.162, paragraph (a) introductory text and (a)(1) would be revised to read as follows:

**§ 173.162 Gallium.**

(a) Except when packaged in cylinders or steel flasks, gallium must

be packaged in packagings which meet the requirements of part 178 of this subchapter at the Packing Group I performance level for transportation by aircraft, and at the Packing Group III performance level for transport by highway, rail or vessel, as follows:

(1) In combination packagings intended to contain liquids consisting of glass, earthenware or rigid plastic inner packagings with a maximum net mass of 15 kg (33 pounds) each. The inner packagings must be packed in wood boxes (4C1, 4C2, 4D, 4F), fiberboard boxes (4G), plastic boxes (4H1, 4H2), fiber drums (1G) or removable head steel and plastic drums or jerricans (1A2, 1H2, 3A2 or 3H2) with sufficient cushioning materials to prevent breakage. Either the inner packagings or the outer packagings must have inner liners or bags of strong leakproof and puncture-resistant material impervious to the contents and completely surrounding the contents to prevent it from escaping from the package, irrespective of its position.

\* \* \* \* \*

34. In § 173.185, a new sentence would be added at the end of paragraph (a), paragraphs (b) introductory text, (b)(1), (b)(2), (b)(5), (c)(1), (c)(2), and (c)(3) would be revised, and a heading would be added to paragraph (c) to read as follows:

**§ 173.185 Lithium batteries and cells.**

(a) \* \* \* For the purposes of this subchapter, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell, except in the case of a lithium ion cell where the "equivalent lithium content" in grams is calculated to be 0.3 times the rated capacity in ampere-hours.

(b) *Exceptions.* Cells and batteries are not subject to the requirements of this subchapter if they meet the following requirements:

(1) Each cell with a liquid cathode may contain no more than 0.5 g of lithium content. Each cell with a solid cathode may contain no more than 1.0 g lithium content. Each lithium ion cell may contain no more than 1.5 g of equivalent lithium content;

(2) Each battery with a liquid cathode may contain an aggregate quantity of no more than 1.0 g lithium content. Each battery with a solid cathode may contain an aggregate quantity of no more than 2.0 g of lithium content. Each lithium-ion battery may contain an

aggregate quantity of no more than 8.0 grams of equivalent lithium content;

\* \* \* \* \*

(5) If when fully charged, the aggregate lithium content of the anodes in a liquid cathode battery is more than 0.5 g, or the aggregate lithium content of the anodes in a solid cathode battery is more than 1.0 g, then the battery may not contain a liquid or gas that is a hazardous material according to this subchapter unless the liquid or gas, if free, would be completely absorbed or neutralized by other materials in the battery.

(c) *Additional exceptions.* \* \* \*

(1) The lithium content of the anode of each cell, when fully charged, is not more than 5 g;

(2) The aggregate lithium content of the anodes of each battery, when fully charged, is not more than 25 g;

(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 (incorporated by reference, 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; and

\* \* \* \* \*

35. In § 173.224, paragraph (b)(4) would be revised; in the table following paragraph (b)(7), the following entry would be added in the appropriate alphabetical order; and paragraph (d) would be removed, 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 are authorized as specified in § 173.225(d) for Type F self-reactive substances. Additional bulk packagings are authorized if approved by the Associate Administrator.

\* \* \* \* \*

(7) \* \* \*

SELF-REACTIVE SUBSTANCES

Self-reactive substance (1)	Identifica- tion No. (2)	Concentration— (%) (3)	Packing method (4)	Control tem- perature—(°C) (5)	Emergency temperature (6)	Notes (7)
2,2'-Azodi(isobutyronitrile) as a water based paste	3224	≤50%	OP6			

\* \* \* \* \*  
36. In § 173.225, in paragraph (b), in the Organic Peroxide Table, the following entries would be removed and added in the appropriate alphabetical order; in Column (8), "7" and "10" would be removed each place they

appear; and in the "NOTES" immediately following the Table, Notes "7" and "10" would be removed and reserved and Notes "26" and "27" would be added in the appropriate numerical order; and paragraphs (e)

introductory text, (e)(3), and (e)(5) would be revised to read as follows:

**§ 173.225 Packaging requirements and other provisions for organic peroxides.**

\* \* \* \* \*  
(b) \* \* \*

ORGANIC PEROXIDE TABLE

Technical name (1)	ID number (2)	Concentra- tion (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Note (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emer- gency (7b)	
[REMOVE:]										
tert-Amyl peroxybenzoate	UN3105	≤96	≥4				OP7			
tert-Butyl peroxy-2-ethylhexanoate	UN3119	≤32	≥68				Bulk	10	15	14
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3117	≤42					OP8	0	10	
tert-Butyl peroxyneohexanoate	UN3115	≤77	≥23				OP7	10	15	
tert-Butyl peroxy-pivalate	UN3119	≤27	≥73				Bulk	-5	5	14
Cumyl peroxyneohexanoate	UN3115	≤77	≥23				OP7	0	10	
Cyclohexanone peroxide(s)	UN3105	≤72	≥28				OP7			5
1,1-Di-(tert-butylperoxy)-3,5,5-trimethylcyclohexane	UN3101	>90-100					OP5			
1,1-Di-(tert-butylperoxy)-3,5,5-trimethylcyclohexane	UN3103	>57-90	≥10				OP5			
1,1-Di-(tert-butylperoxy)-3,5,5-trimethylcyclohexane	UN3106	≤57		≥43			OP7			
1,1-Di-(tert-butylperoxy)-3,5,5-trimethylcyclohexane	UN3107	≤57	≥43				OP8			
1,1-Di-(tert-butylperoxy)-3,5,5-trimethylcyclohexane	UN3107	≤32	≥26	≥42			OP8			
Di-(2-ethylhexyl) peroxydicarbonate	UN3115	≤77	≥23				OP7	-15	-5	
Diisopropyl peroxydicarbonate	UN3115	≤52	≥48				OP7	-10	0	
2,5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane	UN3115	≤100					OP7	20	25	
Dimyristyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42					IBC	15	25	10
Di-n-propyl peroxydicarbonate	UN3113	≤100					OP4	-25	-15	
Di-(3,5,5-trimethylhexanoyl) peroxide	UN3119	≤38	≥62				Bulk	-10	0	14
Isopropyl sec-butyl peroxydicarbonate [and] Di-sec- butyl peroxy-dicarbonate [and] Di-isopropyl peroxydicarbonate.	UN3115	≤32 +≤15-18 +≤12-15	≥38				OP7	-20	-10	
2,4,4-Trimethylpentyl-2-peroxyneodecanoate	UN3115	≤72	≥28				OP7	-5	5	
2,4,4-Trimethylpentyl-2-peroxyneodecanoate [as a sta- ble dispersion in water].	UN3119	≤52					OP8	-5	5	
2,4,4-Trimethylpentyl-2-peroxy phenoxyacetate	UN3115	≤37	≥63				OP7	-10	0	

## ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Note
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
<b>[ADD:]</b>										
tert-Amyl peroxybenzoate .....	UN3103	≤100					OP5			
* * *		*		*			*		*	
tert-Butyl peroxy-2-ethylhexanoate .....	UN3119	≤32		≥68			Bulk	15	20	14
* * *		*		*			*		*	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3117	≤52					OP8	0	10	
* * *		*		*			*		*	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤42					IBC	-5	5	10
* * *		*		*			*		*	
tert-Butyl peroxyneodecanoate .....	UN3119	≤32	≥68				IBC	0	10	10
* * *		*	*	*			*		*	
tert-Butyl peroxyneohexanoate .....	UN3115	≤77	≥23				OP7	0	10	
* * *		*	*	*			*		*	
tert-Butyl peroxy-pivalate .....	UN3119	≤27		≥73			Bulk	5	10	14
* * *		*		*			*		*	
Cumyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52					IBC	-15	-5	
* * *		*		*			*		*	
Cumyl peroxyneohexanoate .....	UN3115	≤77	≥23				OP7	-10	0	
* * *		*	*	*			*		*	
Cyclohexanone peroxide(s) .....	UN3105	≤72	≥28				OP7			5
* * *		*	*	*			*		*	
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 .....	UN3105	≤77		≥23			OP7			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane .....	UN3106	≤57			≥43		OP7			
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			
* * *		*	*	*			*		*	
2,2-Di-(4,4-di-(tert-butylperoxy) cyclohexyl) propane .....	UN3107	≤ 22		≥78			OP8			
* * *		*		*			*		*	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3119	≤52					IBC	-20	-10	
* * *		*		*			*		*	
Di-(2-ethoxyethyl) peroxydicarbonate .....	UN3115	≤52		≥48			OP7	-10	0	
* * *		*		*			*		*	
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	
* * *		*		*			*		*	
Diisopropyl peroxydicarbonate .....	UN3115	≤52		≥48			OP7	-20	-10	
* * *		*		*			*		*	
Di-(3-methoxybutyl) peroxydicarbonate .....	UN3115	≤ 52		≥48			OP7	-5	5	
* * *		*		*			*		*	
Di-(3-methylbenzoyl) peroxide+Benzoyl (3-methylbenzoyl) peroxide+Dibenzoyl peroxide.	UN3115	≤ 20+ ≤18+ ≤4		≥58			OP7	35	40	
* * *		*		*			*		*	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane .....	UN3108	≤77			≥23		OP8			
* * *		*		*	*		*		*	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3 .....	UN3101	>86-100					OP5			
* * *		*		*			*		*	
Dimyristyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42					IBC	15	20	10
* * *		*		*			*		*	
Di-n-propyl peroxydicarbonate .....	UN3113	≤100					OP3	-25	-15	
* * *		*		*			*		*	
Di-n-propyl peroxydicarbonate .....	UN3113	≤77		≥23			OP5	-20	-10	
* * *		*		*			*		*	
tert-Hexyl peroxyneodecanoate .....	UN3115	≤71	≥29				OP7	0	10	
* * *		*	*	*			*		*	
tert-Hexyl peroxy-pivalate .....	UN3115	≤72		≥28			OP7	10	15	
* * *		*		*			*		*	
Methyl ethyl ketone peroxide(s) .....	UN3105	≤37	≥55			≥8	OP7 26			

ORGANIC PEROXIDE TABLE—Continued

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Note (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
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	.....	.....	.....	IBC -5		-5	-10	
1,1,3,3-Tetramethylbutyl peroxy phenoxyacetate	UN3115	≤37	.....	≥63	.....	OP7		-10	0	.....
3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane	UN3105	≤42	.....	≥58	.....	OP7		.....	.....	27

Notes:

- \* \* \* \* \*
- 26. Available oxygen must be ≤ 10%.
- 27. Available oxygen must be ≤ 7.6%.
- \* \* \* \* \*

(e) Bulk packagings for organic peroxides. The following bulk packagings are authorized:

(3) Portable tanks. The following requirements apply to portable tanks intended for the transport of Type F organic peroxides or Type F self-reactive substances. DOT 51, 57, IM 101 portable tanks, and UN portable tanks that conform to the requirements of T23 (see § 172.102(c)(7) of this subchapter), when T23 is specified in Column (7) of the § 171.101 Table of this subchapter for the Type F organic peroxide or Type F self-reactive substance. Type F organic peroxide or self-reactive substance formulations other than those indicated in T23 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) Portable tanks must be fitted with temperature-sensing devices.
- (iii) Portable tanks 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 start-to-discharge pressure must in no case be such that liquid would escape from the pressure relief devices if the portable tank were overturned.

(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<sup>2</sup>)

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

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

Where:  
U = K/L = heat transfer coefficient of the insulation (W·m<sup>-2</sup>·K<sup>-1</sup>); where K = heat conductivity of insulation layer (W·m<sup>-1</sup>·K<sup>-1</sup>), and L = thickness of insulation layer (m).  
T<sub>PO</sub> = 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 (e)(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 (e)(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

(incorporated by reference, see § 171.7 of this subchapter).

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

(ix) 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.

(x) 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.

(xi) 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.

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

(xiii) 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.

(5) IBCs. IBCs are authorized subject to the conditions and limitations of this section provided the IBC type is authorized according to IB52 (see 172.102(c)(4) of this subchapter), as applicable, and the IBC conforms to the requirements in part 178 of this subchapter at the Packing Group II performance level. The following additional requirements also apply:

- (i) 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.

(ii) To prevent explosive rupture of metal IBCs or composite IBCs with 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 (e)(3)(v) of this section. The control and emergency temperatures specified in IB52 are based on a non-insulated IBC.

37. In § 173.240, paragraphs (c) and (d) would be revised to read as follows:

**§ 173.240 Bulk packagings for certain low hazard solid materials.**

\* \* \* \* \*

(c) *Portable tanks and closed bulk bins.* DOT 51, 56, 57 and 60 portable tanks; IMO type 1, 2 and 5, and IM 101 and IM 102 portable tanks; UN portable tanks; marine portable tanks conforming to 46 CFR part 64; and sift-proof non-DOT Specification portable tanks and closed bulk bins are authorized.

(d) *IBCs.* IBCs are authorized subject to the conditions and limitations of this section provided the IBC type is authorized according to the IBC packaging code specified for the specific hazardous material in Column (7) of the § 172.101 Table of this subchapter and the IBC conforms to the requirements in part 178 of this subchapter at the Packing Group performance level as specified in Column (5) of the § 172.101 Table of this subchapter for the material being transported.

(1) IBCs may not be used for the following hazardous materials:

- (i) Packing Group I liquids; and
  - (ii) Packing Group I solids that may become liquid during transportation.
- (2) The following IBCs may not be used for Packing Group II and III solids that may become liquid during transportation:

- (i) Wooden: 11C, 11D and 11;
- (ii) Fiberboard: 11G;
- (iii) Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2; and
- (iv) Composite: 11HZ2 and 21HZ2.

38. In § 173.241, paragraphs (c) and (d) would be revised to read as follows:

**§ 173.241 Bulk packagings for certain low hazard liquid and solid materials.**

\* \* \* \* \*

(c) *Portable tanks.* DOT Specification 51, 56, 57 and 60 portable tanks; IMO type 1, 2 and 5, and IM 101 and IM 102 portable tanks; UN portable tanks; marine portable tanks conforming to 46

CFR part 64; and non-DOT Specification portable tanks suitable for transport of liquids are authorized.

(d) *IBCs.* IBCs are authorized subject to the conditions and limitations of this section provided the IBC type is authorized according to the IBC packaging code specified for the specific hazardous material in Column (7) of the § 172.101 Table of this subchapter and the IBC conforms to the requirements in part 178 of this subchapter at the Packing Group performance level as specified in Column (5) of the § 172.101 Table for the material being transported.

(1) IBCs may not be used for the following hazardous materials:

- (i) Packing Group I liquids; and
- (ii) Packing Group I solids that may become liquid during transportation.

(2) The following IBCs may not be used for Packing Group II and III solids that may become liquid during transportation:

- (i) Wooden: 11C, 11D and 11F;
- (ii) Fiberboard: 11G;
- (iii) Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2; and
- (iv) Composite: 11HZ2 and 21HZ2.

39. In § 173.242, paragraphs (c) introductory text and (d) would be revised to read as follows:

**§ 173.242 Bulk packagings for certain medium hazard liquids and solids, including solids with dual hazards.**

\* \* \* \* \*

(c) *Portable tanks.* DOT Specification 51, 56, 57 and 60 portable tanks; Specification IM and UN portable tanks when a T Code is specified in Column (7) of the § 172.101 Hazardous Materials Table for a specific hazardous material; and marine portable tanks conforming to 46 CFR part 64 are authorized. DOT Specification 57 portable tanks used for the transport by vessel of Class 3, Packaging Group II materials must conform to the following:

\* \* \* \* \*

(d) *IBCs.* IBCs are authorized subject to the conditions and limitations of this section provided the IBC type is authorized according to the IBC packaging code specified for the specific hazardous material in Column (7) of the § 172.101 Table of this subchapter and the IBC conforms to the requirements in part 178 of this subchapter at the Packing Group performance level as specified in Column (5) of the § 172.101 Table of this subchapter for the material being transported.

(1) IBCs may not be used for the following hazardous materials:

- (i) Packing Group I liquids; and
- (ii) Packing Group I solids that may become liquid during transportation.

(2) The following IBCs may not be used for Packing Group II and III solids that may become liquid during transportation:

- (i) Wooden: 11C, 11D and 11F;
- (ii) Fiberboard: 11G;
- (iii) Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2; and
- (iv) Composite: 11HZ2 and 21HZ2.

\* \* \* \* \*

40. In § 173.243, paragraphs (c) and (d) would be revised to read as follows:

**§ 173.243 Bulk packaging for certain high hazard liquids and dual hazard materials which pose a moderate hazard.**

\* \* \* \* \*

(c) *Portable tanks.* DOT Specification 51 and 60 portable tanks; UN portable tanks when a T code is specified in Column (7) of the § 172.101 Table of this subchapter for a specific hazardous material; and marine portable tanks conforming to 46 CFR part 64 with design pressure of at least 172.4 kPa (25 psig) are authorized.

(d) *IBCs.* IBCs are authorized subject to the conditions and limitations of this section provided the IBC type is authorized according to the IBC packaging code specified for the specific hazardous material in Column (7) of the § 172.101 Table of this subchapter and the IBC conforms to the requirements in part 178 of this subchapter at the Packing Group performance level as specified in Column (5) of the § 172.101 Table of this subchapter for the material being transported.

(1) IBCs may not be used for the following hazardous materials:

- (i) Packing Group I liquids; and
- (ii) Packing Group I solids that may become liquid during transportation.

(2) The following IBCs may not be used for Packing Group II and III solids that may become liquid during transportation:

- (i) Wooden: 11C, 11D and 11F;
- (ii) Fiberboard: 11G;
- (iii) Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2; and
- (iv) Composite: 11HZ2 and 21HZ2.

\* \* \* \* \*

41. In § 173.247, paragraph (c) would be revised to read as follows:

**§ 173.247 Bulk packaging for certain elevated temperature materials (Class 9) and certain flammable elevated temperature materials (Class 3).**

\* \* \* \* \*

(c) *Portable tanks.* DOT Specification 51, 56, 57 and 60 portable tanks; IM 101, 102 portable tanks; UN portable tanks; marine portable tanks conforming to 46 CFR part 64; metal IBCs and non-

specification portable tanks equivalent in structural design and accident damage resistance to specification packagings are authorized.

\* \* \* \* \*

42. In § 173.306, paragraph (a)(4)(iii) would be revised to read as follows:

**§ 173.306 Limited quantities of compressed gases.**

(a) \* \* \*

(4) \* \* \*

(iii) Non-pressurized gases, flammable must be packed in hermetically-sealed glass or metal inner packagings of not more than 5 L (1.3 gallons) overpacked in a strong outer packaging.

\* \* \* \* \*

43. In § 173.315, the text of paragraph (a) preceding the table and paragraphs (i)(1)(iii), (i)(3), (i)(4) and (i)(8) would be revised and paragraph (i)(7) would be removed and reserved 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 tank provision T50 in § 172.102 of this subchapter. 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, § 173.33 and subpart E or subpart G of part 180 of this subchapter; for cryogenic liquids, also see § 173.326 and § 173.328. Except for UN portable tanks, a liquefied compressed gas must be loaded and offered for transportation in accordance with the following table:

\* \* \* \* \*

(i) \* \* \*

(1) \* \* \*

(iii) For an insulated tank, the required relieving capacity of the relief valves must be the same as for an uninsulated tank, unless the insulation will remain in place and will be effective under fire conditions. In this case, except for UN portable tanks, each insulated tank must be covered by a sheet metal jacket of not less than 16 gauge thickness. For UN portable tanks where the relieving capacity of the valves has been reduced on the basis of the insulation system, the insulation system must remain effective at all temperatures less than 649 °C (1200.2 °F) and be jacketed with a material

having a melting point of 700 °C (1292.0 °F) or greater.

\* \* \* \* \*

(3) Each safety relief valve on a portable tank, other than a UN portable tank, must be set to start-to-discharge at pressure no higher than 110% of the tank design pressure and no lower than the design pressure specified in paragraph (a) of this section for the gas transported. For UN portable tanks used for liquefied compressed gases and constructed in accordance with the requirements of § 178.276 of this subchapter, the pressure relief device(s) must conform to § 178.276(e) of this subchapter.

(4) Except for UN portable tanks, each safety relief valve must be plainly and permanently marked with the pressure in p.s.i.g. at which it is set to discharge, with the actual rate of discharge of the device in cubic feet per minute of the gas or of air at 60 °F (15.6 °C) and 14.7 p.s.i.a., and with the manufacturer's name or trade name and catalog number. The start-to-discharge valve must be visible after the valve is installed. The rated discharge capacity of the device must be determined at a pressure of 120% of the design pressure of the tank. For UN portable tanks, each pressure relief device must be clearly and permanently marked as specified in § 178.274(f)(1) of this subchapter.

\* \* \* \* \*

(8) Each safety relief valve outlet must be provided with a protective device to prevent the entrance and accumulation of dirt and water. This device must not impede flow through the valve. Pressure relief devices must be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure.

\* \* \* \* \*

**PART 175—CARRIAGE BY AIRCRAFT**

44. The authority citation for Part 175 would continue to read as follows:

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

45. In § 175.10, paragraphs (a)(10) and (a)(16) would be revised, and paragraph (a)(17) would be added to read as follows:

**§ 175.10 Exceptions.**

(a) \* \* \*

(10) Safety matches or a lighter intended for use by an individual when carried on one's person. However,

lighters containing unabsorbed liquid fuel (other than liquefied gas), lighter fuel, and lighter refills are not permitted on one's person or in checked or carry-on baggage.

\* \* \* \* \*

(16) Perfumes and colognes, purchased through duty-free sales, carried by passengers or crew in carry-on baggage.

(17) Alcoholic beverages containing—

(i) Not more than 24% alcohol by volume; or

(ii) More than 24% and not more than 70% alcohol by volume when in retail packagings not exceeding 5 liters (1.3 gallons) carried by a crewmember or passenger in checked or carry-on baggage, with a total net quantity per person of 5 liters (1.3 gallons) for such beverages.

\* \* \* \* \*

46. In § 175.33, paragraph (a) introductory text would be revised to read as follows:

**§ 175.33 Notification of pilot-in-command.**

(a) Except as provided in § 175.10, when a hazardous material subject to the provisions of this subchapter is carried in an aircraft, the operator of the aircraft must provide the pilot-in-command with accurate and legible written information as early as practicable before departure of the aircraft, which specifies at least the following:

\* \* \* \* \*

47. Section 175.78 would be revised to read as follows:

**§ 175.78 Stowage compatibility of cargo.**

(a) For stowage on an aircraft, in a cargo facility, or in any other area at an airport designated for the stowage of hazardous materials, packages containing hazardous materials which might react dangerously with one another may not be placed next to each other or in a position that would allow a dangerous interaction in the event of leakage.

(b) As a minimum, the segregation instructions prescribed in the following Segregation Table must be followed to maintain acceptable segregation between packages containing hazardous materials with different hazards. The Segregation Table instructions in paragraph (c) of this section apply whether or not the class or division is the primary or subsidiary risk. The Segregation Table follows:

SEGREGATION TABLE

Hazard label	Class or division							
	1	2	3	4.2	4.3	5.1	5.2	8
1 .....	Note 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
1 .....	Note 2	.....	.....	.....	.....	.....	.....	.....
2 .....	Note 2	.....	.....	.....	.....	.....	.....	.....
3 .....	Note 2	.....	.....	.....	.....	X	.....	.....
4.2 .....	Note 2	.....	.....	.....	.....	X	.....	.....
4.3 .....	Note 2	.....	.....	.....	.....	X	.....	X
5.1 .....	Note 2	.....	X	X	.....	.....	.....	.....
5.2 .....	Note 2	.....	.....	.....	.....	.....	.....	.....
8 .....	Note 2	.....	.....	.....	X	.....	.....	.....

(c) Instructions for using the Segregation Table are as follows:

(1) The dots at the intersection of a row and column indicate that no restrictions apply.

(2) The letter "X" at the intersection of a row and column indicates that packages containing these classes of hazardous materials may not be stowed next to or in contact with each other, or in a position which would allow interaction in the event of leakage of the contents.

(3) Note 1. "Note 1" at the intersection of a row and column means the following:

(i) For explosives in compatibility groups A through K and N—

(A) Packages bearing the same compatibility group letter and the same division number may be stowed together.

(B) Explosives of the same compatibility group, but different divisions may be stowed together provided the whole shipment is treated as belonging to the division having the smaller number. However, when explosives of Division 1.5 Compatibility Group D are stowed together with explosives of Division 1.2 Compatibility Group D, the whole shipment must be treated as Division 1.1, Compatibility Group D.

(C) Packages bearing different compatibility group letters may not be stowed, whether or not they belong to the same division, except as provided in paragraphs (c)(3)(ii) and (iii) of this section.

(ii) Explosives in Compatibility Group L may not be stowed with explosives in other compatibility groups. They may only be stowed with the same type of explosives in Compatibility Group L.

(iii) Explosives of Division 1.4, Compatibility Group S, may be stowed with explosives of all compatibility groups except for Compatibility Groups A and L.

(iv) Other than explosives of Division 1.4, Compatibility Group S (see paragraph (c)(3)(iii) of this section), and

Compatibility Groups C, D and E that may be stowed together, explosives that do not belong in the same compatibility group may not be stowed together.

(A) Any combination of substances in Compatibility Groups C and D must be assigned to the most appropriate compatibility group shown in the § 172.101 Hazardous Materials Table.

(B) Explosives in Compatibility Group N may be stowed together with explosives in Compatibility Groups C, D and E when the combination is assigned Compatibility Group D.

(4) Note 2. "Note 2" at the intersection of a row and column means that other than explosives of Division 1.4, Compatibility Group S, explosives may not be stowed together with that class.

(5) Packages containing hazardous materials with multiple hazards in the class or divisions, which require segregation in accordance with the Segregation Table need not be segregated from other packages bearing the same UN number.

(6) A package labeled "BLASTING AGENT" may not be stowed next to or in a position that will allow contact with a package of special fireworks or railway torpedoes.

48. In § 175.85 paragraph (a) would be revised to read as follows:

**§ 175.85 Cargo location.**

(a) Except as provided in § 175.10, no person may carry a hazardous material subject to the requirements of this subchapter in the cabin of a passenger-carrying aircraft or on the flight deck of any aircraft. Hazardous materials may be carried in a main deck cargo compartment of a passenger aircraft provided that the compartment is inaccessible to passengers and that it meets all certification requirements for a Class B aircraft cargo compartment in 14 CFR 25.857(b) or for a Class C aircraft cargo compartment in 14 CFR 25.857(c).

\* \* \* \* \*

**PART 176—CARRIAGE BY VESSEL**

49. The authority citation for part 176 would continue to read as follows:

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

50. In § 176.2, the following definition would be added in appropriate alphabetical order to read as follows:

**§ 176.2 Definitions.**

\* \* \* \* \*

*INF cargo* means packaged irradiated nuclear fuel, plutonium or high-level radioactive wastes as those terms are defined in the "International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships" (incorporated by reference, see § 171.7 of this subchapter).

\* \* \* \* \*

51. In § 176.63, a new paragraph (e) would be added 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 clean, substantial, weatherproof box structure which can be secured to the ship's structure and includes a closed freight container, a closed vehicle, a closed rail wagon or a portable magazine. When this stowage is specified, stowage in small compartments such as deckhouses and mast lockers or oversized weatherproof packages (overpacks) are acceptable alternatives. The floor of any closed cargo transport unit or compartment shall be constructed of wood, close boarded or arranged so that goods are stowed on sparrred gratings, wooden pallets or dunnage. Provided that the necessary additional specifications are met, a closed cargo transport unit may be used for Class 1 (explosive) magazine stowage type "A," "B" or "C," but not as a portable magazine.

52. In § 176.84, in paragraph (b) Table of provisions, the entries "4" and "5"

would be revised, paragraph (c)(1) would be revised, in paragraph (c)(2), the List of Notes would be revised and paragraph (c)(3) would be removed to read as follows:

§ 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.

\* \* \* \* \*

(b) Table of provisions:

Table with 2 columns: Code, Provisions. Row 4: Stow "Separated from" liquid organic materials. Row 5: Stow "Separated from" powdered metals and their compounds.

Table with 2 columns: Code, Provisions. Row 1: (c) \* \* \*

(1) Explosive substances and explosive articles must be stowed in accordance with Column (10A) and Column (10B) of the § 172.101 Table of this subchapter.

Table with 2 columns: Notes, Provisions. Lists stowage requirements for various codes from 5E to 27E.

§ 176.128 [Amended]

53. In § 176.128, in paragraph (c), the word "UN 0600" would be revised to read "UN 0060".

§ 176.136 [Amended]

54. In § 176.136, in paragraph (e), the word "portable" would be removed.

55. In § 176.142, paragraph (a) would be 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 alkyls: UN3053, Division 4.2
Methyl phosphorous dichloride: NA2845, Division 6.1
Nickel carbonyl: UN1259, Division 6.1
Pyrophoric liquid, inorganic, n.o.s.: UN3194, Division 4.2
Pyrophoric liquids, organic, n.o.s.: UN2845, Division 4.2

Pyrophoric organometallic compound, water-reactive, n.o.s.: UN3203, Division 4.2

\* \* \* \* \*

56. A new section § 176.720 would be added to subpart M to read as follows:

§ 176.720 Requirements for carriage of INF cargo in international transportation.

(a) A vessel carrying INF cargo in international transportation must meet the requirements of the INF Code (incorporated by reference, see § 171.7 of this subchapter) in addition to all other applicable requirements of this subchapter.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

57. The authority citation for part 177 would continue to read as follows:

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

58. In § 177.848, paragraph (g)(3)(vi) would be revised to read as follows:

§ 177.848 Segregation of hazardous materials.

\* \* \* \* \*

- (g) \* \* \*
(3) \* \* \*

(vi) "6" means explosive articles in compatibility group G, other than fireworks and those requiring special handling, may be loaded, transported and stored with articles of compatibility groups C, D and E, provided no explosive substances are carried in the same vehicle.

\* \* \* \* \*

PART 178—SPECIFICATIONS FOR PACKAGINGS

59. The authority citation for part 178 would continue to read as follows:

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

60. A new section § 178.273 would be added to subpart H to read as follows:

§ 178.273 Approval of Specification IM portable tanks and UN portable tanks.

(a) Application for approval. (1) An owner or manufacturer of a portable tank shall apply for approval to a designated approval agency authorized to approve the portable tank in accordance with the procedures in subpart E, part 107 of this subchapter.

(2) Each application for approval must contain the following information:

- (i) Three complete copies of all engineering drawings, calculations, and



test data necessary to ensure that the design meets the relevant specification.

(ii) The manufacturer's serial number that will be assigned to each portable tank.

(iii) A statement as to whether the design type has been examined by any approval agency previously and judged unacceptable. Affirmative statements must be documented with the name of the approval agency, reason for nonacceptance, and the nature of modifications made to the design type.

(b) *Action by approval agency.* The approval agency shall perform the following activities:

(1) Review the application for approval to determine whether it is complete and conforms with the requirements of paragraph (a) of this section. If an application is incomplete, it will be returned to the applicant and the applicant will be informed in what respects the application is incomplete.

(2) Review all drawings and calculations to ensure that the design is in compliance with all requirements of the relevant specification. If the application is approved, one set of the approved drawings, calculations, and test data shall be returned to the applicant. The second and third (inspector's copy) sets of approved drawings, calculations, and test data shall be retained by the approval agency. Maintain drawings and approval records for as long as the portable tank remains in service. The drawings and records must be provided to DOT upon request.

(3) Witness all tests required for the approval of the portable tank specified in § 178.273 and part 180, subpart G, of this subchapter.

(4) Ensure, through appropriate inspection that each portable tank is fabricated in all respects in conformance with the approved drawings, calculations, and test data.

(5) Determine and ensure that the portable tank is suitable for its intended use and that it conforms to the requirements of this subchapter.

(6) For UN portable tanks intended for liquefied compressed gases and Division 6.1 liquids which meet the inhalation toxicity criteria (Zone A or B) as defined in § 173.132 of this subchapter, or that are designated as toxic by inhalation materials in the § 172.101 Table of this subchapter, the approval agency must ensure that:

(i) The portable tank has been constructed in accordance with the ASME Code, Section VIII, Division 1 (incorporated by reference, see § 171.7 of this subchapter). ASME Code, Section VIII, Division II or other design code may be used if approved by the

Associate Administrator (see § 178.274(b)(1));

(ii) All applicable provisions of the design and construction have been met to the satisfaction of the designated approval agency in accordance with the rules established in the ASME Code and that the portable tank meets the requirements of the ASME Code or other design code if approved by the Associate Administrator (see § 178.274(b)(1)), and all the applicable requirements specified in this subchapter;

(iii) The authorized inspector has carried out all the inspections specified by the rules established in the ASME Code; and

(iv) The portable tank is marked with a U stamp code symbol under the authority of an authorized independent inspector.

(7) For UN portable tanks the approval certificate must also include the following:

(i) The results of the applicable framework and rail impact test specified in part 180, subpart G, of this subchapter; and

(ii) The results of the initial inspection and test in § 180.605 of this subchapter.

(8) Upon successful completion of all requirements of this subpart, the approval agency shall:

(i) Apply its name, identifying mark or identifying number, and the date upon which the approval was issued, to the metal identification marking plate attached to the portable tank. Any approvals for UN portable tanks authorizing design or construction alternatives (Alternate Arrangements) approved by the Associate Administrator (see § 178.274(a)(2)) must be indicated on the plate as specified in § 178.274(i).

(ii) Issue an approval certificate for each portable tank or, in the case of a series of identical portable tanks manufactured to a single design type, for each series of portable tanks. The approval certificate must include all the information required to be displayed on the required metal identification plate required by § 178.270–14 for IM portable tanks, § 178.245–6 for specification 51 steel portable tanks, or § 178.274(i) for UN portable tanks. The approval certificate must attest that the approval agency designated to approve the portable tank has approved the portable tank in accordance with the procedures in subpart E, part 107 of this subchapter and that the portable tank is suitable for its intended purpose and meets the requirements of this subchapter. When a series of portable tanks is manufactured without change

in the design type, the certificate may be valid for the entire series of portable tanks representing a single design type. For UN portable tanks, the certificate must refer to the prototype test report, the hazardous materials or group of hazardous materials allowed to be transported, the materials of construction of the shell and lining (when applicable) and an approval number. The approval number must consist of the distinguishing sign or mark of the country ("USA" for the United States of America) where the approval was granted and a registration number.

(iii) Retain a copy of each approval certificate.

(9) The approval agency must remain independent from the manufacturer. The approval agency and the authorized inspector may be the same entity.

(c) *Manufacturers' responsibilities.* The manufacturer is responsible for compliance with the applicable specifications for the design and construction of portable tanks. In addition to responsibility for compliance, manufacturers are responsible for ensuring that the contracted approval agency and authorized inspector, if applicable, are qualified, reputable and competent. The manufacturer of a portable tank must:

(1) Comply with all the applicable requirements of the ASME Code (incorporated by reference, see § 171.7 of this subchapter) and of this subpart including, but not limited to, ensuring that the quality control, design calculations and required tests are performed and that all aspects of the portable tank meet the applicable requirements.

(2) Obtain and use a designated approval agency, if applicable, and obtain and use a DOT-designated approval agency to approve the design, construction and certification of the portable tank.

(3) Provide a statement in the manufacturers' data report attesting that each portable tank that is manufactured complies with the relevant specification and all the applicable requirements of this subchapter.

(4) Maintain records of the qualification of portable tanks for at least 5 years and provide copies to the approval agency and the owner of the tank. Provide records to the U.S. DOT upon request.

(d) *Denial of application for approval.* If an approval agency finds that a portable tank cannot be approved for any reason, it shall so notify the applicant in writing and shall provide the applicant with the reasons for which the approval is denied. A copy of the

notification letter shall be provided to the Associate Administrator. An applicant aggrieved by a decision of an approval agency may appeal the decision in writing within 90 days of receipt to the Associate Administrator.

(e) *Modifications to approved portable tanks.* (1) Prior to modification of any approved portable tank which may affect conformance of an IM or UN portable tank, which may involve a change to the design type or which may affect its ability to retain the hazardous material in transportation, the person desiring to make such modification shall inform the approval agency that issued the initial approval of the portable tank (or if unavailable another approval agency) of the nature of the modification and request approval of the modification. The owner or manufacturer shall supply the approval agency with three sets of all revised drawings, calculations, and test data relative to the intended modification.

(2) A statement as to whether the intended modification has been examined by any approval agency previously judged unacceptable. An affirmative statement must be documented with the name of the approving agency, the reason for nonacceptance, and the nature of changes made to the modification since its original rejection.

(3) The approval agency shall review the request for modification, and if it is determined that the proposed modification is in full compliance with the relevant DOT specification, including a UN portable tank, the request shall be approved and the approval agency shall perform the following activities:

(i) Return one set of the approved revised drawings, calculations, and test data to the applicant. The second and third sets of the approved revised drawings, calculations, and data shall be retained by the approval agency as required in § 107.404(a)(3) of this subchapter.

(ii) Ensure through appropriate inspection that all modifications conform to the revised drawings, calculations, and test data.

(iii) Determine the extent to which retesting of the modified tank is necessary based on the nature of the proposed modification, and ensure that all required retests are satisfactorily performed.

(iv) If modification to an approved tank alters any information on the approval certificate, issue a new approval certificate for the modified tank and ensure that any necessary changes are made to the metal identification plate. A copy of each

newly issued approval certificate shall be retained by the approval agency and by the owner of each portable tank.

(4) If it is determined that the proposed modification is not in compliance with the relevant DOT specification, the request shall be denied. The procedures of paragraph (d) of this section apply to such denial.

(f) *Termination of Approval Certificate.* (1) The Associate Administrator may terminate an approval issued under this section if he determines that:

(i) Information upon which the approval was based is fraudulent or substantially erroneous; or

(ii) Termination of the approval is necessary to adequately protect against risks to life and property; or

(iii) The approval was not issued by the approval agency in good faith; or

(iv) That the portable tank does not meet the specification.

(2) Before an approval is withdrawn, the Associate Administrator gives the interested party(ies):

(i) Written notice of the facts or conduct believed to warrant the withdrawal;

(ii) Opportunity to submit oral and written evidence; and

(iii) Opportunity to demonstrate or achieve compliance with the application requirement.

(3) If the Associate Administrator determines that a certificate of approval must be withdrawn to preclude a significant and imminent adverse effect on public safety, he shall withdraw the certificate of approval issued by a designated approval agency. In such circumstances, the procedures of paragraphs (f)(2) (ii) and (iii) of this section need not be provided prior to withdrawal of the approval, but shall be provided as soon as practicable thereafter.

61. Section 178.274 would be added to subpart H to read as follows:

**§ 178.274 Specifications for UN portable tanks.**

(a) *General.* (1) Each UN portable tank must meet the requirements of this section. In addition to the requirements of this section, requirements specific to UN portable tanks used for liquid and solid hazardous materials, liquefied compressed gases and refrigerated liquefied gases are provided in §§ 178.275, 178.276 and 178.277, respectively. Requirements for approval, maintenance, inspection, testing and use are provided in § 178.273 and part 180, subpart G, of this subchapter. Any portable tank which meets the definition of a "container" within the terms of the International Convention

for Safe Containers (CSC) must meet the requirements of the CSC as amended and 49 CFR parts 450 through 453 and must have a CSC safety approval plate.

(2) In recognition of scientific and technological advances, the technical requirements applicable to UN portable tanks may be varied if approved by the Associate Administrator and the portable tank is shown to provide a level of safety equal to or exceeding the requirements of this subchapter with respect to the compatibility of the transported hazardous materials and the ability of the portable tank to withstand impact, loading and fire conditions. Portable tanks approved to alternative technical requirements must be marked "Alternative Arrangement" as specified in paragraph (i) of this section.

(3) *Definitions.* The following definitions apply for the purposes of design and construction of UN portable tanks under this subpart:

*Alternate Arrangement portable tank* means a UN portable tank that has been approved to alternative technical requirements or testing methods other than those specified for UN portable tanks in part 178 or part 180 of this subchapter.

*Approval agency* means the designated approval agency authorized to approve the portable tank in accordance with the procedures in subpart E, part 107 of this subchapter.

*Design pressure* is defined differently depending on the hazardous materials intended to be transported in the portable tank. See §§ 178.275, 178.276 and 178.277 as applicable.

*Design type* means a portable tank or series of portable tanks made of materials of the same material specifications and thicknesses, manufactured by a single manufacturer, using the same fabrication techniques (for example, welding procedures) and made with equivalent structural equipment, closures, and service equipment.

*Fine grain steel* means steel which has a ferritic grain size of 6 or finer when determined in accordance with ASTM E 112 (incorporated by reference, see § 171.7 of this subchapter).

*Jacket* means the outer insulation cover or cladding which may be part of the insulation system.

*Leakage test* means a test using gas to subject the shell and its service equipment to an effective internal pressure of not less than 25% of the MAWP. For portable tanks used for refrigerated liquefied gases the leakage test must be conducted at an effective internal pressure of not less than 90% of the MAWP.

*Maximum allowable working pressure (MAWP)* is defined differently depending on the hazardous materials intended to be transported in the portable tank. See §§ 178.275, 178.276 and 178.277, as applicable.

*Maximum permissible gross mass (MPGM)* means the sum of the tare mass of the portable tank and the heaviest hazardous material authorized for transportation.

*Mild steel* means a steel with a guaranteed minimum tensile strength of 360 N/mm<sup>2</sup> to 440 N/mm<sup>2</sup> and a guaranteed minimum elongation at fracture as specified in paragraph § 178.274(c)(11).

*Offshore portable tank* means a portable tank specially designed for repeated use in the transportation of hazardous materials to, from and between offshore facilities. An offshore portable tank is designed and constructed in accordance with the Guidelines for the Approval of Containers Handled in Open Seas specified in the IMDG Code (incorporated by reference, see § 171.7 of this subchapter).

*Reference steel* means a steel with a tensile strength of 370 N/mm<sup>2</sup> and an elongation at fracture of 27%.

*Service equipment* means measuring instruments and filling, discharge, venting, safety, heating, cooling and insulating devices.

*Shell* means the part of the portable tank which retains the hazardous materials intended for transportation, including openings and their closures, but does not include service equipment or external structural equipment.

*Structural equipment* means the reinforcing, fastening, protective and stabilizing members external to the shell.

*Test pressure* means the maximum gauge pressure at the top of the shell during the hydraulic pressure test equal to not less than 1.5 times the design pressure for liquids and 1.3 for liquefied compressed gases. The minimum test pressure for portable tanks intended for specific hazardous materials is specified in the applicable portable tank T code assigned to a particular hazardous material in the § 172.101 Table of this subchapter.

(b) *General design and construction requirements.* (1) The design temperature range for the shell must be -40 °C to 50 °C (-40 °F to 122 °F) for hazardous materials transported under normal conditions of transportation, except for portable tanks used for refrigerated liquefied gases where the minimum design temperature must not be higher than the lowest (coldest) temperature (for example, service

temperature) of the contents during filling, discharge or transportation. For hazardous materials handled under elevated temperature conditions, the design temperature must not be less than the maximum temperature of the hazardous material during filling, discharge or transportation. More severe design temperatures must be considered for portable tanks subjected to severe climatic conditions (for example, portable tanks transported in arctic regions). Shells must be designed and constructed in accordance with the requirements of the ASME Code, Section VIII, Division 1 (incorporated by reference, see § 171.7 of this subchapter), except as limited or modified in this subchapter. For portable tanks used for liquid or solid hazardous materials, a design code other than the ASME Code may be used if approved by the Associate Administrator. Portable tanks used for liquefied compressed gases require an ASME certification and U stamp. Shells must be made of metallic materials suitable for forming. Non-metallic materials may be used for the attachments and supports between the shell and jacket, provided their material properties at the minimum and maximum design temperatures are proven to be sufficient. For welded shells, only a material whose weldability has been fully demonstrated may be used. Welds must be of high quality and conform to a level of integrity at least equivalent to the welding requirements specified in the ASME Code, Section VIII for the welding of pressure vessels. When the manufacturing process or the materials make it necessary, the shells must be suitably heat-treated to guarantee adequate toughness in the weld and in the heat affected zones. In choosing the material, the design temperature range must be taken into account with respect to risk of brittle fracture, stress corrosion cracking, resistance to impact, and suitability for the hazardous materials intended for transportation in the portable tank. When fine grain steel is used, the guaranteed value of the yield strength must be not more than 460 N/mm<sup>2</sup> and the guaranteed value of the upper limit of the tensile strength must be not more than 725 N/mm<sup>2</sup> according to the material specification. Aluminum may not be used as a construction material for the shell. Portable tank materials must be suitable for the external environment where they will be transported taking into account the determined design temperature range. Portable tanks must be designed to withstand, without loss of contents, at

least the internal pressure due to the contents and the static, dynamic and thermal loads during normal conditions of handling and transportation. The design must take into account the effects of fatigue, caused by repeated application of these loads through the expected life of the portable tank.

(2) Portable tank shells, fittings, and pipework must be constructed from materials that are:

- (i) Compatible with the hazardous materials intended to be transported; or
- (ii) Properly passivated or neutralized by chemical reaction, if applicable; or
- (iii) For portable tanks used for liquid and solid materials, lined with corrosion-resistant material directly bonded to the shell or attached by equivalent means.

(3) Gaskets and seals must be made of materials that are compatible with the hazardous materials intended to be transported.

(4) When shells are lined, the lining must be compatible with the hazardous materials intended to be transported, homogeneous, non-porous, free from perforations, sufficiently elastic and compatible with the thermal expansion characteristics of the shell. The lining of every shell, shell fittings and piping must be continuous and must extend around the face of any flange. Where external fittings are welded to the tank, the lining must be continuous through the fitting and around the face of external flanges. Joints and seams in the lining must be made by fusing the material together or by other equally effective means.

(5) Contact between dissimilar metals which could result in damage by galvanic action must be prevented by appropriate measures.

(6) The construction materials of the portable tank, including any devices, gaskets, linings and accessories, must not adversely affect or react with the hazardous materials intended to be transported in the portable tank.

(7) Portable tanks must be designed and constructed with supports that provide a secure base during transportation and with suitable lifting and tie-down attachments.

(c) *Design criteria.* (1) Portable tanks and their fastenings must, under the maximum permissible load, be capable of absorbing the following separately applied static forces (for calculation purposes, acceleration due to gravity (g) = 9.81m/s<sup>2</sup>):

- (i) In the direction of travel: 2g (twice the MPGM multiplied by the acceleration due to gravity);
- (ii) Horizontally at right angles to the direction of travel: 1g (the MPGM

multiplied by the acceleration due to gravity);

(iii) Vertically upwards: 1g (the MPGM multiplied by the acceleration due to gravity); and

(iv) Vertically downwards: 2g (twice the MPGM multiplied by the acceleration due to gravity).

(2) Under each of the forces specified in paragraph (c)(1) of this section, the safety factor must be as follows:

(i) For metals having a clearly defined yield point, a design margin of 1.5 in relation to the guaranteed yield strength; or

(ii) For metals with no clearly defined yield point, a design margin of 1.5 in relation to the guaranteed 0.2% proof strength and, for austenitic steels, the 1% proof strength.

(3) The values of yield strength or proof strength must be the values according to recognized material standards. When austenitic steels are used, the specified minimum values of yield strength or proof strength according to the material standards may be increased by up to 15% when these greater values are attested in the material inspection certificate.

(4) Portable tanks must be capable of being electrically grounded to prevent dangerous electrostatic discharge when they are used for Class 2 flammable gases or Class 3 flammable liquids, including elevated temperature materials transported at or above their flash point.

(5) For shells of portable tanks used for liquefied compressed gases, the shell must consist of a circular cross section. Shells must be of a design capable of being stress-analysed mathematically or experimentally by resistance strain gauges as specified in UG-101 of the ASME Code (incorporated by reference, see § 171.7 of this subchapter), or other methods approved by the Associate Administrator.

(6) Shells must be designed and constructed to withstand a hydraulic test pressure of not less than 1.5 times the design pressure for portable tanks used for liquids and 1.3 times the design pressure for portable tanks used for liquefied compressed gases. Specific requirements are provided for each hazardous material in the applicable T Code or portable tank special provision specified in the § 172.101 Table of this subchapter. The minimum shell thickness requirements must also be taken into account.

(7) For metals exhibiting a clearly defined yield point or characterized by a guaranteed proof strength (0.2% proof strength, generally, or 1% proof strength for austenitic steels), the primary membrane stress ( $\sigma$ ) in the shell

must not exceed 0.75 Re or 0.50 Rm, whichever is lower, at the test pressure, where:

Re = yield strength in N/mm<sup>2</sup>, or 0.2% proof strength or, for austenitic steels, 1% proof strength;

Rm = minimum tensile strength in N/mm<sup>2</sup>.

(8) The values of Re and Rm to be used must be the specified minimum values according to recognized material standards. When austenitic steels are used, the specified minimum values for Re and Rm according to the material standards may be increased by up to 15% when greater values are attested in the material inspection certificate.

(9) Steels which have a Re/Rm ratio of more than 0.85 are not allowed for the construction of welded shells. The values of Re and Rm to be used in determining this ratio must be the values specified in the material inspection certificate.

(10) Steels used in the construction of shells must have an elongation at fracture, in percentage, of not less than 10,000/Rm with an absolute minimum of 16% for fine grain steels and 20% for other steels.

(11) For the purpose of determining actual values for materials for sheet metal, the axis of the tensile test specimen must be at right angles (transversely) to the direction of rolling. The permanent elongation at fracture must be measured on test specimens of rectangular cross sections in accordance with ISO 6892 (see § 171.7 of this subchapter), using a 50 mm gauge length.

(d) *Minimum shell thickness.* (1) The minimum shell thickness must be the greatest thickness of the following:

(i) the minimum thickness determined in accordance with the requirements of paragraphs (d)(2) through (d)(10) of this section;

(ii) the minimum thickness determined in accordance with the ASME Code (incorporated by reference, see § 171.7 of this subchapter) or other approved pressure vessel code; or

(iii) the minimum thickness specified in the applicable T code or portable tank special provision indicated for each hazardous material in the § 172.101 Table of this subchapter.

(2) Shells (cylindrical portions, heads and manhole covers) not more than 1.80 m in diameter may not be less than 5 mm thick in the reference steel or of equivalent thickness in the metal to be used. Shells more than 1.80 m in diameter may not be less than 6 mm thick in the reference steel or of equivalent thickness in the metal to be used. For portable tanks used only for the transportation of powdered or

granular solid hazardous materials of Packing Group II or III, the minimum thickness requirement may be reduced to 5 mm in the reference steel or of equivalent thickness in the metal to be used regardless of the shell diameter. For vacuum-insulated tanks, the aggregate thickness of the jacket and the shell must correspond to the minimum thickness prescribed in this paragraph, with the thickness of the shell itself not less than the minimum thickness prescribed in paragraph (d)(3) of this section.

(3) When additional protection against shell damage is provided in the case of portable tanks used for liquid and solid hazardous materials requiring test pressures less than 2.65 bar (265.0 kPa), subject to certain limitations specified in the UN Recommendations (incorporated by reference, see § 171.7 of this subchapter), the Associate Administrator may approve a reduced minimum shell thickness.

(4) The cylindrical portions, heads and manhole covers of all shells must not be less than 3 mm (0.1 inch) thick regardless of the material of construction, except for portable tanks used for liquefied compressed gases where the cylindrical portions, ends (heads) and manhole covers of all shells must not be less than 4 mm (0.2 inch) thick regardless of the material of construction.

(5) When steel that has characteristics other than that of reference steel is used, the equivalent thickness of the shell and heads must be determined according to the following formula:

Where:

$$e_1 = \frac{21.4 e_0 d_1}{1.8^3 \sqrt{Rm_1 \times A_1}}$$

$e_1$  = required equivalent thickness (in mm) of the metal to be used;

$e_0$  = minimum thickness (in mm) of the reference steel specified in the applicable T code or portable tank special provision indicated for each material in the § 172.101 Table of this subchapter;

$d_1$  = 1.8m, unless the formula is used to determine the equivalent minimum thickness for a portable tank shell that is required to have a minimum thickness of 8mm or 10mm according to the applicable T code indicated in the § 172.101 Table of this subchapter. When reference steel thicknesses of 8mm or 10mm are specified,  $d_1$  is equal to the actual diameter of the shell but not less than 1.8m;

$Rm_1$  = guaranteed minimum tensile strength (in N/mm<sup>2</sup>) of the metal to be used;

$A_1$  = guaranteed minimum elongation at fracture (in %) of the metal to be used

according to recognized material standards.

(6) The wall and all parts of the shell may not have a thickness less than that prescribed in paragraphs (d)(2), (d)(3) and (d)(4) of this section. This thickness must be exclusive of any corrosion allowance.

(7) There must be no sudden change of plate thickness at the attachment of the heads to the cylindrical portion of the shell.

(e) *Service equipment.* (1) Service equipment must be arranged so that it is protected against the risk of mechanical damage by external forces during handling and transportation. When the connections between the frame and the shell allow relative movement between the sub-assemblies, the equipment must be fastened to allow such movement without risk of damage to working parts. The external discharge fittings (pipe sockets, shut-off devices) and the internal stop-valve and its seating must be protected against mechanical damage by external forces (for example, by using shear sections). The filling and discharge devices (including flanges or threaded plugs) and any protective caps must be capable of being secured against unintended opening.

(2) Each connection to a portable tank must be clearly marked to indicate its function.

(3) Each stop-valve or other means of closure must be designed and constructed to a rated pressure not less than the MAWP of the shell taking into account the temperatures expected during transport. All stop-valves with screwed spindles must close by a clockwise motion of the handwheel. For other stop-valves the position (open and closed) and direction of closure must be clearly indicated. All stop-valves must be designed to prevent unintentional opening.

(4) Piping must be designed, constructed and installed to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping must be of a suitable metallic material. Welded pipe joints must be used wherever possible.

(5) Joints in copper tubing must be brazed or have an equally strong metal union. The melting point of brazing materials must be no lower than 525 °C (977 °F). The joints must not decrease the strength of the tubing, such as may happen when cutting threads.

(6) The burst pressure of all piping and pipe fittings must be greater than the highest of four times the MAWP of the shell or four times the pressure to which it may be subjected in service by

the action of a pump or other device (except pressure relief devices).

(7) External fittings must be grouped together. Filling and discharge connections may be installed below the normal liquid level of the tank if the tank design conforms to the following requirements:

(i) The portable tank must be permanently mounted in a full framework for containerized transport. For each portable tank design, a prototype portable tank, must fulfill the requirements of parts 450 through 453 of this title for compliance with the requirements of Annex II of the International Convention for Safe Containers.

(ii) Each filling and discharge connection must be equipped with an internal self-closing stop-valve capable of closing within 30 seconds of actuation. Each internal self-closing stop-valve must be protected by a shear section or sacrificial device located outboard of the valve. The shear section or sacrificial device must break at no more than 70 percent of the load that would cause failure of the internal self-closing stop-valve.

(iii) Each internal self-closing stop-valve must be provided with remote means of automatic closure, both thermal and mechanical. The thermal means of automatic closure must actuate at a temperature of not over 121 °C (250 °F).

(8) Ductile metals must be used in the construction of valves and accessories.

(f) *Pressure relief devices.*—(1) *Marking of pressure relief devices.* Every pressure relief device must be clearly and permanently marked with the following:

(i) the pressure (in bar or kPa) or temperature for fusible elements (in °C) at which it is set to discharge;

(ii) the allowable tolerance at the discharge pressure for reclosing devices;

(iii) the reference temperature corresponding to the rated pressure for frangible discs;

(iv) the allowable temperature tolerance for fusible elements;

(v) the rated flow capacity of the device in standard cubic meters of air per second (m<sup>3</sup>/s) determined according to ISO 4126-1 (incorporated by reference, see § 171.7 of this subchapter); and

(vi) when practicable, the device must show the manufacturer's name and product number.

(2) *Connections to pressure relief devices.* Connections to pressure relief devices must be of sufficient size to enable the required discharge to pass unrestricted to the safety device. No stop-valve may be installed between the

shell and the pressure relief devices except where duplicate devices are provided for maintenance or other reasons and the stop-valves serving the devices actually in use are locked open or the stop-valves are interlocked so that at least one of the duplicate devices is always in use. There must be no obstruction in an opening leading to a vent or pressure relief device which might restrict or cut-off the flow from the shell to that device. Vents or pipes from the pressure relief device outlets, when used, must deliver the relieved vapor or liquid to the atmosphere in conditions of minimum back-pressure on the relieving devices.

(3) *Location of pressure relief devices.*

(i) Each pressure relief device inlet must be situated on top of the shell in a position as near the longitudinal and transverse center of the shell as reasonably practicable. All pressure relief device inlets must, under maximum filling conditions, be situated in the vapor space of the shell and the devices must be so arranged as to ensure that escaping vapor is discharged unrestrictedly. For flammable hazardous materials, the escaping vapor must be directed away from the shell in such a manner that it cannot impinge upon the shell. For refrigerated liquefied gases, the escaping vapor must be directed away from the tank and in such a manner that it cannot impinge upon the tank. Protective devices which deflect the flow of vapor are permissible provided the required relief-device capacity is not reduced.

(ii) Arrangements must be made to prevent unauthorized persons from access to the pressure relief devices and to protect the devices from damage caused by the portable tank overturning.

(g) *Gauging devices.* Unless a portable tank is intended to be filled by weight, it must be equipped with one or more gauging devices. Glass level-gauges and gauges made of other fragile material, which are in direct communication with the contents of the tank are prohibited. A connection for a vacuum gauge must be provided in the jacket of a vacuum-insulated portable tank.

(h) *Portable tank supports, frameworks, lifting and tie-down attachments.* (1) Portable tanks must be designed and constructed with a support structure to provide a secure base during transport. The forces and safety factors specified in paragraphs (c)(1) and (c)(2) of this section, respectively, must be taken into account in this aspect of the design. Skids, frameworks, cradles or other similar structures are acceptable.

(2) The combined stresses caused by portable tank mountings (for example,

cradles, framework, etc.) and portable tank lifting and tie-down attachments must not cause excessive stress in any portion of the shell. Permanent lifting and tie-down attachments must be fitted to all portable tanks. Preferably they should be fitted to the portable tank supports but may be secured to reinforcing plates located on the shell at the points of support. Each portable tank must be designed so that the center of gravity of the filled tank is approximately centered within the points of attachment for lifting devices.

(3) In the design of supports and frameworks, the effects of environmental corrosion must be taken into account.

(4) Forklift pockets must be capable of being closed off. The means of closing forklift pockets must be a permanent part of the framework or permanently attached to the framework. Single compartment portable tanks with a length less than 3.65 m need not have forklift pockets that are capable of being closed off provided that:

(i) The shell, including all the fittings, are well protected from being hit by the forklift blades; and

(ii) The distance between forklift pockets (measured from the center of each pocket) is at least half of the maximum length of the portable tank.

(5) During transport, portable tanks must be adequately protected against damage to the shell, and service equipment resulting from lateral and longitudinal impact and overturning on the shell and service equipment must be constructed to withstand impact or overturning. External fittings must be protected so as to preclude the release of the shell contents upon impact or overturning of the portable tank on its fittings. Examples of protection include:

(i) Protection against lateral impact which may consist of longitudinal bars protecting the shell on both sides at the level of the median line;

(ii) Protection of the portable tank against overturning which may consist of reinforcement rings or bars fixed across the frame;

(iii) Protection against rear impact which may consist of a bumper or frame;

(iv) Protection of the shell against damage from impact or overturning by use of an ISO frame in accordance with ISO 1496-3 (incorporated by reference, see § 171.7 of this subchapter); and

(v) Protection of the portable tank from impact or overturning by a vacuum insulation jacket.

(i) *Marking.* (1) Every portable tank must be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place

and readily accessible for inspection. When the plate cannot be permanently attached to the shell, the shell must be marked with at least the information required by the ASME Code (incorporated by reference, see § 171.7 of this subchapter). At a minimum, the following information must be marked on the plate by stamping or by any other similar method:

Country of manufacture

UN

Approval Country

Approval Number

Alternative Arrangements "AA" (see § 178.274(a)(2))

Manufacturer's name or mark

Manufacturer's serial number

Approval Agency (Authorized body for the design approval)

Owner's registration number

Year of manufacture

Pressure vessel code to which the shell is designed

Test pressure \_\_\_\_\_ bar gauge.

MAWP \_\_\_\_\_ bar gauge.

External design pressure (not required for portable tanks used for refrigerated liquefied gases) \_\_\_\_\_ bar/gauge.

Design temperature range \_\_\_\_\_ °C to \_\_\_\_\_ °C. (For portable tanks used for refrigerated liquefied gases, the minimum design temperature must be marked.)

Water capacity at 20 °C/ \_\_\_\_\_ liters.

Water capacity of each compartment at 20 °C \_\_\_\_\_ liters.

Initial pressure test date and witness identification.

MAWP for heating/cooling system

\_\_\_\_\_ bar gauge.

Shell material(s) and material standard reference(s).

Equivalent thickness in reference steel \_\_\_\_\_ mm.

Lining material (when applicable).

Date and type of most recent periodic test(s).

Month \_\_\_\_\_ Year \_\_\_\_\_ Test pressure \_\_\_\_\_ bar/gauge.

Stamp of approval agency that performed or witnessed the most recent test.

For portable tanks used for refrigerated liquefied gases:

Either "thermally insulated" or "vacuum insulated" \_\_\_\_\_.

Effectiveness of the insulation system (heat influx) \_\_\_\_\_ Watts (W).

Reference holding time \_\_\_\_\_ days or hours and initial pressure \_\_\_\_\_ bar/kPa gauge and degree of filling \_\_\_\_\_ in kg for each refrigerated liquefied gas permitted for transportation.

(2) The following information must be marked either on the portable tank itself or on a metal plate firmly secured to the portable tank:

Name of the operator.

Name of hazardous materials being transported and maximum mean bulk temperature (except for refrigerated liquefied gases, the name and temperature are only required when the maximum mean bulk temperature is higher than 50 °C).

Maximum permissible gross mass (MPGM) \_\_\_\_\_ kg.

Unladen (tare) mass \_\_\_\_\_ kg.

**Note to Paragraph (i)(2):** For the identification of the hazardous materials being transported refer to part 172 of this subchapter.

(3) If a portable tank is designed and approved for open seas operations, such as offshore oil exploration, in accordance with the IMDG Code, the words "OFFSHORE PORTABLE TANK" must be marked on the identification plate.

62. Section 178.275 would be added to subpart H to read as follows:

**§ 178.275 Specification for UN Portable Tanks intended for the transportation of liquid and solid hazardous materials.**

(a) In addition to the requirements of § 178.274, the following definitions and requirements apply to UN portable tanks intended for the transportation of liquid and solid hazardous materials:

(1) *Design pressure* means the pressure to be used in calculations required by the recognized pressure vessel code. The design pressure must not be less than the highest of the following pressures:

(i) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(ii) The sum of:

(A) The absolute vapor pressure (in bar) of the hazardous material at 65 °C, minus 1 bar (149 °F, minus 100 kPa);

(B) The partial pressure (in bar) of air or other gases in the ullage space, resulting from their compression during filling without pressure relief by a maximum ullage temperature of 65 °C (149 °F) and a liquid expansion due to an increase in mean bulk temperature of 35 °C (95 °F); and

(C) A head pressure determined on the basis of the forces specified in § 178.274(c), but not less than 0.35 bar (35 kPa).

(2) *Maximum allowable working pressure (MAWP)* means a pressure that must not be less than the highest of the following pressures measured at the top of the shell while in operating position:

(i) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(ii) The maximum effective gauge pressure to which the shell is designed which must be not less than the design pressure.

(b) *Service equipment.* (1) In addition to the requirements specified in § 178.274, for service equipment, all openings in the shell, intended for filling or discharging the portable tank must be fitted with a manually operated stop-valve located as close to the shell

as reasonably practicable. Other openings, except for openings leading to venting or pressure relief devices, must be equipped with either a stop-valve or another suitable means of closure located as close to the shell as reasonably practicable.

(2) All portable tanks must be fitted with a manhole or other inspection openings of a suitable size to allow for internal inspection and adequate access for maintenance and repair of the interior. Compartmented portable tanks must have a manhole or other inspection openings for each compartment.

(3) For insulated portable tanks, top fittings must be surrounded by a spill collection reservoir with suitable drains.

(4) Piping must be designed, constructed and installed to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. All piping must be of a suitable metallic material. Welded pipe joints must be used wherever possible.

(c) *Bottom openings.* (1) Certain hazardous materials may not be transported in portable tanks with bottom openings. When the applicable T code or portable tank special provision, as referenced for materials in the § 172.101 Table of this subchapter, specifies that bottom openings are prohibited, there must be no openings below the liquid level of the shell when it is filled to its maximum permissible filling limit. When an existing opening is closed, it must be accomplished by internally and externally welding one plate to the shell.

(2) Bottom discharge outlets for portable tanks carrying certain solid, crystallizable or highly viscous hazardous materials must be equipped with at least two serially fitted and mutually independent shut-off devices. Use of only two shut-off devices is only authorized when this paragraph is referenced in the applicable T Code indicated for each hazardous material in the § 172.101 Table of this subchapter. The design of the equipment must be to the satisfaction of the approval agency and must include:

(i) An external stop-valve fitted as close to the shell as reasonably practicable; and

(ii) A liquid tight closure at the end of the discharge pipe, which may be a bolted blank flange or a screw cap.

(3) Except as provided in paragraph (c)(2) of this section, every bottom discharge outlet must be equipped with three serially fitted and mutually independent shut-off devices. The design of the equipment must be to the satisfaction of the approval agency and must include:

(i) A self-closing internal stop-valve, which is a stop-valve within the shell or within a welded flange or its companion flange, such that:

(A) The control devices for the operation of the valve are designed to prevent any unintended opening through impact or other inadvertent act;

(B) The valve is operable from above or below;

(C) If possible, the setting of the valve (open or closed) must be capable of being verified from the ground;

(D) Except for portable tanks having a capacity less than 1,000 liters (264.2 gallons), it must be possible to close the valve from an accessible position of the portable tank that is remote from the valve itself; and

(E) The valve must continue to be effective in the event of damage to the external device for controlling the operation of the valve;

(ii) An external stop-valve fitted as close to the shell as reasonably practicable; and

(iii) A liquid tight closure at the end of the discharge pipe, which may be a bolted blank flange or a screw cap.

(4) For a lined shell, the internal stop-valve required by paragraph (c)(3)(i) of this section may be replaced by an additional external stop-valve.

(d) *Pressure relief devices.* All portable tanks must be fitted with at least one pressure relief device. All relief devices must be designed, constructed and marked in accordance with the requirements of this subchapter.

(e) *Vacuum-relief devices.* (1) A shell which is to be equipped with a vacuum-relief device must be designed to withstand, without permanent deformation, an external pressure of not less than 0.21 bar (21.0 kPa) above the internal pressure. The vacuum-relief device must be set to relieve at a vacuum setting not greater than minus (-) 0.21 bar (- 21.0 kPa) unless the shell is designed for a higher external over pressure, in which case the vacuum-relief pressure of the device to be fitted must not be greater than the tank design vacuum pressure. A shell that is not fitted with a vacuum-relief device must be designed to withstand, without permanent deformation, an external pressure of not less than 0.4 bar (40.0 kPa) above the internal pressure.

(2) Vacuum-relief devices used on portable tanks intended for the transportation of hazardous materials meeting the criteria of Class 3, including elevated temperature hazardous materials transported at or above their flash point, must prevent the immediate passage of flame into the shell or the portable tank must have a shell capable

of withstanding, without leakage, an internal explosion resulting from the passage of flame into the shell.

(f) *Pressure relief devices.* (1) Each portable tank with a capacity not less than 1,900 liters (501.9 gallons) and every independent compartment of a portable tank with a similar capacity, must be provided with one or more pressure relief devices of the reclosing type. Such portable tanks may, in addition, have a frangible disc or fusible element in parallel with the reclosing devices, except when the applicable T code assigned to a hazardous material requires that the frangible disc precede the pressure relief device, according to paragraph (f)(3) of this section, or when no bottom openings are allowed. The pressure relief devices must have sufficient capacity to prevent rupture of the shell due to over pressurization or vacuum resulting from filling, discharging, from heating of the contents or fire.

(2) Pressure relief devices must be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure.

(3) When required for certain hazardous materials by the applicable T code or portable tank special provision specified for a hazardous material in the § 172.101 Table of this subchapter, portable tanks must have a pressure relief device consistent with the requirements of this subchapter. Except for a portable tank in dedicated service that is fitted with an approved relief device constructed of materials compatible with the hazardous material, the relief device system must include a frangible disc preceding a reclosing pressure relief device. A pressure gauge or suitable tell-tale indicator for the detection of disc rupture, pin-holing or leakage must provide the space between the frangible disc and the pressure relief device. The frangible disc must rupture at a nominal pressure 10% above the start to discharge pressure of the relief device.

(4) Every portable tank with a capacity less than 1,900 liters (501.9 gallons) must be fitted with a pressure relief device, which may be a frangible disc when this disc is set to rupture at a nominal pressure equal to the test pressure at any temperature within the design temperature range.

(5) When the shell is fitted for pressure discharge, a suitable pressure relief device must provide the inlet line to the portable tank set to operate at a pressure not higher than the MAWP of the shell, and a stop-valve must be fitted as close to the shell to minimize the potential for damage.

(6) *Setting of pressure relief devices.*  
 (i) Pressure relief devices must operate only in conditions of excessive rise in temperature, since the shell must not be subject to undue fluctuations of pressure during normal conditions of transportation.

(ii) The required pressure relief device must be set to start-to-discharge at a nominal pressure of five-sixths of the test pressure for shells having a test pressure of not more than 4.5 bar (450 kPa) and 110% of two-thirds of the test pressure for shells having a test pressure of more than 4.5 bar (450 kPa). A self-closing relief device must close at a pressure not more than 10% below the pressure at which the discharge starts. The device must remain closed at all lower pressures. This requirement does not prevent the use of vacuum-relief or combination pressure relief and vacuum-relief devices.

(g) *Fusible elements.* Fusible elements must operate at a temperature between 110 °C (230 °F) and 149 °C (300.2 °F) provided that the pressure in the shell at the fusing temperature will not exceed the test pressure. They must be placed at the top of the shell with their inlets in the vapor space and in no case may they be shielded from external heat. Fusible elements must not be utilized on portable tanks with a test pressure which exceeds 2.65 bar (265.0 kPa). Fusible elements used on portable tanks intended for the transport of elevated temperature hazardous materials must be designed to operate at a temperature higher than the maximum temperature that will be experienced during transport and must be to the satisfaction of the approval agency.

(h) *Capacity of pressure relief devices.*  
 (1) The reclosing pressure relief device required by paragraph (f)(1) must have a minimum cross sectional flow area equivalent to an orifice of 31.75 mm (1.3 inches) diameter. Vacuum-relief devices, when used, must have a cross sectional flow area not less than 284 mm<sup>2</sup> (11.2 inches<sup>2</sup>).

(2) Under conditions of complete fire engulfment of the portable tank, the combined delivery capacity of the relief devices must be sufficient to limit the pressure in the shell to 20% above the start-to-discharge pressure specified in paragraph(f)(6) of this section. Emergency pressure relief devices may be used to achieve the full relief capacity prescribed. The total required capacity of the relief devices may be determined using the formula in paragraph (h)(2)(i) of this section or the table in paragraph (h)(2)(iii) of this section.

(i)(A) To determine the total required capacity of the relief devices, which must be regarded as being the sum of the individual capacities of all the contributing devices, the following formula must be used:

$$Q = 12.4 \frac{FA^{0.82}}{LC} \sqrt{\frac{ZT}{M}}$$

Where:

Q = minimum required rate of discharge in cubic meters of air per second (m<sup>3</sup>/s) at standard conditions: 1 bar and 0 °C (273 K);

F = for uninsulated shells: 1; for insulated shells: U(649 - t)/13.6 but in no case is less than 0.25 where: U = thermal conductance of the insulation in kW·m<sup>-2</sup>·K<sup>-1</sup>, at 38 °C; and t = actual

temperature of the hazardous material during filling (in °C) or when this temperature is unknown, let t = 15 °C. The value of F given above for insulated shells may only be used if the insulation is in conformance with paragraph (h)(2)(iv) of this section;

A = total external surface area of shell in square meters;  
 Z = the gas compressibility factor in the accumulating condition (when this factor is unknown, let Z equal 1.0);  
 T = absolute temperature in Kelvin (°C + 273) above the pressure relief devices in the accumulating condition;  
 L = the latent heat of vaporization of the liquid, in kJ/kg, in the accumulating condition;  
 M = molecular weight of the hazardous material.

(B) The constant C, as shown in the formula in paragraph (h)(2)(i)(A) of this section, is derived from one of the following formula as a function of the ratio k of specific heats:

$$k = \frac{C_p}{C_v}$$

Where:

c<sub>p</sub> is the specific heat at constant pressure; and  
 c<sub>v</sub> is the specific heat at constant volume.

(C) When k > 1:

$$C = \sqrt{k \left( \frac{2}{k+1} \right)^{\frac{k+1}{k-1}}}$$

(D) When k = 1 or k is unknown, a value of 0.607 may be used for the constant C. C may also be taken from the following table:

C CONSTANT VALUE TABLE

k	C	k	C	k	C
1.00	0.607	1.26	0.660	1.52	0.704
1.02	0.611	1.28	0.664	1.54	0.707
1.04	0.615	1.30	0.667	1.56	0.710
1.06	0.620	1.32	0.671	1.58	0.713
1.08	0.624	1.34	0.674	1.60	0.716
1.10	0.628	1.36	0.678	1.62	0.719
1.12	0.633	1.38	0.681	1.64	0.722
1.14	0.637	1.40	0.685	1.66	0.725
1.16	0.641	1.42	0.688	1.68	0.728
1.18	0.645	1.44	0.691	1.70	0.731
1.20	0.649	1.46	0.695	2.00	0.770
1.22	0.652	1.48	0.698	2.20	0.793
1.24	0.656	1.50	0.701	.....	.....

(ii) As an alternative to the formula in paragraph (h)(2)(i) of this section, relief devices for shells used for transporting liquids may be sized in accordance with the table in paragraph (h)(2)(iii) of this section. The table in paragraph (h)(2)(iii) of this section assumes an insulation

value of F = 1 and must be adjusted accordingly when the shell is insulated. Other values used in determining the table in paragraph (h)(2)(iii) of this section are: L = 334.94 kJ/kg; M = 86.7; T = 394 K; Z = 1; and C = 0.607.

(iii) Minimum emergency vent capacity, Q, in cubic meters per air per second at 1 bar and 0 °C (273 K), as shown in the following table:



MINIMUM EMERGENCY VENT CAPACITY  
[Q Values]

A Exposed area (square meters)	Q (Cubic meters of air per second)	A Exposed area (square meters)	Q (Cubic meters of air per second)
2	0.230	37.5	2.539
3	0.320	40	2.677
4	0.405	42.5	2.814
5	0.487	45	2.949
6	0.565	47.5	3.082
7	0.641	50	3.215
8	0.715	52.5	3.346
9	0.788	55	3.476
10	0.859	57.5	3.605
12	0.998	60	3.733
14	1.132	62.5	3.860
16	1.263	65	3.987
18	1.391	67.5	4.112
20	1.517	70	4.236
22.5	1.670	75	4.483
25	1.821	80	4.726
27.5	1.969	85	4.967
30	2.115	90	5.206
32.5	2.258	95	5.442
35	2.400	100	5.676

(iv) Insulation systems, used for the purpose of reducing venting capacity, must be approved by the approval agency. In all cases, insulation systems approved for this purpose must:

(A) Remain effective at all temperatures up to 649 °C (1200.2 °F); and

(B) Be jacketed with a material having a melting point of 700 °C (1292 °F) or greater.

(i) *Approval, inspection and testing.*

Approval procedures for UN portable tanks are specified in § 178.273. Inspection and testing requirements are specified in § 180.605 of this subchapter.

63. Section 178.276 would be added to subpart H to read as follows:

**§ 178.276 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of liquefied compressed gases.**

(a) In addition to the requirements of § 178.274 applicable to UN portable tanks, the following requirements apply to UN portable tanks used for liquefied compressed gases. In addition to the definitions in § 178.274, the following definitions apply:

*Design pressure* means the pressure to be used in calculations required by the ASME Code (incorporated by reference, see § 171.7 of this subchapter). The design pressure must be not less than the highest of the following pressures:

(i) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(ii) The sum of:

(A) The maximum effective gauge pressure to which the shell is designed as defined in this paragraph under “MAWP”; and

(B) A head pressure determined on the basis of the dynamic forces specified in paragraph (h) of this section, but not less than 0.35 bar (35 kPa).

**Note to Paragraph (a)(1):** For the purpose of this section, the term “design pressure” as used in this specification is identical to the term “maximum allowable working pressure” as used in the ASME Code, Section VIII.

(2) *Design reference temperature* means the temperature at which the vapor pressure of the contents is determined for the purpose of calculating the MAWP. The value for each portable tank type is as follows:

(i) Shell with a diameter of 1.5 meters or less: 65 °C; or

(ii) Shell with a diameter of more than 1.5 meters:

(A) Without insulation or sun shield: 60 °C;

(B) With sun shield: 55 °C; and

(C) With insulation: 50 °C.

(3) *Filling density* means the average mass of liquefied compressed gas per liter of shell capacity (kg/l).

(4) *Maximum allowable working pressure (MAWP)* means a pressure that must be not less than the highest of the following pressures measured at the top of the shell while in operating position, but in no case less than 7 bar (700 kPa):

(i) The maximum effective gauge pressure allowed in the shell during filling or discharge; or

(ii) The maximum effective gauge pressure to which the shell is designed, which must be:

(A) Not less than the pressure specified for each liquefied compressed gas listed in portable tank special provision T50; and

(B) Not less than the sum of:

(1) The absolute vapor pressure (in bar) of the liquefied compressed gas at the design reference temperature minus 1 bar; and

(2) The partial pressure (in bar) of air or other gases in the ullage space which is determined by the design reference temperature and the liquid phase expansion due to the increase of the mean bulk temperature of  $t_r$ - $t_r$  ( $t_r$  = filling temperature, usually 15 °C,  $t_r$  = 50 °C maximum mean bulk temperature);

(b) *General design and construction requirements.* (1) Tanks must be of seamless or welded steel construction, or combination of both, and have a water capacity greater than 450 liters (118.9 gallons). Tanks must be designed, constructed, certified and stamped in

accordance with the ASME Code, Section VIII (incorporated by reference, see § 171.7 of this subchapter).

(2) Portable tanks must be postweld heat-treated and radiographed as prescribed in the ASME Code, except that each portable tank constructed in accordance with part UHT of the ASME Code must be postweld heat-treated. Where postweld heat treatment is required, the portable tank must be treated as a unit after completion of all the welds in and/or to the shell and heads. The method must be as prescribed in the ASME Code. Welded attachments to pads may be made after postweld heat treatment is made. A portable tank used for anhydrous ammonia must be postweld heat-treated. The postweld heat treatment must be as prescribed in the ASME Code, but in no event at less than 1050 °F tank metal temperature. Additionally, portable tanks constructed in accordance with part UHT of the ASME Code must conform to the following requirements:

(i) Welding procedure and welder performance tests must be made annually in accordance with section IX of the ASME Code. In addition to the essential variables named therein, the following must be considered to be essential variables: number of passes, thickness of plate, heat input per pass, and manufacturer's identification of rod and flux. The number of passes, thickness of plate and heat input per pass may not vary more than 25 percent from the procedure qualification. Records of the qualification must be retained for at least 5 years by the tank manufacturer and made available to duly identified representatives of the Department of Transportation or the owner of the tank.

(ii) Impact tests must be made on a lot basis. A lot is defined as 100 tons or less of the same heat and having a thickness variation no greater than plus or minus 25 percent. The minimum impact required for full-sized specimens shall be 20 foot-pounds (or 10 foot-pounds for half-sized specimens) at 0° F Charpy V-Notch in both the longitudinal and transverse direction. If the lot test does not pass this requirement, individual plates may be accepted if they individually meet this impact requirement.

(3) Welding procedures and welder performance tests must be made annually in accordance with Section IX of the ASME Code. In addition to the essential variables named therein, the following must be considered to be essential variables: number of passes, thickness of plate, heat input per pass, and manufacturer's identification of rod and flux. The number of passes,

thickness of plate and heat input per pass may not vary more than 25% from the procedure qualification. Records of the qualification must be retained for at least 5 years by the portable tank manufacturer and made available to the approval agency and the owner of the tank as specified in § 178.273.

(4) Impact tests must be made on a lot basis. A lot is defined as 100 tons or less of raw material of the same heat and having a thickness variation no greater than plus or minus 25%. The minimum impact required for full-sized specimens must be 20 foot-pounds (or 10 foot-pounds for half-sized specimens) at 0° F Charpy V-Notch in both the longitudinal and transverse direction. If the lot test does not pass this requirement, individual plates may be accepted if they individually meet this impact requirement.

(5) When the shells intended for the transportation of liquefied compressed gases are equipped with thermal insulation, a device must be provided to prevent any dangerous pressure from developing in the insulating layer in the event of a leak, when the protective covering is so closed as to be gas-tight. The thermal insulation must not inhibit access to the fittings and discharge devices. In addition, the thermal insulation systems must satisfy the following requirements:

(i) Consist of a shield covering not less than the upper third, but not more than the upper half of the surface of the shell, and separated from the shell by an air space of approximately 40 mm across; or

(ii) Consist of a complete cladding of insulating materials. The insulation must be of adequate thickness and constructed to prevent the ingress of moisture and damage to the insulation. The insulation and cladding must have a thermal conductance of not more than  $0.67 \text{ (W}\cdot\text{m}^{-2}\cdot\text{K}^{-1})$  under normal conditions of transportation.

(c) *Service equipment.* (1) All openings with a diameter of more than 1.5 mm (.1 inch) in shells of portable tanks, except openings for pressure-relief devices, inspection openings and closed bleed holes, must be fitted with at least three mutually independent shut-off devices in series: the first being an internal stop-valve, excess flow valve, integral excess flow valve, or excess flow feature device (see § 178.337-1(g)), the second being an external stop-valve and the third being a blank flange or equivalent device.

(2) When a portable tank is fitted with an excess flow valve, the excess flow valve must be so fitted that its seating is inside the shell or inside a welded flange or, when fitted externally, its

mountings must be designed so that in the event of impact it must maintain its effectiveness. The excess flow valves must be selected and fitted so as to close automatically when the rated flow specified by the manufacturer is reached. Connections and accessories leading to or from such a valve must have a capacity for a flow more than the excess flow valve's rated flow.

(3) For filling and discharge openings, the first shut-off device must be an internal stop-valve and the second must be a stop-valve placed in an accessible position on each discharge and filling pipe.

(4) For filling and discharge bottom openings of portable tanks intended for the transportation of flammable and/or toxic liquefied compressed gases, the internal stop-valve must be a quick closing safety device that closes automatically in the event of unintended movement of the portable tank during filling or discharge or fire engulfment. Except for portable tanks having a capacity of not more than 1,000 liters (264.2 gallons), it must be possible to operate this device by remote control.

(5) In addition to filling, discharge and gas pressure equalizing orifices, shells may have openings in which gauges, thermometers and manometers can be fitted. Connections for such instruments must be made by suitable welded nozzles or pockets and may not be connected by screwed connections through the shell.

(6) All portable tanks must be fitted with manholes or other inspection openings of suitable size to allow for internal inspection and adequate access for maintenance and repair of the interior.

(d) *Bottom openings.* Bottom openings are prohibited on portable tanks when the portable tank special provision T50 in § 172.102(c)(7) 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) *Pressure relief devices.* (1) Portable tanks must be provided with one or more reclosing pressure relief devices. The pressure relief devices must open automatically at a pressure not less than the MAWP and be fully open at a pressure equal to 110% of the MAWP. These devices must, after discharge, close at a pressure not less than 10% below the pressure at which discharge starts and must remain closed at all lower pressures. The pressure relief devices must be of a type that will resist dynamic forces including liquid surge. A frangible disc may only be used in

series with a reclosing pressure relief device.

(2) Pressure relief devices must be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure.

(3) Portable tanks intended for the transportation of certain liquefied compressed gases identified in portable tank special provision T50 in § 172.102 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 comprise 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 discs must rupture at a nominal pressure 10% above the start-to-discharge pressure of the relief device.

(4) In the case of portable tanks used for more than one gas, the pressure relief devices must open at a pressure indicated in paragraph (f) of this section for the gas having the highest maximum allowable pressure of the gases allowed to be transported in the portable tank.

(f) *Capacity of relief devices.* The combined delivery capacity of the relief devices must be sufficient so that, in the event of total fire engulfment, the pressure inside the shell cannot exceed 120% of the MAWP. Reclosing relief devices must be used to achieve the full relief capacity prescribed. In the case of portable tanks used for more than gas, the combined delivery capacity of the pressure relief devices must be taken for the liquefied compressed gas which requires the highest delivery capacity of the liquefied compressed gases allowed to be transported in the portable tank. The total required capacity of the relief devices must be determined according to the requirements in § 178.275(h). These requirements apply only to liquefied compressed gases which have critical temperatures well above the temperature at the accumulating condition. For gases which have critical temperatures near or below the temperature at the accumulating condition, the calculation of the pressure relief device delivery capacity must consider the additional thermodynamic properties of the gas (for example, CGA S-1.2-1995;

incorporated by reference, see § 171.7 of this subchapter).

64. A new § 178.277 would be added to subpart H to read as follows:

**§ 178.277 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of refrigerated liquefied gases.**

(a) In addition to the requirements of § 178.274 applicable to UN portable tanks, the following requirements and definitions apply to UN portable tanks used for refrigerated liquefied gases:

(1) *Design pressure.* For the purpose of this section the term *design pressure* is consistent with the definition for design pressure in the ASME Code, Section VIII (incorporated by reference, see § 171.7 of this subchapter).

(2) *Holding time* is the time, as determined by testing, that will elapse from loading until the pressure of the contents, under equilibrium conditions, reaches the lowest set pressure of the pressure limiting device(s) (for example, pressure control valve or pressure relief device). Holding time must be determined as specified in § 178.338–9.

(3) *Maximum allowable working pressure (MAWP)* means the maximum effective gauge pressure permissible at the top of the shell of a loaded portable tank in its operating position including the highest effective pressure during filling and discharge;

(4) *Minimum design temperature* means the temperature which is used for the design and construction of the shell not higher than the lowest (coldest) service temperature of the contents during normal conditions of filling, discharge and transportation.

(5) *Shell* means the part of the portable tank which retains the refrigerated liquefied gas intended for transport, including openings and their closures, but does not include service equipment or external structural equipment.

(6) *Tank* means a construction which normally consists of either :

(i) A jacket and one or more inner shells where the space between the shell(s) and the jacket is exhausted of air (vacuum insulation) and may incorporate a thermal insulation system; or

(ii) A jacket and an inner shell with an intermediate layer of solid thermally insulating material (for example, solid foam).

(b) *General design and construction requirements.* (1) Portable tanks must be of seamless or welded steel construction and have a water capacity of more than 450 liters (118.9 gallons). Portable tanks must be designed, constructed, certified

and stamped in accordance with the ASME Code (incorporated by reference, see § 171.7 of this subchapter).

(2) Portable tanks must be postweld heat treated and radiographed as prescribed in the ASME Code except that each tank constructed in accordance with part UHT of the ASME Code must be postweld heat treated. Where postweld heat treatment is required, the tank must be treated as a unit after completion of all the welds to the shell and heads. The method must be as prescribed in the ASME Code. Welded attachments to pads may be made after postweld heat treatment is made. The postweld heat treatment must be as prescribed in the ASME Code, but in no event at less than 1050 °F tank metal temperature.

(3) Welding procedure and welder performance tests must be made annually in accordance with Section IX of the ASME Code (incorporated by reference, see § 171.7 of this subchapter). In addition to the essential variables named in the ASME Code, the following must be considered as essential variables: number of passes, thickness of plate, heat input per pass, and the specified rod and flux. The number of passes, thickness of plate and heat input per pass may not vary more than 25% from the procedure qualification. Records of the qualification must be retained for at least 5 years by the portable tank manufacturer and made available to the approval agency and the owner of the portable tank as specified in § 178.273.

(4) Impact tests must be made on a lot basis. A lot is defined as 100 tons or less of the same heat and having a thickness variation no greater than plus or minus 25%. The minimum impact required for full-sized specimens must be 20 foot-pounds (or 10 foot-pounds for half-sized specimens) at 0 °F Charpy V-Notch in both the longitudinal and transverse direction. If the lot test does not pass this requirement, individual plates may be accepted if they individually meet this impact requirement.

(5) Shells and jackets must be made of metallic materials suitable for forming. Jackets must be made of steel. Non-metallic materials may be used for the attachments and supports between the shell and jacket, provided their material properties at the minimum design temperature are proven to be sufficient. In choosing the material, the minimum design temperature must be taken into account with respect to risk of brittle fracture, to hydrogen embrittlement, to stress corrosion cracking and to resistance to impact.

(6) Any part of a portable tank, including fittings, gaskets and pipe-

work, which can be expected normally to come into contact with the refrigerated liquefied gas transported must be compatible with that refrigerated liquefied gas.

(7) The thermal insulation system must include a complete covering of the shell with effective insulating materials. External insulation must be protected by a jacket so as to prevent the ingress of moisture and other damage under normal transport conditions.

(8) When a jacket is so closed as to be gas-tight, a device must be provided to prevent any dangerous pressure from developing in the insulation space.

(9) Materials which may react with oxygen or oxygen enriched atmospheres in a dangerous manner may not be used in portable tanks intended for the transport of refrigerated liquefied gases having a boiling point below minus 182 °C at atmospheric pressure in locations with the thermal insulation where there is a risk of contact with oxygen or with oxygen enriched fluid.

(10) Insulating materials must not deteriorate unduly in service.

(11) A reference holding time must be determined for each refrigerated liquefied gas intended for transport in a portable tank. The reference holding time must be determined by testing in accordance with the requirements of § 178.338–9, considering the following factors:

(i) The effectiveness of the insulation system, determined in accordance with paragraph (b)(12) of this section;

(ii) The lowest set pressure of the pressure limiting device;

(iii) The initial filling conditions;

(iv) An assumed ambient temperature of 30 °C (86 °F);

(v) The physical properties of the individual refrigerated liquefied gas intended to be transported.

(12) The effectiveness of the insulation system (heat influx in watts) may be determined by type testing the portable tank in accordance with a procedure specified in § 178.338–9(c) or by using the holding time test in § 178.338–9(b). This test must consist of either:

(i) A constant pressure test (for example, at atmospheric pressure) when the loss of refrigerated liquefied gas is measured over a period of time; or

(ii) A closed system test when the rise in pressure in the shell is measured over a period of time.

(13) When performing the constant pressure test, variations in atmospheric pressure must be taken into account. When performing either test, corrections must be made for any variation of the ambient temperature from the assumed

ambient temperature reference value of 30 °C (86 °F).

(14) The jacket of a vacuum-insulated double-wall tank must have either an external design pressure not less than 100 kPa (1 bar) gauge pressure calculated in accordance with the ASME Code or a calculated critical collapsing pressure of not less than 200 kPa (2 bar) gauge pressure. Internal and external reinforcements may be included in calculating the ability of the jacket to resist the external pressure.

**Note to paragraph (b):** For the determination of the actual holding time as indicated by paragraphs (b)(11), (12) and (13) of this section, before each journey, refer to § 178.338–9(b).

(c) *Design criteria.* For shells with vacuum insulation, the test pressure must not be less than 1.3 times the sum of the MAWP and 100 kPa (1 bar). In no case may the test pressure be less than 300 kPa (3 bar) gauge pressure.

(d) *Service equipment.* (1) Each filling and discharge opening in portable tanks used for the transport of flammable refrigerated liquefied gases must be fitted with at least three mutually independent shut-off devices in series: the first being a stop-valve situated as close as reasonably practicable to the jacket, the second being a stop-valve and the third being a blank flange or equivalent device. The shut-off device closest to the jacket must be a quick closing device, which closes automatically in the event of unintended movement of the portable tank during filling or discharge or fire engulfment. This device must be operable by remote control.

(2) Each filling and discharge opening in portable tanks used for the transport of non-flammable refrigerated liquefied gases must be fitted with at least two mutually independent shut-off devices in series: the first being a stop-valve situated as close as reasonably practicable to the jacket and the second a blank flange or equivalent device.

(3) For sections of piping which can be closed at both ends and where liquid product can be trapped, a method of automatic pressure relief must be provided to prevent excess pressure build-up within the piping.

(4) Each connection on a portable tank must be clearly marked to indicate its function.

(5) When pressure-building units are used, the liquid and vapor connections to that unit must be provided with a valve as close to the jacket as reasonably practicable to prevent the loss of contents in case of damage to the pressure-building unit.

(6) The materials of construction of valves and accessories must have satisfactory properties at the lowest operating temperature of the portable tank.

(e) *Pressure relief devices.* (1) Every shell must be provided with not less than two independent reclosing pressure relief devices. The pressure relief devices must open automatically at a pressure not less than the MAWP and be fully open at a pressure equal to 110% of the MAWP. These devices must, after discharge, close at a pressure not lower than 10% below the pressure at which discharge starts and must remain closed at all lower pressures. The pressure relief devices must be of the type that will resist dynamic forces including surge.

(2) Except for portable tanks used for oxygen, portable tanks for non-flammable refrigerated liquefied gases (except oxygen) and hydrogen may in addition have frangible discs in parallel with the reclosing devices as specified in paragraphs (e)(4)(ii) and (e)(4)(iii) of this section.

(3) Pressure relief devices must be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure.

(4) *Capacity and setting of pressure relief devices.* (i) In the case of the loss of vacuum in a vacuum-insulated tank or of loss of 20% of the insulation of a tank insulated with solid materials, the combined capacity of all pressure relief devices installed must be sufficient so that the pressure (including accumulation) inside the shell does not exceed 120% of the MAWP.

(ii) For non-flammable refrigerated liquefied gases (except oxygen) and hydrogen, this capacity may be achieved by the use of frangible discs in parallel with the required safety-relief devices. Frangible discs must rupture at nominal pressure equal to the test pressure of the shell.

(iii) Under the circumstances described in paragraphs (e)(4)(i) and

(e)(4)(ii) of this section, together with complete fire engulfment, the combined capacity of all pressure relief devices installed must be sufficient to limit the pressure in the shell to the test pressure.

(iv) The required capacity of the relief devices must be calculated in accordance with CGA Pamphlet S–1–1.2 (incorporated by reference, see § 171.7 of this subchapter).

65. In § 178.703, paragraph (a)(1) introductory text would be revised and in paragraph (a)(1)(ii), a new sentence would be added at the end of the paragraph to read as follows:

**§ 178.703 Marking of intermediate bulk containers.**

(a) \* \* \*

(1) Mark every IBC in a durable and clearly visible manner (may be applied in a single line or in multiple lines provided the correct sequence is followed) with the following information in letters, numerals and symbols of at least 12 mm in height and in the sequence presented:

\* \* \* \* \*

(ii) \* \* \* The letter “W” must follow the IBC design type identification code on an IBC when the IBC differs from the requirements in subpart N of this part, or is tested using methods other than those specified in this subpart, and is approved by the Associate Administrator in accordance with the provisions in § 178.801(i).

\* \* \* \* \*

66. In § 178.705, paragraph (c)(1)(iv)(A) would be revised and a new paragraph (c)(1)(iv)(C) would be added to read as follows:

**§ 178.705 Standards for metal intermediate bulk containers.**

\* \* \* \* \*

(c) \* \* \*

(1) \* \* \*

(iv) \* \* \*

(A) For a reference steel having a product of  $R_m X A_o = 10,000$ , where  $A_o$  is the minimum elongation (as a percentage) of the reference steel to be used on fracture under tensile stress, ( $R_m X A_o = 10,000 X 145$ ; if tensile strength is in U.S. Standard units of pounds per square inch) the wall thickness must not be less than:

Capacity (C) in liters <sup>1</sup>	Wall thickness (T) in mm			
	Types 11A, 11B, 11N		Types 21A, 21B, 21N, 31A, 31B, 31N	
	Unprotected	Protected	Unprotected	Protected
$C \leq 1000$	2.0	1.5	2.5	2.0
$1000 < C \leq 2000$	$T=C/2000 + 1.5$	$T=C/2000 + 1.0$	$T=C/2000 + 2.0$	$T=C/2000 + 1.5$

Capacity (C) in liters <sup>1</sup>	Wall thickness (T) in mm			
	Types 11A, 11B, 11N		Types 21A, 21B, 21N, 31A, 31B, 31N	
	Unprotected	Protected	Unprotected	Protected
2000 < C ≤ 3000	T=C/2000 + 1.5	T=C/2000 + 1.0	T=C/1000 + 1.0	T=C/2000 + 1.5

<sup>1</sup> Where: gallons = liters × 0.264.

\* \* \* \* \*

(C) For purposes of the calculation described in paragraph (c)(1)(iv)(B) of this section, the guaranteed minimum tensile strength of the metal to be used (R<sub>m1</sub>) must be the minimum value according to material standards. However, for austenitic (stainless) steels, the specified minimum value for R<sub>m</sub>, according to the material standards, may be increased by up to 15% when a greater value is provided in the material inspection certificate. When no material standard exists for the material in question, the value of R<sub>m</sub> must be the minimum value indicated in the material inspection certificate.

\* \* \* \* \*

67. In § 178.801, in paragraph (i), two sentences would be added at the end of the paragraph to read as follows:

**§ 178.801 General requirements.**

\* \* \* \* \*

(i) \* \* \* A large packaging, as defined in § 171.8 of this subchapter, may be used if approved by the Associate Administrator. The large packaging must conform to the construction standards, performance testing and packaging marking requirements specified in the UN Recommendations (incorporated by reference, see § 171.7 of this subchapter)

\* \* \* \* \*

68. In § 178.812, paragraph (c)(1) would be revised and a new paragraph (c)(3) would be added to read as follows:

**§ 178.812 Top lift test.**

\* \* \* \* \*

(c) *Test method.* (1) A metal or flexible IBC must be lifted in the manner for which it is designed until clear of the floor and maintained in that position for a period of five minutes.

\* \* \* \* \*

(3) If not tested as indicated in paragraph (c)(1) of this section, a flexible IBC design type must be tested as follows:

- (i) Fill the flexible IBC to 95% full with a material representative of the product to be shipped.
- (ii) Suspend the flexible IBC by its lifting devices.
- (iii) Apply a constant downward force through a specially designed platen. The platen will be a minimum of 60% and

a maximum of 80% of the cross sectional surface area of the flexible IBC.

(iv) The combination of the mass of the filled flexible IBC and the force applied through the platen must be a minimum of six times the maximum net mass of the flexible IBC. The test must be conducted for a period of five minutes.

(v) Other equally effective methods of top lift testing and preparation may be used with approval of the Associate Administrator.

\* \* \* \* \*

**PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS**

69. The authority citation for part 180 would continue to read as follows:

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

70. Subpart G would be added to part 180 to read as follows:

**Subpart G—Qualification and Maintenance of Portable Tanks**

Sec.

- 180.601 Applicability.
- 180.603 Qualification of portable tanks.
- 180.605 Requirements for retest, inspection or repair of portable tanks.

**Subpart G—Qualification and Maintenance of Portable Tanks**

**§ 180.601 Applicability.**

This subpart prescribes requirements, in addition to those contained in parts 107, 171, 172, 173, and 178 of this subchapter, applicable to any person responsible for the continuing qualification, maintenance or periodic retesting of a portable tank.

**§ 180.603 Qualification of portable tanks.**

- (a) Each portable tank used for the transportation of hazardous materials must be an authorized packaging.
- (b) To qualify as an authorized packaging, each portable tank must conform to the requirements of this subchapter or the applicable specification to which the portable tank was constructed.
- (c) The following portable tanks are authorized for use provided they conform to all applicable safety requirements of this subchapter: 51, 56,

57, 60, IM 101, IM 102 and UN portable tanks.

(d) A portable tank that also meets the definition of “container” in 49 CFR 450.3(a)(3) must conform to the requirements in parts 450 through 453 of this title for compliance with Annex II of the Convention for Safe Containers (CSC).

(e) *Exemption portable tanks based on DOT 51 portable tanks.* The owner of a portable tank constructed in accordance with and used under an exemption issued prior to August 31, 1996, which was in conformance with the requirements for Specification DOT 51 portable tanks with the exception of the location of fill and discharge outlets, shall examine the portable tank and its design to determine if it meets the outlet requirements in effect on October 1, 1999. If the owner determines that the portable tank is in compliance with all requirements of the DOT 51 specification, the exemption number stenciled on the portable tank shall be removed and the specification plate (or a plate placed adjacent to the specification plate) shall be durably marked “DOT 51–E\*\*\*\*\*” (where \*\*\*\*\* is to be replaced by the exemption number). During the period the portable tank is in service, and for one year thereafter, the owner of the portable tank must retain on file at its principal place of business a copy of the last exemption in effect.

**§ 180.605 Requirements for retest, inspection or repair of portable tanks.**

(a) A portable tank constructed in accordance with a DOT specification for which a test or inspection specified in this section has become due, may not be filled and offered for transportation or transported until the test or inspection has been successfully completed. This paragraph (a) does not apply to any portable tank filled prior to the test or inspection due date.

(b) *Conditions requiring test and inspection of portable tanks.* Without regard to any other test or inspection requirements, a Specification or UN portable tank must be tested and inspected in accordance with this section prior to further use if any of the following conditions exist:

- (1) The portable tank shows evidence of bad dents, corroded or abraded areas,

leakage, or any other condition that might render it unsafe for transportation service.

(2) The portable tank has been in an accident and has been damaged to an extent that may adversely affect its ability to retain the hazardous material.

(3) The portable tank has been out of hazardous materials transportation service for a period of one year or more.

(4) The portable tank has been modified from its original design specification.

(5) The Department so requires based on the existence of probable cause that the portable tank is in an unsafe operating condition.

(c) *Schedule for initial and periodic inspections and tests.* Each Specification portable tank must be tested and inspected in accordance with the following schedule:

(1) Each IM or UN portable tank must be given an initial inspection and test before being placed into service, a periodic inspection and test at least once every five years, and an intermediate periodic inspection and test at least every 2.5 years following the last five-year periodic inspection and test.

(2) Each Specification 51 portable tank must be given a periodic inspection and test at least once every five years.

(3) Each Specification 56 or 57 portable tank must be given a periodic inspection and test at least once every 2.5 years.

(4) Each Specification 60 portable tank must be given a periodic inspection and test at the end of the first 4-year period after the original test; at least once every 2 years thereafter up to a total of 12 years of service; and at least once annually thereafter. Retesting is not required on a rubber-lined tank except before each relining.

(d) *Initial inspection and test.* The initial inspection and test of a portable tank must include the following:

(1) A check of the design characteristics;

(2) An internal and external examination of the portable tank and its fittings, taking into account the hazardous materials to be transported;

(3) A hydrostatic pressure test as specified in paragraph (i) of this section;

(4) A leakage test;

(5) A test of the satisfactory operation of all service equipment including pressure relief devices must also be performed. When the shell and its fittings have been pressure-tested separately, they must be subjected to a leakage test after reassembly. All welds subject to full stress level in the shell must be inspected during the initial test by radiographic, ultrasonic, or another

suitable non-destructive test method.

This does not apply to the jacket;

(6) A UN portable tank that meets the definition of "container" in the CSC (see 49 CFR 450.3(a)(2)) must be subjected to an impact test using a prototype representing each design type. The prototype portable tank must be shown to be capable of absorbing the forces resulting from an impact not less than 4 times (4 g) the maximum permissible gross mass of the fully loaded portable tank at a duration typical of the mechanical shocks experienced in rail transportation. A listing of standards describing methods acceptable for performing the impact test are provided in the UN Recommendations (incorporated by reference, see § 171.7 of this subchapter);

(7) The following tests must be completed on a portable tank that is also a CSC container without leakage or deformation that would render the tank unsuitable for transportation and use:

(i) *Longitudinal inertia.* The tank loaded to its maximum gross weight must be positioned with its longitudinal axis vertical. It shall be held in this position for five minutes by support at the lower end of the base structure providing vertical and lateral restraint and by support at the upper end of the base structure providing lateral restraint only.

(ii) *Lateral inertia.* The tank loaded to its maximum gross weight must be positioned for five minutes with its transverse axis vertical. It shall be held in this position for five minutes by support at the lower side of the base structure providing vertical and lateral restraint and by support at the upper side of the base structure providing lateral restraint only.

(e) *Intermediate periodic inspection and test.* The intermediate periodic inspection and test must include at least an internal and external examination of the portable tank and its fittings taking into account the hazardous materials intended to be transported; a leakage test; and a test of the satisfactory operation of all service equipment. Sheathing, thermal insulation, etc. need only to be removed to the extent required for reliable appraisal of the condition of the portable tank. For portable tanks intended for the transportation of a single hazardous material, the internal examination may be waived if it is leakage tested in accordance with the procedures in paragraph (i) of this section prior to each filling, or if approved by the Associate Administrator.

(f) *Periodic inspection and test.* The periodic inspection and test must include an internal and external

examination and, unless excepted, a hydraulic pressure test as specified in this section. Sheathing, thermal insulation, etc. need only to be removed to the extent required for reliable appraisal of the condition of the portable tank. Reclosing pressure relief devices must be removed from the tank and tested separately. For portable tanks where the shell and equipment have been pressure-tested separately, after assembly they must be subjected together to a leakage test.

(g) *Exceptional inspection and test.* The exceptional inspection and test is necessary when a portable tank shows evidence of damaged or corroded areas, or leakage, or other conditions that indicate a deficiency that could affect the integrity of the portable tank. The extent of the exceptional inspection and test must depend on the amount of damage or deterioration of the portable tank. It must include at least the intermediate inspection and a hydrostatic test according paragraph (e) of this section. Pressure relief devices need not be tested or replaced unless there is reason to believe the relief devices have been affected by the damage or deterioration.

(h) *Internal and external examination.* The internal and external examinations must ensure that:

(1) The shell is inspected for pitting, corrosion, or abrasions, dents, distortions, defects in welds or any other conditions, including leakage, that might render the portable tank unsafe for transportation;

(2) The piping, valves, and gaskets are inspected for corroded areas, defects, and other conditions, including leakage, that might render the portable tank unsafe for filling, discharge or transportation;

(3) Devices for tightening manhole covers are operative and there is no leakage at manhole covers or gaskets;

(4) Missing or loose bolts or nuts on any flanged connection or blank flange are replaced or tightened;

(5) All emergency devices and valves are free from corrosion, distortion and any damage or defect that could prevent their normal operation. Remote closure devices and self-closing stop-valves must be operated to demonstrate proper operation;

(6) Required markings on the portable tank are legible and in accordance with the applicable requirements; and

(7) The framework, the supports and the arrangements for lifting the portable tank are in satisfactory condition.

(i) *Pressure test procedures for specification 51, 57, 60, IM or UN portable tanks.* (1) Each Specification 57 portable tank must be leak tested by a

minimum sustained air pressure of at least three psig applied to the entire tank. Each Specification 51 or 56 portable tank must be tested by a minimum pressure (air or hydrostatic) of at least 2 psig or at least one and one-half times the design pressure (maximum allowable working pressure, or re-rated pressure) of the tank, whichever is greater. Leakage tests for all other portable tanks must be at a pressure of at least 25% of MAWP. During each air pressure test, the entire surface of all joints under pressure must be coated with or immersed in a solution of soap and water, heavy oil, or other material suitable for the purpose of detecting leaks, but in no case less than five minutes. The pressure must be held for a period of time sufficiently long to assure detection of leaks. During the air or hydrostatic test, relief devices may be removed, but all the closure fittings must be in place and the relief device openings plugged. Lagging need not be removed from a lagged tank if it is possible to maintain the required test pressure at constant temperature with the tank disconnected from the source of pressure.

(2) Each Specification 60 portable tank must be retested by completely filling the tank with water or other liquid having a similar viscosity, the temperature of which shall not exceed 100 °F during the test, and applying a pressure of 60 psig. The tank shall be capable of holding the prescribed pressure for at least 10 minutes without leakage, evidence of impending failure, or failure. All closures shall be in place while the test is made and the pressure shall be gauged at the top of the tank. Safety devices and/or vents shall be plugged during this test.

(3) Each Specification IM or UN portable tank, except for UN portable tanks used for liquefied compressed gases and all piping, valves and accessories, except pressure relief devices, must be hydrostatically tested with water, or other liquid of similar density and viscosity, to a pressure not less than 150% of its maximum allowable working pressure. UN portable tanks used for liquefied compressed gases must be

hydrostatically tested with water, or other liquid of similar density and viscosity, to a pressure not less than 130% of its maximum allowable working pressure. The minimum test pressure for a portable tank is determined on the basis of the hazardous materials that are intended to be transported in the tanks. Minimum test pressure for specific hazardous materials are specified in the applicable T Codes assigned to a particular hazardous material in the § 172.101 Table of this subchapter. While under pressure the tank shall be inspected for leakage, distortion, or any other condition which might render the tank unsafe for service. A portable tank fails to meet the requirements of the pressure test if, during the test, there is permanent distortion of the tank exceeding that permitted by the applicable specification; if there is any leakage; or if there are any deficiencies. Any portable tank that fails must be rejected and may not be used again for the transportation of a hazardous material unless the tank is adequately repaired, and, thereafter, a successful test is conducted in accordance with the requirements of this paragraph. An approval agency shall witness the hydrostatic test. Any damage or deficiency that might render the portable tank unsafe for service shall be repaired to the satisfaction of the witnessing approval agency. The repaired tank must be hydrostatically retested. Upon successful completion of the hydrostatic test, the witnessing approval agency shall apply its name, identifying mark or identifying number in accordance with paragraph (l) of this section.

(j) *Rejection criteria.* When evidence of any unsafe condition is discovered, the portable tank may not be returned to service until it has been corrected and the pressure test is repeated and passed.

(k) *Repair.* The repair of a portable tank is authorized, provided such repairs are made in accordance with the requirements prescribed in the specification for the tank's original design and construction. In addition to any other provisions of the specification, no portable tank may be

repaired so as to cause leakage or cracks or the likelihood of leakage or cracks near areas of stress concentration due to cooling metal shrinkage in welding operations, sharp fillets, reversal of stresses, or otherwise. No field welding may be done except to non-pressure parts. In all cases, when cutting, burning or welding operations on the shell have been affected, that work must be done with the approval of the approval agency and be done in accordance with the requirements of this subchapter, taking into account the pressure vessel code used for the construction of the shell. A pressure test to the original test pressure must be performed after the work is completed.

(l) *Inspection and test markings.* Each portable tank must be durably and legibly marked, in English, with the date (month and year) of the last hydrostatic test, the identification markings of the approval agency witnessing the test when required, and the date of the last visual inspection. The marking must be placed on or near the metal identification plate in letters not less than 3 mm (0.118 inches) high when on the metal identification plate and 32 mm (1.25 inches) high when on the portable tank.

(m) *Record retention.* The owner of each portable tank or his authorized agent shall retain a written record of the date and results of all required inspections and tests, and the name and address of the person performing the inspection or test, until the next retest has been satisfactorily completed and recorded. In addition, a manufacturer's data report of the portable tank must be procured and retained in the files of the owner during the time that such portable tank is used for such service, except for Specifications 56 and 57 portable tanks.

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**Robert A. McGuire,**

*Associate Administrator for Hazardous Materials Safety.*

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