

**DEPARTMENT OF TRANSPORTATION****Coast Guard****33 CFR Part 151****46 CFR Parts 30, 150, 151, and 153**

[USCG 2000-7079]

RIN 2115-AF96

**Noxious Liquid Substances, Obsolete Hazardous Materials in Bulk, and Current Hazardous Materials in Bulk**

AGENCY: Coast Guard, DOT.

ACTION: Direct final rule.

**SUMMARY:** The Coast Guard revises its rules on carriage of hazardous materials in bulk, treating the rules in three parts. This three-part revision will update the tables of hazardous materials transportable in bulk and better inform persons shipping any such materials of those materials' compatibility and of requirements for special handling. It should make the carriage of such materials safer.

**DATES:** This rule is effective March 8, 2001, unless a written adverse comment or a written notice of intent to file one reaches the Docket Management Facility on or before February 6, 2001. If either does reach the Facility, the Coast Guard may withdraw this rule and publish a timely notice of withdrawal in the **Federal Register**. If neither does, the Coast Guard will publish a document affirming the effectiveness of this rule. If an adverse comment applies to an amendment, a section, or a paragraph of this rule and we can withdraw that provision without defeating the purpose of this rule, we may withdraw that provision and adopt as final only the other provisions.

**ADDRESSES:** Please identify your comments and related material for this rulemaking by the number of the docket [USCG 2000-7079]. To make sure they do not enter the docket more than once, please submit them by only one of the following means:

(1) By mail to the Facility, U.S. Department of Transportation, room PL-401, 400 Seventh Street SW., Washington, DC 20590-0001.

(2) In person to room PL-401 on the Plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202-366-9329.

(3) By fax to the Facility at 202-493-2251.

(4) Electronically through the Web site for the Docket Management System at <http://dms.dot.gov>.

**FOR FURTHER INFORMATION CONTACT:** For questions on this rule, call Mr. Curtis G. Payne, Project Manager, Hazardous Materials Standards Division, Coast Guard, telephone 202-267-1217. For questions on viewing or submitting material to the docket, call Dorothy Beard, Chief, Dockets, Department of Transportation, telephone 202-366-9329.

The Facility maintains the public docket for this rulemaking. Comments and material received from the public, as well as documents mentioned in this preamble as being available in the docket, will become part of this docket. You may inspect or copy them at room PL-401 on the Plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find them on the Internet at <http://dms.dot.gov>.

**SUPPLEMENTARY INFORMATION:** We are revising our rules on Noxious Liquid Substances (NLSs) to include substances recently authorized for carriage by the Coast Guard or added to the Chemical Codes of the International Maritime Organization (IMO) and by making minor technical and editorial changes. We are revising our rules, tables, and lists on carriage of hazardous materials in bulk by deleting from our rules, tables, and lists commodities that are no longer liquid cargoes transportable in bulk, and by canceling the classifications of obsolete commodities not included in those rules, tables, and lists. We are revising our rules on carriage of hazardous materials in bulk by adding cargoes recently authorized for carriage by the Coast Guard or added to the Chemical Codes of the IMO and by making minor technical and editorial changes.

**Request for Comments**

The Coast Guard encourages you to participate in this rulemaking by submitting comments and related material. If you do so, please include your name and address, identify the number of the docket for this rulemaking [USCG 2000-7079], indicate the specific section of this document to which each comment applies, and give the reason for each comment. You may submit your comments and material by mail, in person, by fax, or electronically to the Facility at the address under **ADDRESSES**; but please submit your comments and material by only one means. If you submit them by mail or in

person, submit them in an unbound format, no larger than 8 1/2 by 11 inches, suitable for copying and electronic filing. If you submit them by mail and would like to know they reached the Facility, please enclose a stamped, self-addressed postcard or envelope. We will consider all comments and material received during the comment period. We may change this rule in view of them.

**Regulatory Information**

The Coast Guard is publishing a direct final rule, the procedures for which are outlined in 33 CFR 1.05-55, because it anticipates no adverse comment. If no written adverse comment or written notice of intent to submit one reaches the Facility within the specified comment period, this rule will become effective as stated in the **DATES** section. In that case, about 30 days before the effective date, we will publish a document in the **Federal Register** stating that we received no written adverse comments or written notice and confirming that this rule will become effective as scheduled. However, if we receive either, we will publish a document in the **Federal Register** announcing withdrawal of all or part of this rule. If an adverse comment applies to an amendment, a section, or a paragraph of this rule and we can withdraw the affected provision without defeating the purpose of this rule, we may withdraw that provision and adopt as final only the other provisions. If we decide to proceed with a rulemaking even after receipt of an adverse comment, we will withdraw the direct final rule and publish a separate notice of proposed rulemaking (NPRM) and provide a new opportunity for comment.

A comment is "adverse" if it explains why this rule would be inappropriate, by reason of either its premise or its approach, or would be ineffective or unacceptable without a change.

**Background and Purpose**

Because the United States is a party to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), the Coast Guard must amend its rules to ensure that they stay consistent with the Chemical Codes of the IMO.

In this rule, we address Noxious Liquid Substances, Obsolete Hazardous Materials, and Current Hazardous Materials in Bulk.

**Noxious Liquid Substances**

The Coast Guard is revising its list of Category D other-than-oil-like NLSs, 33

CFR 151.47, and of Category D oil-like NLSs, 33 CFR 151.49(b).

The Coast Guard is revising its list of Category D NLSs by including in this list new entries added by Part C of this rule to Table 30.25-1 of 46 CFR and Tables 1 and 2 of 46 CFR part 153.

These are chemicals recently authorized or added to two Chemical Codes of the IMO: "International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk" (IBC Code), and "Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk" (BCH Code). This rule mainly updates our lists of chemicals in 33 CFR part 151. Further, because the names of several entries have changed, we will change them in the lists.

IMO has reevaluated several of the Category D chemicals so that they now belong to Pollution Category "III" or count both as "safety" hazards and as "pollution" hazards. Therefore, this rule will remove those currently in the lists.

#### Obsolete Hazardous Materials

IMO publishes the Circular of the Marine Environmental Protection Committee (MEPC), "Provisional Categorization of Liquid Substances," a list of commodities whose carriage as bulk liquid cargoes it permits but that it has not yet entered into its Chemical Codes. It reissues the Circular in December of each year. The current edition is MEPC.2/Circ.5, dated December 17, 1999. The purpose of the Circular is to publish " \* \* \* the lists of products, the pollution category and minimum carriage requirements of which have been established through Tripartite Agreements and registered with the Secretariat \* \* \* " of the Subcommittee on Bulk Liquids and Gases (BLG) of the IMO.

Of the commodities listed in the Circular, those that have been submitted by the various Administrations to the Working Group on Evaluation of Safety and Pollution Hazards (ESPH) of Chemicals, or that are mixtures of pollutant-only materials, appear in the lists without date of expiry. All other commodities appear with dates of expiry of three years from when first published in the Circular. This grace period of three years is to allow the proposed new commodity to be submitted to the Working Group for final evaluation and inclusion in the Codes, or, as is most often the case, to allow time for any testing that may be needed to complete the data form from IMO where the data were missing in the original submission. At the end of the grace period, any commodity not submitted to the Working Group drops

from the Circular and is no longer eligible for carriage in bulk. This rule identifies those commodities.

Last, the Coast Guard periodically reviews its rules, tables, and lists to determine whether any commodities in 33 and 46 CFR are no longer being either manufactured at all or moved in bulk by vessel, and are therefore appropriate for deletion. For interested parties, a preliminary list of commodities that may have become obsolete appears in supplemental material available in the docket [USCG 2000-7079] from the Docket Management Facility.

#### Current Hazardous Materials in Bulk

This rule updates various hazardous materials tables in 46 CFR parts 30, 150, 151, and 153 to include new chemicals and requirements authorized by international law or by other of our rules. This rule would also make other non-substantive editorial changes.

Supplemental material is available in the docket [USCG 2000-7079], again from the Docket Management Facility.

#### Discussion of Changes

##### Noxious Liquid Substances

(a) IMO has assigned the following chemicals to Pollution Category D. We will enter them in 33 CFR 151.47, Category D NLSs other than oil-like Category D NLSs that may be carried under this part.

Aluminum sulfate solution  
Coconut oil fatty acid methyl ester  
Copper salt of long chain (C17+) alkanolic acid  
Dialkyl (C8-C9) diphenylamines  
Ethoxylated long chain (C16+) alkyloxyalkanamine  
Glyphosate solution (not containing surfactant)  
Methyl amyl ketone  
Polyolefin amide alkeneamine (C17+)  
Sulfonated polyacrylate solution  
Sulfurized fat (C14-C20)  
Sulfurized polyolefinamide alkene (C28-C250) amine

(b) IMO has reevaluated five chemicals in Pollution Category D and assigned them as cargoes in Pollution Category "III". We will remove them from § 151.47. They are:

Decane  
Decylbenzene  
Dialkyl (C10-C14) benzenes  
Lecithin (soyabean)  
Zinc alkenyl carboxamide

(c) IMO has reevaluated several chemicals and has, on the basis of this, designated them as both "safety" hazards and "pollution" hazards. We will remove them from § 151.47. They are:

Diethanolamine  
2-Ethoxyethanol  
Ethylene glycol ethyl ether  
Ethylene glycol isopropyl ether  
Ethylene glycol methyl ether  
Ethylene glycol monoalkyl ethers

(d) One entry, "palm kernel oil, fatty acid methyl ester" is obsolete. We will remove it from § 151.47.

(e) We will move names incorrectly cross-referred to under "Polypropylene glycol methyl ether" so they correctly cross-refer to "Propylene glycol monoalkyl ether."

(f) We will remove "Diisopropyl naphthalene" from the list of Category D oil-like NLSs in 33 CFR 151.49(b). We revised the Pollution Category for this chemical according to the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) Hazard Profile. The new Category is "A." This leaves paragraph (b) an empty set, but we will reserve it.

##### Obsolete Hazardous Materials

We identify below commodities canceled and deleted from the IMO Circular MEPC.2/Circ.5, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES, and also canceled and deleted from our rules, tables, and lists. We identify the commodities by the IMO Tripartite List in which they appeared with the number of the list in the right-hand column.

IMO Tripartite Lists, MEPC.2/Circ.5, Provisional Categorization of Liquid Substances

List 1: Pure or technically pure substances.

List 2: Pollutant only mixtures classified by calculation or assessed as a mixture.

List 3: Trade-named substances with safety hazards.

List 4: Pollutant only mixtures with greater than 3% unassessed components.

A diamond "♦" preceding the name of the cargo indicates the sponsorship of the cargo by the Coast Guard for the U.S. in the Tripartite Agreement process. The absence of a diamond indicates sponsorship of the cargo by an Administration of another country, counterpart to the Coast Guard.

In light of the foregoing, we cancel all chemicals below, referred to in one or another of the four Tripartite Lists, and delete them as bulk liquid cargoes. They are no longer transportable in bulk by the water mode.

## Commodities Deleted From IMO Tripartite Lists, MEPC.2

CIRC.1, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (18 DEC. 1995)		CAT-SUB-	CIRC.1, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (18 DEC. 1995)—Continued		CAT-SUB-	CIRC.1, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (18 DEC. 1995)—Continued	
Commodity name (descriptor)	List		Commodity name (descriptor)	List		Commodity name (descriptor)	List
◆ A-964 (ammonium long chain alkaryl sulfonate).	4		◆ MCP 955A (polyisobutenyl anhydride adduct).	4	◆	OLOA 8177 (zinc alkyl dithiophosphate (C3-C14)).	4
◆ AL 150 (alkyl(C18-C65) benzene).	4		◆ MD-E-18 (aliphatic C18 ethers and C19 ether alcohol).	4	◆	OLOA 8177C (zinc alkyl dithiophosphate (C3-C14)).	4
◆ Alcohol(C9-C11)(primary)ethoxylated.	1		◆ MD-E-20 (aliphatic C20 ethers and C21 ether alcohol).	4	◆	OLOA 8179 (zinc alkyl dithiophosphate (C3-C14)).	4
NOTE: This chemical has been renamed "Alcohol(C9-C11) poly(2.5-9) ethoxylate", which is currently a valid cargo name.			◆ MOBIL Stock 2631 (zinc alkyl dithiophosphate(C3-C14)).	4	◆	OLOA 8179A (zinc alkyl dithiophosphate (C3-C14)).	4
◆ AMOCO 2400 (zinc alkyl dithiophosphate (C3-C14) and polyolefin amide alkeneamine polyol).	4		◆ OGA 478 (polyolefin amine) .....	4	◆	OLOA 8380G (zinc alkyl dithiophosphate (C3-C14)).	4
◆ AMOCO 8072F (zinc alkyl dithiophosphate(C3-C14)).	4		◆ OLOA 2564A (polyolefin anhydride).	4	◆	OLOA 8380V (zinc alkyl dithiophosphate (C3-C14)).	4
◆ AMOCO 9267 (polybutyl phenol)	4		◆ OLOA 2564B (polyolefin anhydride).	4	◆	OLOA 857P (alkyl phenol) .....	4
◆ Antifreeze 511 (ethylene glycol)	4		◆ OLOA 2820 (diphenylamine reaction product with 2,2,4-trimethylpentene and zinc alkyl dithiophosphate (C3-C14)).	4	◆	OLOA 8804E (zinc alkyl dithiophosphate (C3-C14)).	4
◆ AO 5301 (polyolefin amine) .....	4		◆ OLOA 2990 (calcium long chain alkyl phenate sulfide(C8-C40)).	4	◆	OLOA 8818 (zinc alkyl dithiophosphate (C3-C14) and polyolefin amide alkeneamine polyol).	4
◆ ARCOL Polyol 1905 (1,2,3-propane triol polymer with oxirane and methyloxirane).	4		◆ OLOA 6039M (alkyl phenate sulfide).	4	◆	OLOA 8850 (zinc alkyl dithiophosphate (C3-C14)).	4
◆ Atar cresylic acid (cresols) .....	3		◆ OLOA 6063U (alkyl phenol) .....	4	◆	OLOA 8858 (diphenylamines, alkylated).	4
◆ BEROLAMINE 20 (alkanolamines).	3		◆ OLOA 6109 (alkyl phenate sulfide).	4	◆	OLOA 8858B (diphenylamine (C6-C15) alkylation product).	4
◆ Brake fluid component 5/9 (polyether polyols).	4		◆ OLOA 6121 (alkyl phenol) .....	4	◆	OLOA 9091 (alkyl phenate sulfide).	4
◆ Brake Fluid ET 462 (triethylene glycol methyl ether, polyether triols).	4		◆ OLOA 6832 (zinc alkyl dithiophosphate (C3-C14)).	4	◆	OMA 431 CS(D) (alkyl(C7-C9) nitrates).	3
◆ CALTEX CODE 599067 (alkyl phenate sulfide).	4		◆ OLOA 6847 (zinc alkyl dithiophosphate (C3-C14)).	4	◆	ORA 502 (polyolefin amine) .....	4
◆ CALTEX CODE 599178 (alkyl phenate sulfide).	4		◆ OLOA 6847D (polyolefin amide alkeneamine polyol and zinc alkyl dithiophosphate (C3-C14)).	4	◆	ORA 702 (polyolefin amine) .....	4
◆ 1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone.	1		◆ OLOA 6848 (diphenylamines, alkylated).	4	◆	OXYOLVE 80 (aliphatic ketones).	4
◆ Co-solvent alcohol (propyl alcohol).	4		◆ OLOA 6853 (zinc alkyl dithiophosphate (C3-C14) and polyolefin amide alkeneamine polyol).	4	◆	PARANOX 5277 (zinc alkyl dithiophosphate(C3-C14)).	4
◆ Depitched tar acid (phenols, cresols).	3		◆ OLOA 6854 (diphenylamines, alkylated).	4	◆	PARAPOID 48 (alkylamine (C17+)).	4
◆ 2-Ethylhexyl-2-(2,4-dichlorophenoxy) propionate.	1		◆ OLOA 6856 (diphenylamines, alkylated).	4	◆	Pibsa (polyolefin anhydride) .....	4
◆ HiTEC 244 (sulpho hydrocarbon, long chain alkyl amine mixture).	4		◆ OLOA 6858 (diphenylamines, alkylated).	4	◆	Polyalkyl methacrylate (C1-C20)	1
◆ HiTEC 370 (sulpho hydrocarbon, alkenyl dialkyl dithiophosphate mixture).	4		◆ OLOA 6859 (diphenylamines, alkylated).	4	◆	REOFOS 65 (isopropylated phenyl phosphate).	4
◆ HiTEC 4782 (methylene bridged isobutylated phenols).	4		◆ OLOA 6859D (polyolefin amide alkeneamine polyol and polyolefin ester).	4	◆	REOFOS 95 (isopropylated phenyl phosphate).	4
◆ Light end/Heavy end Chlorinated hydrocarbon mixture.	3		◆ OLOA 6881 (alkyl phenate sulfide).	4	◆	SAP 9413 (alcohol(C12-C15) propoxylate).	4
◆ LINCOL 86M (1-decanol) .....	4		◆ OLOA 6981 (alkyl phenate sulfide).	4	◆	Sodium chromate liquor .....	1
◆ LM 114 (ethoxylated nonylphenol).	3		◆ OLOA 8167FA (zinc alkyl dithiophosphate(C3-C14)).	4	◆	STOCK 1462 (alkylamine (C17+)).	4
◆ M-50-A (calcium and magnesium long chain alkaryl sulfonates).	3		◆ OLOA 8167G (zinc alkyl dithiophosphate (C3-C14)).	4	◆	Tallow nitrile (Tallow (alkyl nitrile)).	1
◆ MANRO SXS 40 (alkylbenzene sulfonic acid, sodium salt solution).	3		◆ OLOA 8172 (zinc alkyl dithiophosphate (C3-C14)).	4	◆	TLA 2400 (zinc alkyl dithiophosphate (C3-C14)).	4
◆ MCP 121 (ditridecyl adipate) .....	4		◆ OLOA 8172A (zinc alkyl dithiophosphate (C3-C14)).	4	◆	TLA 2418 (zinc alkyl dithiophosphate (C3-C14)).	4
◆ MCP 239B (polyisobutenyl anhydride adduct).	4		◆ OLOA 8172A (zinc alkyl dithiophosphate (C3-C14)).	4	◆	TLA 2421 (zinc alkyl dithiophosphate (C3-C14)).	4
			◆ OLOA 8172M (zinc alkyl dithiophosphate (C3-C14)).	4	◆	TLA 2422 (zinc alkyl dithiophosphate (C3-C14)).	4
					◆	TLA 2427 (diphenylamines, alkylated and polyolefin amide alkeneamine (C28+)).	4
					◆	TLA 2906A (zinc alkyl dithiophosphate (C3-C14)).	4
					◆	TLA 2907 (zinc alkyl dithiophosphate (C3-C14)).	4

CIRC.1, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (18 DEC. 1995)—Continued

Commodity name (descriptor)	List
TLA 2907A (zinc alkyl dithiophosphate (C3-C14) and calcium long chain alkaryl sulfonate).	4
TRILIN (TRIFLURALIN (A,A,A-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine)).	4
VAMMAR D9 (aliphatic C18 ethers and C19 ether alcohol).	4
VAMMAR D10 (aliphatic C20 ethers and C21 ether alcohol).	4
VORANOL CP 4100 S Polyol (polyether polyols).	4

CIRC.2, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1996)

Commodity name (descriptor)	List
Aliphatic(C18-C20) ethers and alkyl(C20-C21) ether alcohols mixtures.	1
2-Ethyl-6-methyl-N-(2-methoxy-1-methyl ethyl) aniline.	1
Monomer 981 (polyalkyl(C12-C15) methacrylates).	3
OLOA 390 (calcium salts of fatty acids).	4
PARATEMPS 15 (decyl alcohol)	4
PC-709 (polyoxyalkylamine) .....	4
Potassium polysulfide, Potassium thiosulfate solution (41% or less).	1

CIRC.3, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1997)

Commodity name (descriptor)	List
Alkaryl polyethers (C65-C95) ....	1
Arcol 1131 (1,2,3-propanetriol polymer).	4
Crude Dipe (diisopropyl ether and 2-methylpent-2-ene).	3
Diphenyl cresyl phosphate .....	1
MCP 1064D (naphthalene) .....	4
MOBILAD C241B (naphthalene)	4
OGA 558R (alkaryl polyethers (C65-C95)).	4
OLOA 6741 (methylene bridged isobutenylated phenols).	4
OLOA 758A (calcium stearate)	4
OLOA 6743 (methylene bridged isobutenylated phenols).	4
OMA 4391 (alkyl(C7-C9) nitrates).	3
PARADYNE 740 (mineral oil) ....	4
PARANOX 152 (mineral oil) .....	4
PARANOX 1155 (methylene bridged isobutenylated phenols).	4
Pentacos(oxypropane-2,3-diyl)s.	1

CIRC.3, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1997)—Continued

Commodity name (descriptor)	List
POBA (alkaryl polyethers (C65-C95)).	4
RGA 900 (alkyl(C7-C9) nitrates)	3
Stock 2921.0 (naphthalene) .....	4
TFA-4711 (naphthalene) .....	4
TLA-2422A (zinc alkyl dithiophosphate (C3-C14)).	4

CIRC.4, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1998)

Commodity name (descriptor)	List
HiTEC 162 (polyolefin (mw 300+)).	2
HiTEC 164 (polyolefin (mw 300+)).	2
HiTEC 168 (polyolefin (mw 300+)).	2
HiTEC 318 (sulphohydrocarbon, long chain (C18+) alkyl amine mixture).	2
HiTEC 612 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 613 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 615 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 619 (alkylphenol sulfide)	2
HiTEC 644 (polyolefin amide alkeneamine (C28+)).	2
HiTEC 646 (polyolefin amide alkeneamine (C28+)).	2
HiTEC 648 (polyolefin amide alkeneamine borate (C28-C250)).	2
HiTEC 685 (zinc alkyl dithiophosphate (C3-C8)).	2
HiTEC 921 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 1102 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2403 (mineral oil) .....	2
HiTEC 2769 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2831 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2837 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2908 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2933 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 2934 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 4103 .....	2
HiTEC 4105 .....	2
HiTEC 4738 (methylene bridged isobutylated phenols).	2
HiTEC 4940 (naphthalene) .....	2
HiTEC 4941 (polyolefin phenolic amine (C28-C250)).	2
HiTEC 4949 (naphthalene) .....	2
HiTEC 4950 (naphthalene) .....	2
HiTEC 4961 .....	2
HiTEC 4963A (naphthalene) ....	2

CIRC.4, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1998)—Continued

Commodity name (descriptor)	List
HiTEC 4980 (trimethylbenzene (all isomers)).	2
HiTEC 4992 (naphthalene) .....	2
HiTEC 4997 (naphthalene) .....	2
HiTEC 6653 (sulphohydrocarbon (C3-C88)).	2
HiTEC 7011 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7023 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7034 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7049 (polyolefin phenolic amine (C28-C250)).	2
HiTEC 7065 (polyolefin phenolic amine (C28-C250)).	2
HiTEC 7084 (sulphohydrocarbon (C3-C88)).	2
HiTEC 7100 (polyolefin amide alkeneamine borate (C28-C250)).	2
HiTEC 7160 (calcium long chain alkyl phenate (C8-C40)).	2
HiTEC 7169 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7198 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7222 .....	2
HiTEC 7239 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7243 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7303 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7304 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7305 (zinc alkyl dithiophosphate (C3-C14) and polyolefin phenolic amine (C28-C250)).	2
HiTEC 7333 (zinc alkyl dithiophosphate (C3-C14) and polyolefin phenolic amine (C28-C250)).	2
HiTEC 7334 (calcium long chain alkyl phenate (C8-C40)).	2
HiTEC 7365 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7383 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7405 (zinc alkyl dithiophosphate (C3-C14) and calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7410 (diphenylamines, alkylated).	2
HiTEC 7465 (calcium long chain alkyl phenate (C8-C40)).	2
HiTEC 7562 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7569 (calcium long chain alkaryl sulfonate (C11-C50)).	2
HiTEC 7576 (zinc alkyl dithiophosphate (C3-C14)).	2
HiTEC 7635 (magnesium long chain alkaryl sulfonate (C11-C50)).	2

CIRC.4, PROVISIONAL CATEGORIZATION OF LIQUID SUBSTANCES (17 DEC. 1998)—Continued

Commodity name (descriptor)	List		HiTEC
◆ HiTEC 7636 ( <i>magnesium long chain alkaryl sulfonate (C11-C50)</i> ).	2	Caustic and petroleum residue (dated 30 Mar 90)	162
◆ HiTEC 7650 ( <i>polyolefin (mw 300+) in mineral oil</i> ).	2	Contaminated waste water (dated 20 Mar 85)	164
◆ HiTEC 7714 ( <i>polyolefin amide alkeneamine borate (C28-C250)</i> ).	2	Pond waste water (dated 23 Mar 87)	168
◆ HiTEC 7720 ( <i>polyolefin amide alkeneamine borate (C28-C250)</i> ).	2	Rainwater contaminated with pink/red water (dated 19 Oct 83)	244
◆ HiTEC 7741 ( <i>polyolefin phenolic amine (C28-C250)</i> ).	2	Waste water (aniline production) (dated 28 Sep 90)	318
◆ HiTEC 7744 ( <i>polyolefin phenolic amine (C28-C250)</i> ).	2	Waste water, Bottom sediment sludge (wood preserving process) (dated 25 Feb 83)	370
◆ HiTEC 7829 ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Waste water (coal tar distillation) (dated 20 Apr 94)	612
◆ HiTEC 7957 ( <i>diphenylamines, alkylated</i> ).	2	Waste water (pond waste water) (dated 11 Sep 97)	613
◆ HiTEC 9268 ( <i>polybutyl phenol</i> ).	4	Waste water (Santos, Brazil) (dated 15 Jan 93)	615
◆ HiTEC 9290 ( <i>aryl polyolefin (C11-C50)</i> ).	2	The commodities entered below are ones that we had evaluated for carriage and had included in our rules but ones that information we hold indicates no longer to be valid bulk liquid cargoes. We are removing them from our rules, tables, and lists. Again, they are:	619
◆ HiTEC 9298 ( <i>aryl polyolefin (C11-C50)</i> ).	2	Potassium polysulfide, Potassium thiosulfate solution (41% or less)	644
◆ LUBRIZOL 3580P ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Propanil, Mesityl oxide, Isophorone mixture	646
◆ LUBRIZOL 4720A ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Trifluralin in Xylene	648
◆ LUBRIZOL 4723B ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	The following commodities, being ones whose classifications the IMO cancelled or ones the Coast Guard believes are no longer viable bulk liquid cargoes, are no longer transportable by the water mode as cargoes in bulk.	685
◆ LUBRIZOL 4837W ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	A-964	921
◆ LUBRIZOL 4856J ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	AL 150	1102
◆ LUBRIZOL 4887 ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Alkaryl polyethers (C65-C95)	2403
◆ LUBRIZOL 4898S ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Alcohol(C9-C11)(primary)ethoxylated	2769
◆ LUBRIZOL 4911F ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	AMOCO 2400	2831
◆ LUBRIZOL 4912 ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	AMOCO 8072F	2837
◆ LUBRIZOL 4923 .....	2	AMOCO 9267	2908
◆ LUBRIZOL 4975G ( <i>diphenylamines, alkylated</i> ).	2	Antifreeze 511	2933
◆ LUBRIZOL 73725 ( <i>mineral oil</i> ) ..	2	AO 5301	4103
◆ LUBRIZOL 74888 ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	Arcol 1131 (1,2,3-propanetriol polymer)	4105
◆ LUBRIZOL 74890 ( <i>diphenylamines, alkylated</i> ).	2	ARCOL Polyol 1905	4738
◆ LUBRIZOL 78008 ( <i>oleylamine</i> )	2	Atar cresylic acid	4782
◆ LUBRIZOL 8888Z ( <i>zinc alkyl dithiophosphate (C3-C14)</i> ).	2	BEROLAMINE 20	4940
◆ MOBILAD 232 ( <i>decyl alcohol (all isomers)</i> ).	2	Brake fluid component 5/9	4941
Natural (animal/vegetable) fatty acids, (C16-C20) sat/unsat., methyl esters and triglycerides, sulfurized.	1	Brake Fluid ET 462	4949
◆ t-Octylamine .....	1	CALTEX CODE 599067	4950
◆ OLOA 246B ( <i>calcium long chain alkaryl sulfonate (C11-C50)</i> ).	2	CALTEX CODE 599178	4961
◆ SAP 3333 ( <i>calcium long-chain alkyl salicylate (C13+)</i> ).	1	Caustic and petroleum residue (dated 30 Mar 90)	4963A
◆ TFA-4655 ( <i>xylene-toluene mixture and polyolefin amine</i> ).	2	1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone	4980
		Contaminated waste water (dated 20 Mar 85)	4980
		Co-solvent alcohol	4992
		Crude Diipe	4997
		Depitched tar acid	6653
		Diphenyl cresyl phosphate	7011
		2-Ethylhexyl-2-(2,4-dichlorophenoxy) propionate	7023
			7034
			7049
			7065
			7084
			7100
			7160
			7169
			7198
			7222
			7239
			7243
			7303
			7304
			7305
			7333
			7334
			7365
			7383
			7405
			7410
			7465
			7562
			7569
			7576
			7635
			7636
			7650
			7714
			7720
			7741
			7744
			7829
			7957
			9268
			9290
			9298
			Light end/Heavy end Chlorinated hydrocarbon mixture

LINCOL 86M	OLOA 8172A	Waste water (coal tar distillation) (dated 20 Apr 94)
LM 114	OLOA 8172M	Waste water (Pond waste water) (dated 11 Sep 97)
LUBRIZOL 3580P	OLOA 8177	Waste water (Santos, Brazil) (dated 15 Jan 93)
LUBRIZOL 4720A	OLOA 8177C	
LUBRIZOL 4723B	OLOA 8179	
LUBRIZOL 4837W	OLOA 8179A	
LUBRIZOL 4856J	OLOA 8380G	
LUBRIZOL 4887	OLOA 8380V	
LUBRIZOL 4898S	OLOA 857P	
LUBRIZOL 4911F	OLOA 8804E	
LUBRIZOL 4912	OLOA 8818	
LUBRIZOL 4923	OLOA 8850	
LUBRIZOL 4975G	OLOA 8858	
LUBRIZOL 73725	OLOA 8858B	
LUBRIZOL 74888	OLOA 9091	
LUBRIZOL 74890	OMA 431 CS(D)	
LUBRIZOL 78008	OMA 4391	
LUBRIZOL 8888Z	ORA 502	
M-50-A	ORA 702	
MANRO SXS 40	OXYSOLVE 80	
MCP 121	PARADYNE 740	
MCP 239B	PARANOX 1155	
MCP 955A	PARANOX 5277	
MCP 1064D	PARAPOID 48	
MD-E-18	Pentacos(oxypropane-2,3-diyl)s	
MD-E-20	Pibsa	
MOBILAD 232	POBA	
MOBILAD C241B	Pond waste water (dated 23 Mar 87)	
MOBIL Stock 2631	Potassium polysulfide, Potassium thiosulfate solution (41% or less)	
Natural (animal/vegetable) fatty acids, (C16-C20) sat/unsat., methyl esters and triglycerides, sulfurized	Propanil, Mesityl oxide, Isophorone mixture	
t-Octylamine	Rainwater contaminated with pink/red water (dated 19 Oct 83)	
OGA 558R	REOFOS 95	
OGA 4784	REOFOS 664	
OLOA 246B	RGA 900	
OLOA 758A	SAP 3333	
OLOA 2564A	SAP 9413	
OLOA 2564B	Sodium chromate liquor	
OLOA 2820	STOCK 1462	
OLOA 2990	Stock 2921.0	
OLOA 6039M	TFA-4655	
OLOA 6063U	TFA-4711	
OLOA 6109	TLA 2400	
OLOA 6121	TLA 2418	
OLOA 6741	TLA 2421	
OLOA 6743	TLA 2422	
OLOA 6832	TLA-2422A	
OLOA 6847	TLA 2427	
OLOA 6847D	TLA 2906A	
OLOA 6848	TLA 2907	
OLOA 6853	TLA 2907A	
OLOA 6854	TRILIN (TRIFLURALIN)	
OLOA 6856	Trifluralin in Xylene	
OLOA 6858	VAMMAR D9	
OLOA 6859	VAMMAR D10	
OLOA 6859D	VORANOL CP 4100 S Polyol	
OLOA 6881	Waste water (aniline production) (dated 28 Sep 90)	
OLOA 6981	Waste water, Bottom sediment sludge (wood preserving process) (dated 25 Feb 83)	
OLOA 8167FA		
OLOA 8167G		
OLOA 8172		

**Current Hazardous Materials in Bulk**

(a) We add a number of new cargoes to 46 CFR Tables 30.25-1, 151.05, and 1 and 2 of part 153. These comprise cargoes recently authorized by the Coast Guard and cargoes headed for the two Chemical Codes of the IMO—"International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk" (IBC Code) and "Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk" (BCH Code)—but not yet included in our rules. Among these cargoes are new ones approved at the IMO Subcommittee on Bulk Liquids and Gases (BLG), first session, BLG 1, held March 4-8, 1996; the second intersessional meeting (ESPH 2), held September 23-7, 1996; the BLG 2 meeting held April 7-11, 1997; the ESPH 3 meeting held October 13-7, 1997; the BLG 3 meeting held July 6-10, 1998; the ESPH 4 meeting held September 28 through October 2, 1998; the BLG 4 meeting held April 12-6, 1999; and the ESPH 5 meeting held October 18-22, 1999.

(b) From 46 CFR Table 30.25-1, Tables I and II of part 150, Table 151.05, and Tables 1 and 2 of part 153, we remove all bold-faced type wherever it appears and add, in its place, Roman type. Likewise, in the "Cargoes" columns, we remove every "•" and "+" that precedes the name of a cargo.

(c) We revise the "Compatibility of Cargoes" tables in part 150 to include the chemicals added by this rule to the tables of hazardous materials in 46 CFR parts 30, 151, and 153.

Of specific note, we revised the Compatibility Groups of several lube-oil additives (LOAs). After discussions with the manufacturer of the LOAs' reactivity potential, we determined that the Group to which we had originally assigned each does not represent its true reactivity.

	Current	New
Calcium long chain alkyl phenolicamine (C8-C40) .....	Group 7 .....	Group 9.
Polyolefin amide alkeneamine borate (C28-C250) .....	Group 34 .....	Group 33.
Polyolefin amide alkeneamine polyol .....	Group 7 .....	Group 20.
Polyolefin amine (C28-C250) .....	Group 7 .....	Group 33.
Polyolefin amine in alkyl- benzenes (C2-C4) .....	Group 7 .....	Group 32.
Polyolefin aminoester salt .....	Group 7 .....	Group 34.
Sulfurized polyolefinamide alkene-amines (C28-C250) .....	Group 7 .....	Group 33.

This rule also corrects several current names of cargoes and cross-refers to other entries in part 150.

(d) In its continued effort to maintain consistency between the rules on tankships (part 153) and those on tank barges (part 151), where applicable, the Coast Guard is adding to Table 1 of part 153 the special requirement in § 153.933, "Chemical protective clothing," for the commodities below:

- (1) Acetic acid
- (2) Acetic anhydride
- (3) Formic acid
- (4) Phosphoric acid
- (5) Propionic acid

By this means the Coast Guard brings Table 1 of part 153, like § 153.933, into substantial conformity with the rule on tank barges at § 151.50-73, "Chemical protective clothing."

(e) In keeping with paragraph (d), the Coast Guard is also applying the special requirement of § 153.933 to the entry "Diethyl sulfate." (The manufacturer recommended this.)

(f) We will "downgrade" many cargo names in the various tables and lists. These are names whose use as proper cargo names we currently allow but that we cross-refer to other names. That is, they will become non-names (by appearing in *Italics* and cross-referring to proper cargo names). See the Table of Changes.

(g) Cargo-specific actions of particular interest:

(1) Alkyl (C7-C9) nitrates. Correct the Pollution Category from A to B in Table 1 of 46 CFR part 153.

(2) Ammonium bisulfite. When ammonium bisulfite entered Table 1 of part 153 [60 FR 34051 (June 29, 1995)], we inadvertently omitted special requirement § 153.526, Toxic vapor detectors. With this rule we correct that oversight.

(3) Ammonium sulfide solution (45% or less). We correct the Pollution Category from C to B in Table 1 of part 153.

(4) Benzene hydrocarbon mixtures (containing Acetylenes) (having 10% Benzene or more), Benzene hydrocarbon mixtures (having 10% Benzene or more), and Benzene, Toluene, Xylene mixtures (having 10% Benzene or more). In Table 151.05, we added § 151.50-60 to the section Special Requirements. Final rule CGD 88-040 [56 FR 52112 (October 17, 1991)], which added this requirement, inadvertently did not also add it to the three entries in our rules on tank barges. We are correcting that oversight.

(5) Carbon tetrachloride. In Table I of part 150, carbon tetrachloride, Group 36 (Halogenated hydrocarbons), is not

compatible with tetraethylenepentamine or triethylenetetramine, both Group 7 (Aliphatic amines).

(6) Caustic potash solution. We correct the Pollution Category from D to C in Table 1 of part 153.

(7) Dodecyl hydroxypropyl sulfide. The IMO has finalized the set of requirements for carriage of this commodity, bringing about two significant changes. First, IMO originally assigned this commodity to a cargo-containment system of type II (ship type 2) with the special requirement in § 153.409, High level alarms, and with a Provisional Pollution Category of A, or "[A]." Second, it has finally assigned it to a cargo-containment system of type I (ship type 1) with the special requirement in § 153.408, Tank overflow control, and with a final Pollution Category of A. The Coast Guard is revising its lists and tables to reflect these final assignments.

(8) Fatty acids (saturated, C13+). IMO has revised the cargo name "fatty acids (saturated, C13+)" to read "fatty acids (saturated, C14+)," a change in the carbon-range designator. It had to do this because an entry exists for "tridecanoic acid" a C13 fatty acid with a Pollution Category of B. But the current name "fatty acids (saturated, C13+)," Pollution Category III, includes "tridecanoic acid." The Coast Guard is revising its lists and tables to pick up this change.

(9) 2-Hydroxyethyl acrylate. The Coast Guard has reevaluated the Compatibility Group, Part 150, for the cargo "2-hydroxyethyl acrylate" and assigned the cargo to Group 14, Acrylates. Currently, 2-Hydroxyethyl acrylate resides in Group 0 with restriction against stowage adjacent to Groups 2, 3, 5 to 8, and 12 in the Compatibility Chart. Its reassignment to Group 14 will retain both the current prohibition against stowage adjacent to Groups 5, 6, and 12 and the standard prohibition for Group 14 against stowage adjacent to Groups 2, 3, 7, and 8. Thus, there is no change in the actual requirements.

(10) Polyolefin amide alkeneamine (C28+). The Coast Guard has reevaluated the Compatibility Group, Part 150, for the cargo "Polyolefin amide alkeneamine (C28+)." Discussions with a manufacturer of this commodity have shown that the current assignment, to Group 7 (Amines), is inappropriate for these materials, which contain only a small fraction of unreacted amine and whose mineral-oil content acts as a buffer to any possible remaining hazardous reactivity. Upon review, we have determined that Group 33 (Miscellaneous hydrocarbon

mixtures) is the more appropriate Compatibility Group for this cargo.

(11) Sodium sulfide solution (15% or less). We correct the Pollution Category from C to B in Table 1 of Part 153.

(12) 1,2,3-Trichloropropane. In table I of Part 150, 1,2,3-trichloropropane, Group 36 (Halogenated hydrocarbons), is not compatible with ethylenediamine, diethylenetriamine, or triethylenetetramine, all of Group 7 (Aliphatic amines).

(h) We otherwise correct or modify, as appropriate, current entries in the various lists and tables.

(i) New entries to Table 30.25-1:  
 Alcohol (C9-C11) poly(2.5-9)ethoxylate  
 Alkanes (C6-C9)  
 Alkyl ester copolymer (C4-C20)  
 Alkyl (C7-C11) phenol poly(4-12)ethoxylates  
 Alkyl (C8-C40) phenol sulfide  
 Alkyl (C9-C15) phenyl propoxylate  
 Alkyl sulfonic acid ester of phenol tert-Amyl methyl ether  
 Butyl alcohol (all isomers)  
 Calcium long chain alkyl (C5-C10) phenate  
 Calcium long chain alkyl (C11-C40) phenate  
 Copper salt of long chain (C17+) alkanolic acid  
 Dialkyl (C8-C9) diphenylamines  
 Ditridecyl adipate  
 Dodecyl hydroxypropyl sulfide  
 Ethoxylated long chain (C16+) alkyloxyalkanamine  
 Ethyl tert-butyl ether  
 Glyphosate solution (not containing surfactant)  
 1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)naphthalene mixture  
 2-Methyl-1,3-propanediol  
 Phosphate esters, alkyl (C12-C14) amine  
 Polyisobutenyl anhydride adduct  
 Polyolefin amide alkeneamine (C17+)  
 Potassium salt of polyolefin acid  
 Sulfurized fat (C14-C20)  
 Sulfurized polyolefinamide alkene (C28-C250) amine

(j) New entries to Table 151.05:  
 Alkylbenzenesulfonic acid (greater than 4%)  
 Cashew nut shell oil (untreated)  
 Cyclohexanone, Cyclohexanol mixture  
 Cyclopentadiene, Styrene, Benzene mixture  
 Dodecyl phenol  
 Glyoxylic acid solution (50% or less)  
 Toluenediamine  
 o-Toluidine

(k) New entries to Table 1 of Part 153:  
 Alcohol (C9-C11) poly (2.5-9) ethoxylate  
 Alkenyl (C16-C20) succinic anhydride  
 Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomer)

Alkyl (C8–C9) phenylamine in aromatic solvent  
 Alkyl (C10–C20, saturated and unsaturated) phosphite  
 Alkyl (C8–C10) polyglucoside solution (65% or less)  
 Alkyl (C12–C14) polyglucoside solution (55% or less)  
 Alkyl (C8–C10)/(C12–C14): (40% or less/60% or more) polyglucoside solution (55% or less)  
 Alkyl (C8–C10)/(C12–C14): (50/50%) polyglucoside solution (55% or less)  
 Alkyl (C8–C10)/(C12–C14): (60% or more/40% or less) polyglucoside solution (55% or less)  
 tert-Amyl methyl ether  
 Barium long chain (C11–C50) alkaryl sulfonate  
 Calcium long chain alkyl (C5–C10) phenate  
 1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one  
 N,N-Dimethyldodecylamine  
 Diphenylamine (molten)  
 Dithiocarbamate ester (C7–C35)  
 Dodecyl hydroxypropyl sulfide

Dodecyl-Octadecyl methacrylate mixture  
 Ethyl tert-butyl ether  
 S-Ethyl dipropylthiocarbamate  
 Glyoxylic acid solution (50% or less)  
 Hexamethylenediamine (molten)  
 Hexamethylene diisocyanate  
 N,N-bis(2-Hydroxyethyl) oleamide  
 3-(Methylthio)propionaldehyde  
 Nitroethane, 1-Nitropropane (each 15% or more) mixture  
 Paraldehyde-Ammonia reaction product  
 n-Pentanoic acid (64%), 2-Methyl butyric acid (36%) mixture  
 Phosphate esters, alkyl (C12–C14) amine  
 Polyisobutenamine in aliphatic (C10–C14) solvent  
 Polyolefinamine (C28–C250)  
 Poly(tetramethylene ether) glycols (mw 950–1050)  
 Potassium thiosulfate (50% or less)  
 1,2,4-Trichlorobenzene (molten)  
 Xylenes, Ethylbenzene (10% or more) mixture  
 (l) New entries to Table 2 of Part 153:  
 Ammonium thiosulfate solution (60% or less)

Sulfonated polyacrylate solution  
 Titanium dioxide slurry  
 (m) We have determined three entries in our tables and lists not to be bulk liquid cargoes, and will delete them. They are:  
 (1) Potassium polysulfide, Potassium thiosulfate solution (41% or less)  
 (2) Propanil, Mesityl oxide, Isophorone mixture  
 (3) Trifluralin in Xylene  
 One issue addressed in the supplemental material in the docket involves the supposed potential for incompatible stowage of isocyanate cargoes, Group 12, and water solutions of chemical cargoes. (See Appendix I [60 FR 34053 (June 29, 1995)]). Shippers and carriers of such cargoes should review the supplemental material available in the docket [USCG 2000–7079] for further information.  
 This Table of Changes lists all changes to existing entries with a brief explanation where helpful:

TABLE OF CHANGES

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Acetic acid .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
Acetic anhydride .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
Alachlor technical and Alachlor technical (90% or more).	Alachlor .....	No change .....	No change .....	
Alcohols (C13 and above)	.....	.....	.....	Delete the entry in its entirety.
Alcohols (C13+) .....	Alcohols (C13+) ..... Including: Oleyl alcohol (octadecanol) Pentadecanol Tallow alcohol Tetradecanol Tridecanol	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Alcohol(C12-C15) poly(1-3)ethoxylates.	.....	.....	.....	Delete the entry in its entirety.
Alcohol(C12-C15) poly(3-11) ethoxylates.	.....	.....	.....	Delete the entry in its entirety.
Alcohol(C12-C15) poly(1-6)ethoxylates.	Alcohol(C12-C16) poly(1-6)ethoxylates.	No change .....	No change .....	Increase upper carbon, "C" range from "C15" to "C16"
Alcohol(C12-C15) poly(7-19)ethoxylates.	Alcohol(C12-C16) poly(7-19)ethoxylates.	No change .....	No change .....	Increase upper carbon, "C" range from "C15" to "C16".
Alcohol(C12-C15) poly(20+) ethoxylates.	Alcohol(C12-C16) poly(20+) ethoxylates.	No change .....	No change .....	Increase upper carbon, "C" range from "C15" to "C16".

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Alkanes (C6-C9) .....	Alkanes (C6-C9) ..... Including: Heptanes Hexanes Nonanes Octanes	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
n-Alkanes (C10+) .....	n-Alkanes (C10+) ..... Including: Decanes Dodecanes Heptadecanes Tridecanes Undecanes	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Alkenylsuccinic anhydride	Alkenyl(C16-C20) succinic anhy- dride.	# .....	D .....	
Alkyl(C3-C4) benzenes ....	Alkyl(C3-C4) benzenes ..... Including: Butylbenzenes Propylbenzenes	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Alkyl(C5-C8) benzenes ....	Alkyl(C5-C8) benzenes ..... Including: Amylbenzenes Heptylbenzenes Hexylbenzenes Octylbenzenes	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Alkyl(C9-C17) benzenes ..	.....	.....	.....	Delete the entry in its entirety.
Alkyl(C9+) benzenes .....	Alkyl(C9+)benzenes ..... Including: Decylbenzenes Dodecylbenzenes Nonylbenzenes Tetradecylbenzenes Tetrapropylbenzenes Tridecylbenzenes Undecylbenzenes	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Alkyl ester copolymer (C6-C18).	Alkyl ester copolymer (C4-C20) ...	[D] .....	D .....	
Alkyl(C7-C9) nitrates .....	No change .....	A .....	B .....	46 CFR 153, Table I: Correct Pollu- tion Category.
Alkyl(C7-C12) phenol poly(4-12)ethoxylate.	Alkyl(C7-C11) phenol poly(4- 12)ethoxylate.	No change .....	No change .....	Correct the upper carbon, "C" range from "C12" to "C11".
Alkylphenol sulfide (C8- C40).	Alkyl (C8-C40) phenol sulfide .....	[D] .....	D .....	
Ammonia, aqueous, see Ammonium hydroxide.	Ammonia, aqueous [IMO cargo name], see Ammonium hydrox- ide.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Ammonium bisulfite solu- tion (70% or less).	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Special re- quirement .526 added.
Ammonium sulfide solu- tion (45% or less).	No change .....	C .....	B .....	46 CFR 153, Table I: Correct Pollu- tion Category.
(commercial, iso-, n-, sec- ) Amyl acetate.	.....	.....	.....	Delete the entry in its entirety.
Amyl acetate (iso-, n-) .....	.....	.....	.....	Delete the entry in its entirety.
Amylene .....	Pentene .....	No change .....	No change .....	

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Animal and Fish acid oils and distillates, n.o.s.	Animal and Fish acid oils and distillates, n.o.s. Including: Cod liver oil Lanolin Neatsfoot oil Pilchard oil Sperm oil	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Animal and Fish oils, n.o.s.	Animal and Fish oils, n.o.s ..... Including: Animal acid oil Fish acid oil Lard acid oil Mixed acid oil Mixed general acid oil Mixed hard acid oil Mixed soft acid oil	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Benzene hydrocarbon mixtures (containing Acetylenes) (having 10% Benzene or more).	No change .....	No change .....	Not applicable .....	46 CFR 151, Table 151.05: Special requirement .50-60 added.
Benzene hydrocarbon mixtures (having 10% Benzene or more).	No change .....	No change .....	Not applicable .....	46 CFR 151, Table 151.05: Special requirement .50-60 added.
Benzene, Toluene, Xylene mixtures (having 10% Benzene or more).	No change .....	No change .....	Not applicable .....	46 CFR 151, Table 151.05: Special requirement .50-60 added.
Benzene hydrocarbon mixtures <sup>2</sup> (having 10% Benzene or more).	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Special requirement "16" corrected to read ".316".
(iso-, n-) Butyl acetate .....	.....	.....	.....	Delete the entry in its entirety.
(sec-) Butyl acetate .....	.....	.....	.....	Delete the entry in its entirety.
iso-Butyl acrylate .....	.....	.....	.....	46 CFR 151, Table 151.05: Delete from table.
n-Butyl acrylate .....	.....	.....	.....	46 CFR 151, Table 151.05: Delete from table.
(iso-, n-) Butyl acrylate ....	.....	.....	.....	Delete the entry in its entirety.
Butyl alcohol (iso-, n-, sec-, tert-).	Butyl alcohol (all isomers) .....	No change .....	No change .....	
Butylbenzene and Butylbenzene (all isomers).	Alkyl(C3-C4) benzenes .....	No change .....	No change .....	
Butylene polyglycol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
iso-Butyl isobutyrate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
n-Butyl butyrate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
iso-Butyraldehyde .....	.....	.....	.....	46 CFR 153, Table 1: Delete from table.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
n-Butyraldehyde .....	.....	.....	.....	46 CFR 153, Table 1: Delete from table.
Calcium alkyl salicylate ....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Calcium long chain alkyl phenolic amine (C8-C40).	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 9, from Group 7.
Carbon tetrachloride .....	.....	.....	.....	Exception to 46 CFR 150, Table I.
Caustic potash solution ...	No change .....	D .....	C .....	46 CFR 153, Table I: Correct Pollution Category, and Hazard category from "S" to "S/P".
Cresylic acid, sodium salt solution, see Cresylate spent caustic.	Cresylic acid, sodium salt solution [IMO cargo name], see Cresylate spent caustic.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Cumene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Cyclopentadiene, Styrene, Benzene mixture.	.....	.....	.....	46 CFR 151, Table 151.01: Add Special Requirement 151.50-60.
Cyclopentadiene polymers	.....	.....	.....	46 CFR 30, Table 30.25-1: Delete the entry in its entirety.
Decane .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Decylbenzene .....	Alkyl(C9+)benzenes .....	D .....	III .....	
Dextrose solution .....	Glucose solution .....	No change .....	No change .....	
Dialkyl(C10-C14) benzenes.	Alkyl(C9+)benzenes .....	D .....	III .....	
Dialkyl(C7-C13) phthalates.	Dialkyl(C7-C13) phthalates .....	No change .....	No change .....	46 CFR 150, Table I.
	Including: Diisodecyl phthalate Diisononyl phthalate Dinonyl phthalate Ditridecyl phthalate Diundecyl phthalate			
Dibutyl carbinol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
1,1-, 1,2-, or 1,3-Dichloropropane.	.....	.....	.....	Delete the entry in its entirety.
Diethylaminoethanol, see Diethylethanolamine.	Diethylaminoethanol [IMO cargo name], see Diethylethanolamine.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Diethylene glycol butyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol butyl ether acetate.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Diethylene glycol ethyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol ethyl ether acetate.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol n-hexyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol methyl ether acetate.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylene glycol propyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diethylenetriamine .....	.....	.....	.....	Exception to 46 CFR 150, Table I.
Diethyl ether, see Ethyl ether.	Diethyl ether [IMO cargo name], see Ethyl ether.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Di-(2-ethylhexyl) phthalate	Diocetyl phthalate .....	D .....	III .....	Cross-reference to the correct proper cargo name.
Diethyl sulfate .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
Diisobutyl carbinol .....	Diisobutyl carbinol [industrial name], see also Nonyl alcohol.	.....	.....	46 CFR 150, Table I: Identify industrial cargo name.
Diisodecyl phthalate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Diisononyl phthalate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Dimethylpolysiloxane .....	Polydimethylsiloxane .....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
2,2-Dimethyl propane-1,3-diol.	2,2-Dimethylpropane-1,3-diol (molten or solution).	No change .....	No change .....	
Dinonyl phthalate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Dipropylene glycol butyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Dipropylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Ditridecyl phthalate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Diundecyl phthalate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Dodecane .....	n-Alkanes (C10+) .....	No change .....	No change .....	
Dodecyl alcohol .....	Dodecyl alcohol [IMO cargo name], see Dodecanol.	.....	.....	46 CFR 150, Table I: Identify IMO Cargo name.
Dodecylbenzene .....	Alkyl(C9+)benzenes .....	No change .....	No change .....	
Dodecyl hydroxypropyl sulfide.	.....	[A] .....	A .....	46 CFR 153, Table I: Ship type I from II; Sp. Requirement .408 replacing .409.
Ethoxylated alcohols, C11-C15.	.....	.....	.....	46 CFR 30, Table 30.25-1: Delete the entry in its entirety.
Ethylenediamine .....	.....	.....	.....	Exception to 46 CFR 150, Table I.
Ethylene glycol ethyl ether acetate.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Ethylene glycol hexyl ether.	Ethylene glycol monoalkyl ethers	.....	.....	46 CFR 153, Table 1: Add the cross-reference under the first entry in the table.
Ethylene glycol monoalkyl ethers.	Ethylene glycol monoalkyl ethers Including: 2-Ethoxyethanol Ethylene glycol butyl ether Ethylene glycol tert-butyl ether Ethylene glycol ethyl ether +Ethylene glycol hexyl ether Ethylene glycol methyl ether Ethylene glycol n-propyl ether Ethylene glycol isopropyl ether	.....	.....	46 CFR 150, Table I.
Ethylene glycol monoalkyl ethers.	.....	.....	.....	46 CFR 153, Table 1: Delete the second entry in its entirety.
Ethylene glycol propyl ether.	.....	.....	.....	Delete the entry in its entirety.
2-Ethylhexanoic acid .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
2-Ethylhexanol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
2-Ethylhexyl acrylate .....	.....	.....	.....	46 CFR 151, Table 151.05: Temp. control install. Column, replace I-D with NA.
Fatty acid (saturated, C13 and above).	.....	.....	.....	Delete the entry in its entirety.
Fatty acid (saturated, C13+).	Fatty acid (saturated, C14+) .....	No change .....	No change .....	Increase lower carbon, "C" range from "C13" to "C14".
Formic acid .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
Glycidyl ester of C10 trialkyl acetic acid, see Glycidyl ester of tridecyl acetic acid.	Glycidyl ester of C10 trialkyl acetic acid [IMO cargo name], see Glycidyl ester of tridecyl acetic acid.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Heptadecane .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Heptane (all isomers) .....	Alkanes (C6-C9) .....	No change .....	No change .....	
Hexaethylene glycol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Hexane (all isomers) .....	Alkanes (C6-C9) .....	No change .....	No change .....	
Hydrofluorosilicic acid (25% or less).	.....	.....	.....	46 CFR 151, Table 151.05: Delete from table.
Hydroxy terminated polybutadiene, see Polybutadiene, hydroxyl terminated.	Hydroxy terminated polybutadiene [IMO cargo name], see Polybutadiene, hydroxy terminated.	Not applicable .....	Not applicable .....	Revise US cargo name. 46 CFR 150, Table I: Identify IMO Cargo name.
Isopropylbenzene (Cumene).	.....	.....	.....	46 CFR 153, Table 1: A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Lauryl polyglucose (50% or less).	Alkyl(C12-C14) polyglucoside solution (55% or less).	[B] .....	B .....	46 CFR 153, Table 1.
Lecithin (soybean) .....	Lecithin .....	[D] .....	III .....	
Lignin sulfonic acid, sodium salt solution.	Sodium lignosulfonate solution or Lignin liquor.	No change .....	No change .....	46 CFR 153, Table 2.
Magnesium nonyl phenol sulfide.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Magnesium sulfonate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
N-(2-Methoxy-1-methylethyl)2-ethyl-6-methyl chloroacetanilide, see Metolachlor.	N-(2-Methoxy-1-methylethyl)2-ethyl-6-methyl chloroacetanilide [IMO cargo name], see Metolachlor.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Methoxy triglycol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Methyl butynol .....	2-Methyl-2-hydroxy-3-butyne .....	No change .....	No change .....	46 CFR 30, Table 30.25-1: Delete from table; safety hazard.
2-Methyl-2-hydroxy-3-butyne.	No change .....	III .....	D .....	46 CFR 153, Table 1.
Methyl isobutyl carbinol ...	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Methyl pentene; 2-Methyl pentene; 4-Methyl pentene;	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
o-Nitrochlorobenzene .....	.....	.....	.....	Delete the entry in its entirety.
Nonane (all isomers) .....	Alkanes (C6-C9) .....	No change .....	No change .....	
Nonyl phenol (ethoxylated).	.....	.....	.....	Delete the entry in its entirety.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Nonyl phenol poly(4-12) ethoxylates.	Nonyl phenol poly(4+) ethoxylates	No change .....	No change .....	
Nonyl phenol sulfide (90% or less).	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Octane (all isomers) .....	Alkanes (C6-C9) .....	No change .....	No change .....	
Octyl nitrates (all isomers)	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Oil misc: Coconut oil, esterified.	.....	.....	.....	46 CFR 30, Table 30.25-1: Delete the entry in its entirety.
Oil misc: Coconut oil, methyl ester.	.....	.....	.....	46 CFR 30, Table 30.25-1: Delete the entry in its entirety.
Oil misc: Cottonseed, fatty acid.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Oil misc: Palm oil, methyl ester.	.....	.....	.....	46 CFR 30, Table 30.25-1: Delete the entry in its entirety.
Organic amine 70 .....	.....	.....	.....	46 CFR 30, Table 30.25- 1: Delete the entry in its entirety.
n-Paraffins (C10-C20) .....	.....	.....	.....	Delete the entry in its entirety.
Pentasodium salt of Diethylenetriamine pentaacetic acid solution.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Pentene, Miscellaneous hydrocarbon mixture.	.....	.....	.....	Delete the entry in its entirety.
Phosphoric acid .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
Phthalate plasticizers .....	.....	.....	.....	46 CFR 30, Table 30.25- 1: Delete the entry in its entirety.
Pinene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Polyalkylene glycol butyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether. Including: Diethylene glycol butyl ether Diethylene glycol ethyl ether Diethylene glycol n-hexyl ether Diethylene glycol methyl ether Diethylene glycol n-propyl ether Dipropylene glycol butyl ether Dipropylene glycol methyl ether Polypropylene glycol methyl ether Triethylene glycol butyl ether Triethylene glycol ethyl ether Triethylene glycol methyl ether Tripropylene glycol methyl ether	Not applicable .....	Not applicable .....	46 CFR 150, Table I.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.	Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate. Including: Diethylene glycol butyl ether acetate Diethylene glycol ethyl ether acetate Diethylene glycol methyl ether acetate	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Polybutenyl succinimide ..	No Change .....	[D] .....	III .....	
Polybutadiene, hydroxyl terminated.	Polybutadiene, hydroxy terminated.	No change .....	No change .....	Revise name.
Polyethylene glycol monoalkyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Polyolefin amide alkeneamine borate (C28-C250).	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 33, from Group 34.
Polyolefin amide alkeneamine polyol.	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 20, from Group 7.
Polyolefin amine (C28-C250).	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 33, from Group 7.
Polyolefin amine in alkylbenzenes (C2-C4).	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 32, from Group 7.
Polyolefin aminoester salt	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 34, from Group 7.
Polypropylene .....	.....	.....	.....	Delete the entry in its entirety.
Polypropylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Potassium hydroxide solution, see Caustic potash solution.	Potassium hydroxide solution [IMO cargo name], see Caustic potash solution.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Potassium polysulfide, Potassium thiosulfate solution (41% or less).	.....	.....	.....	Delete the entry in its entirety.
Propanil, Mesityl oxide, Isophorone mixture.	.....	.....	.....	Delete the entry in its entirety.
Propionic acid .....	No change .....	No change .....	No change .....	46 CFR 153, Table 1: Protective clothing requirement added.
n-Propoxypropanol (propylene glycol propyl ether).	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
iso-Propylamine solution (70% or less).	.....	.....	.....	46 CFR 153, Table 1: Special Requirements column, replace .1010 with .1020.
iso-Propylbenzene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
n-Propylbenzene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Propylene carbonate .....	No change .....	[III] .....	III .....	
Propylene glycol n-butyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Propylene glycol ethyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Propylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Propylene glycol monoalkyl ether.	Propylene glycol monoalkyl ether Including: n-Propoxypropanol Propylene glycol n-butyl ether Propylene glycol ethyl ether Propylene glycol methyl ether	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Propylene glycol phenyl ether.	.....	[D] .....	D .....	
Propylene glycol propyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Rum .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Sodium hydroxide solution, see Caustic soda solution.	Sodium hydroxide solution [IMO cargo name], see Caustic soda solution.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Sodium naphthenate solution.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Sodium sulfide solution (15% or less).	No change .....	C .....	B .....	46 CFR 153, Table I: Correct Pollution Category.
Stearic acid .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Sulfurized polyolefinamide alkeneamines (C28-C250).	No change .....	Not applicable .....	Not applicable .....	46 CFR 150, Table I: To Group 33, from Group 7.
Tallow alcohol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Tetradecanol .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Tetradecylbenzene .....	Alkyl(C9+)benzenes .....	[D] .....	III .....	
Tetraethylenepentamine ..	.....	.....	.....	Exception to 46 CFR 150, Table I.
1,2,3,5-Tetramethylbenzene.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Tetrasodium salt of Ethylene-diaminetetraacetic acid solution.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Triarylphosphate .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
1,2,3-Trichloropropane .....	.....	.....	.....	Exception to 46 CFR 150, Table I.
Tridecane .....	n-Alkanes (C10+) .....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Tridecene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Tridecylbenzene .....	Alkyl(C9+)benzenes .....	[D] .....	III .....	
Triethylene glycol butyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Triethylene glycol ethyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Triethylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Triethylenetetramine .....	.....	.....	.....	Exception to 46 CFR 150, Table I.
Triflurlin in Xylene .....	.....	.....	.....	Delete the entry in its entirety.
2,2,4-Trimethyl penanediol-1,3-diisobutyrate.	.....	.....	.....	Delete the entry in its entirety.
Tripropylene .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Tripropylene glycol methyl ether.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Trisodium salt of N-(Hydroxyethyl) ethylenediaminetetraacetic acid solution.	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Trixylyl phosphate, see Trixylenyl phosphate.	Trixylyl phosphate [IMO cargo name], see Trixylenyl phosphate.	Not applicable .....	Not applicable .....	46 CFR 150, Table I: Identify IMO Cargo name.
Turpentine substitute .....	.....	.....	.....	A non-cargo name (i.e., Italicized) cross-referenced to a proper cargo name.
Undecylbenzene .....	Alkyl(C9+)benzenes .....	[D] .....	III .....	
Valeraldehyde (iso-, n-) ...	.....	.....	.....	46 CFR 151, Table 151.05: Delete from table.

TABLE OF CHANGES—Continued

Cargo Name		Pollution Category		Comments
Current	Proposed	Current	Proposed	
Vegetable oils, n.o.s .....	Vegetable oils, n.o.s. .... Including: Beechnut oil Castor oil Cocoa butter Coconut oil Corn oil Cottonseed oil Groundnut oil Hazelnut oil Linseed oil Nutmeg butter Oiticica oil Olive oil Palm kernel oil Palm oil Peel oil (oranges and lemons) Perilla oil Poppy oil Raisin seed oil Rapeseed oil Rice bran oil Safflower oil Salad oil Sesame oil Soya bean oil Sunflower seed oil Tucum oil Tung oil Walnut oil	Not applicable .....	Not applicable .....	46 CFR 150, Table I.
Vegetable acid oils and distillates, n.o.s.	Vegetable acid oils and distillates, n.o.s. Including: Corn acid oil Cottonseed acid oil Dark mixed acid oil Groundnut acid oil Mixed acid oil Mixed general acid oil Mixed hard acid oil Mixed soft acid oil Rapeseed acid oil Safflower acid oil Soya acid oil Sunflower seed acid oil	Not applicable .....	Not applicable .....	46 CFR 150, Table I.

**Regulatory Evaluation**

This direct final rule is not a “significant regulatory action” under section 3(f) of Executive Order 12866 and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget has not reviewed it under that Order. It is not “significant” under the regulatory policies and procedures of the Department of Transportation (DOT) (44 FR 11040 (February 26, 1979)). This rulemaking will merely update lists of chemicals by adding cargoes to the lists that the Coast Guard already maintains and by making a few non-substantive editorial changes. We expect the

economic impact of this rule to be so minimal that a full Regulatory Evaluation under paragraph 10e of the regulatory policies and procedures of DOT is unnecessary.

**Small Entities**

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we considered whether this direct final rule will have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

Although this rule is exempt, we have reviewed it for potential impact on small entities. This rule will merely update lists of chemicals by adding cargoes recently authorized by the Coast Guard or added to the IMO Chemical Codes and by making a few non-substantive editorial changes.

Therefore, the Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities. We will evaluate comments submitted in response to this finding under the criteria in the section of this preamble called *Regulatory Information*.

**Assistance for Small Entities**

In accordance with section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104-121), the Coast Guard wants to assist small entities in understanding this direct final rule so that they can better evaluate its effects on them and participate in the rulemaking. If this rule affects your small business or organization and you have questions concerning its provisions or options for compliance, please call Mr. Curtis G. Payne at 202-267-1217.

**Collection of Information**

This direct final rule will call for no collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

**Federalism**

We have analyzed this direct final rule under Executive Order 13132 and have determined that this rule does not have sufficient implications for federalism to warrant the preparation of a Federalism Assessment. Because this rule would merely render current lists already maintained by the Coast Guard in its rules, there are no implications for Federalism.

**Unfunded Mandates Reform Act**

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538) and E.O. 12875, Enhancing the Intergovernmental Partnership (58 FR 58093 (October 28, 1993)), govern the issuance of Federal rules that impose unfunded mandates. An unfunded mandate is a requirement that a State, local, or tribal government or the private sector incur direct costs without the Federal Government's having first provided the funds to pay those costs. This direct final rule will not impose an unfunded mandate.

**Taking of Private Property**

This direct final rule will not effect a taking of private property or otherwise have taking implications under E.O. 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

**Reform of Civil Justice**

This direct final rule meets applicable standards in sections 3(a) and 3(b)(2) of E.O. 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

**Protection of Children**

We have analyzed this direct final rule under E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks. This rule is not an economically significant rule and

does not create an environmental risk to health or risk to safety that may disproportionately affect children.

**Environment**

We considered the environmental impact of this direct final rule and concluded that, under figure 2-1, paragraph (34)(a) of Commandant Instruction M16475.1C, this rule is categorically excluded from further environmental documentation. This rule brings up to date lists already maintained by the Coast Guard in its rules to add chemicals already approved under those rules or under international law and clearly would have no impact on the environment. A Determination of Categorical Exclusion is available in the docket for inspection or copying where indicated under **ADDRESSES**.

**List of Subjects***33 CFR Part 151*

Administrative practice and procedure, Oil pollution, Penalties, Reporting and recordkeeping requirements, Water pollution control.

*46 CFR Part 30*

Cargo vessels, Foreign relations, Hazardous materials transportation, Penalties, Reporting and recordkeeping requirements, Seamen.

*46 CFR Part 150*

Hazardous materials transportation, Marine safety, Occupational safety and health, Reporting and recordkeeping requirements.

*46 CFR Part 151*

Cargo vessels, Hazardous materials transportation, Marine safety, Reporting and recordkeeping requirements, Water pollution control.

*46 CFR Part 153*

Administrative practice and procedure, Cargo vessels, Hazardous materials transportation, Marine safety, Reporting and recordkeeping requirements, Water pollution control.

For the reasons set out in the preamble, the Coast Guard amends 33 CFR Part 151 and 46 CFR parts 30, 150, 151, and 153 as follows:

**Title 33—[Amended]****PART 151—VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER**

1. The citation of authority for part 151 continues to read as follows:

**Authority:** 33 U.S.C. 1321 and 1903; Pub. L. 104-227 (110 Stat. 3034), E.O. 12777, 3 CFR, 1991 Comp., p. 351; 49 CFR 1.46.

**§ 151.05 [Amended]**

2. In § 151.05, add the definition “NLS means Noxious Liquid Substance.” preceding the definition of “NLS Certificate”.

3. Revise the listing in § 151.47 to read as follows:

**§ 151.47 Category D NLSs other than oil-like Category D NLSs that may be carried under this part.**

\* \* \* \* \*

Acetophenone  
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol iso- & cyclo-Alkane (C10-C11)  
Alkenyl(C11+)amine  
Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture  
Alkyl dithiothiadiazole (C6-C24)  
Alkyl ester copolymer (C4-C20)  
Alkyl(C8-C40) phenol sulfide  
Aluminum sulfate solution  
Ammonium hydrogen phosphate solution  
Ammonium nitrate solution (45% or less)  
Ammonium nitrate, Urea solution (2% or less NH<sub>3</sub>)  
Ammonium phosphate, Urea solution  
Ammonium polyphosphate solution  
Ammonium sulfate solution (20% or less)  
Amyl alcohol (iso-, n-, sec-, primary)  
Animal and Fish oils, n.o.s. (*see also Oil, edible*)  
Animal and Fish acid oils and distillates, n.o.s.  
Aryl polyolefin (C11-C50)  
Brake fluid base mixtures  
Butylene glycol  
iso-Butyl formate  
n-Butyl formate  
gamma-Butyrolactone  
Calcium hydroxide slurry  
Calcium long chain alkyl sulfonate (C11-C50)  
Calcium long chain alkyl(C11-C40) phenate  
Calcium long chain alkyl phenate sulfide (C8-C40)  
Caprolactam solutions  
Chlorine chloride solution  
Citric acid (70% or less)  
Coconut oil fatty acid methyl ester  
Copper salt of long chain (C17+) alkanolic acid  
Cyclohexanol  
Decahydronaphthalene  
Diacetone alcohol  
Dialkyl(C8-C9) diphenylamines  
Dialkyl(C7-C13) phthalates  
Diethylene glycol  
Diethylene glycol butyl ether acetate, *see* Poly(2-8) alkylene glycol monoalkyl(C1-C6) ether acetate

Diethylene glycol dibutyl ether	Isophorone	Perilla
Diethylene glycol ethyl ether, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	Lactic acid	Pilchard
Diethylene glycol ethyl ether acetate, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate	Latex (ammonia (1% or less) inhibited)	Soya bean (epoxidized)
Diethylene glycol methyl ether acetate, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate	Long chain alkaryl sulfonic acid (C16- C60)	Sperm
Diethylene glycol phenyl ether	Magnesium long chain alkaryl sulfonate (C11-C50)	Tung
Diethylene glycol phthalate	Magnesium long chain alkyl phenate sulfide (C8-C20)	Whale
Di-(2-ethylhexyl)adipate	3-Methoxybutyl acetate	Olefin/Alkyl ester copolymer (molecular weight 2000+)
1,4-Dihydro-9,10-dihydroxy anthracene, disodium salt solution	Methyl acetoacetate	Oleic acid
Diisobutyl ketone	Methyl alcohol	Palm kernel acid oil, methyl ester
<i>Diisodecyl phthalate, see</i> Dialkyl(C7- C13) phthalates	Methyl amyl ketone	Palm stearin
Diisononyl adipate	Methyl butenol	Pentaethylenhexamine
<i>Diisononyl phthalate, see</i> Dialkyl(C7- C13) phthalates	Methyl butyl ketone	Pentanoic acid
2,2-Dimethylpropane-1,3-diol	Methyl isobutyl ketone	Poly(2-8)alkylene glycol monoalkyl(C1- C6) ether, <i>Including</i> :
<i>Dinonyl phthalate, see</i> Dialkyl(C7-C13) phthalates	Methyl tert-butyl ether	Diethylene glycol butyl ether
Dipropylene glycol dibenzoate	Methyl butynol	Diethylene glycol ethyl ether
Dipropylene glycol methyl ether, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	Methyl propyl ketone	Diethylene glycol n-hexyl ether
<i>Di-tridecyl phthalate, see</i> Dialkyl(C7- C13) phthalates	N-Methyl-2-pyrrolidone	Diethylene glycol methyl ether
<i>Diundecyl phthalate, see</i> Dialkyl(C7- C13) phthalates	Myrcene	Dipropylene glycol butyl ether
Dodeceny succinic acid, dipotassium salt solution	Naphthalene sulfonic acid- formaldehyde copolymer, sodium salt solution	Dipropylene glycol methyl ether
Ethoxylated long chain (C16+) alkyloxyalkanamine	Nonanoic acid (all isomers)	Polypropylene glycol methyl ether
Ethoxy triglycol ( <i>crude</i> )	Nonanoic, Tridecanoic acid mixture	Triethylene glycol butyl ether
2-Ethyl-2-(hydroxymethyl)propane-1,3- diol, C8-C10 ester	Nonyl methacrylate	Triethylene glycol ethyl ether
Ethyl acetate	Noxious Liquid Substance, (17) n.o.s.	Triethylene glycol methyl ether
Ethyl acetoacetate	Octadecenoamide solution	Tripropylene glycol methyl ether
Ethyl butanol	Octanoic acid	Poly(2-8)alkylene glycol monoalkyl(C1- C6) ether acetate, <i>Including</i> :
Ethylenediaminetetraacetic acid, tetrasodium salt solution	Oil, edible:	Diethylene glycol butyl ether acetate
Ethylene glycol	Babassu	Diethylene glycol ethyl ether acetate
Ethylene glycol acetate	Beechnut	Diethylene glycol methyl ether acetate
Ethylene glycol dibutyl ether	Castor	Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures
Ethylene glycol methyl butyl ether	Cocoa butter	Polypropylene glycol methyl ether, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Ethylene glycol phenyl ether	Coconut	Polyalkyl(C10-C20) methacrylate
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture	Cod liver	Polybutenyl succinimide
<i>2-Ethylhexanoic acid, see</i> Octanoic acid	Corn	Polyether (molecular weight 2000+)
Ethyl propionate	Cottonseed	Polyethylene glycol monoalkyl ether
Ferric hydroxyethylethylene diamine triacetic acid, trisodium salt solution	Fish	Polyolefin amide alkeneamine (C17+)
Formamide	Groundnut	Polyolefin amide alkeneamine (C28+)
Glycerine (83%), Dioxanedimethanol (17%) mixture	Hazelnut	Polyolefin amide alkeneamine borate (C28-C250)
Glycerol monooleate	Nutmeg butter	Polyolefin amide alkeneamine polyol
Glyoxal solution (40% or less)	Olive	Polyolefin anhydride
Glyphosate solution (not containing surfactant)	Palm	Polyolefin ester (C28-C250)
Heptanoic acid	Palm kernel	Polyolefin phenolic amine (C28-C250)
Hexamethylenediamine adipate	Peanut	Polyolefin phosphorosulfide, barium derivative
Hexamethylenetetramine solutions	Poppy	Polypropylene glycol
Hexanoic acid	Raisin seed	n-Propyl acetate
Hexanol	Rapeseed	Propylene glycol monoalkyl ether, <i>Including</i> :
N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution	Rice bran	n-Propoxypropanol
	Safflower	Propylene glycol n-butyl ether
	Salad	Propylene glycol ethyl ether
	Sesame	Propylene glycol methyl ether
	Soya bean	Propylene glycol ethyl ether, <i>see</i> Propylene glycol monoalkyl ether
	Sunflower seed	Propylene glycol methyl ether, <i>see</i> Propylene glycol monoalkyl ether
	Tucum	Propylene glycol methyl ether acetate
	Vegetable	Propylene glycol phenyl ether
	Walnut	Sodium acetate solution
	Oil, misc:	Sodium benzoate solution
	Animal, n.o.s.	Sodium carbonate solution
	Coconut oil, esterified	Soybean oil (epoxidized)
	Coconut oil, fatty acid methyl ester	
	Lanolin	
	Linseed	
	Neatsfoot	
	Oiticica	
	Palm oil, fatty acid methyl ester	
	Palm oil, methyl ester	

Sulfohydrocarbon (C3–C88)  
 Sulfonated polyacrylate solution  
 Sulfolane  
 Sulfurized fat (C14–C20)  
 Sulfurized polyolefinamide alkene(C28–C250)amine  
 Tallow  
 Tallow fatty acid  
 Tetrasodium salt of  
     Ethylenediaminetetraacetic acid solution  
 Triethylene glycol butyl ether, see Poly(2–8)alkylene glycol monoalkyl(C1–C6) ether  
 Triethylene glycol ethyl ether, see Poly(2–8)alkylene glycol monoalkyl(C1–C6) ether  
 Triethylene glycol methyl ether, see Poly(2–8)alkylene glycol monoalkyl(C1–C6) ether  
 Triethyl phosphate  
 Trimethylol propane polyethoxylate  
 Tripropylene glycol methyl ether, see Poly(2–8)alkylene glycol monoalkyl(C1–C6) ether  
 Trisodium salt of N-(Hydroxyethyl)-ethylenediamine triacetic acid solution  
 Urea, Ammonium mono- and dihydrogen phosphate, Potassium chloride solution  
 Urea, Ammonium nitrate solution (2% or less NH<sub>3</sub>)  
 Urea, Ammonium phosphate solution  
 Vegetable oils, n.o.s. (see also Oil, edible)  
 Vegetable acid oils and distillates, n.o.s.  
 Waxes:  
     Candelilla  
     Carnauba  
 4. Amend § 151.49 by removing and reserving paragraph (b).  
 Title 46—[Amended]

**PART 30—GENERAL PROVISIONS**

5. The citation of authority for part 30 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306, 3703; 49 U.S.C. 5103, 5106; 49 CFR 1.45, 1.46; Section 30.01–2 also issued under the authority of 44 U.S.C. 3507; Section 30.01–5 also issued under the authority of Sec. 4109, Pub. L. 101–380, 104 Stat. 515.

6. In § 30.25–1, revise Table 30.25–1 to read as follows:

**30.25–1 Cargoes carried in vessels certificated under the rules of this subchapter.**

\* \* \* \* \*

**TABLE 30.25–1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES**

Cargo name	IMO Annex II Pollution Category
Acetone .....	III

**TABLE 30.25–1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued**

Cargo name	IMO Annex II Pollution Category
Acetophenone .....	@D
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol	D
Alcohols (C13+) .....	III
Alcoholic beverages, n.o.s. ....	III
Alcohol(C6–C17)(secondary) poly(3-6)ethoxylates .....	A
Alcohol(C6–C17)(secondary) poly(7-12)ethoxylates .....	B
Alcohol(C9–C11) poly(2.5-9)ethoxylate .....	B
Alcohol(C12–C15) poly( ... )ethoxylates, see Alcohol(C12–C16) poly( ... )ethoxylates .....	.....
Alcohol(C12–C16) poly(1-6)ethoxylates .....	A
Alcohol(C12–C16) poly(7-19)ethoxylates .....	B
Alcohol(C12–C16) poly(20+)ethoxylates .....	C
Alkanes (C6–C9) .....	C
n-Alkanes (C10+) .....	III
iso- & cyclo-Alkanes (C10–C11) .....	D
iso- & cyclo-Alkanes (C12+) ....	III
Alkaryl polyether (C9–C20) .....	B
Alkenyl(C11+) amine .....	D
Alkenyl(C16–C20) succinic anhydride) .....	D
Alkyl(C8+)amine, Alkenyl(C12+) acid ester mixture ....	D
Alkyl(C9+)benzenes .....	III
Alkylbenzenesulfonic acid (4% or less) .....	#
Alkyl dithiothiadiazole (C6–C24)	D
Alkyl ester copolymer (C4–C20)	D
Alkyl(C7–C11) phenol poly(4-12)ethoxylates .....	B
Alkyl phenol sulfide (C8–C40), see Alkyl(C8–C40) phenol sulfide .....	.....
Alkyl(C8–C40) phenol sulfide ...	D
Alkyl(C9–C15) phenyl propoxylate .....	III
n-Alkyl phthalates, see individual phthalates .....	.....
Alkyl sulfonic acid ester of phenol .....	III
Aminoethyldiethanolamine, Aminoethylethanolamine solution .....	III
Amyl acetate (all isomers) .....	C
Amyl alcohol (iso-, n-, sec-, primary) .....	D
Amyl alcohol (tert-) .....	III
Amylene, see Pentene (all isomers) .....	C
tert-Amyl methyl ether (Methyl tert-pentyl ether) .....	C
Amyl methyl ketone, see Methyl amyl ketone .....	D
Animal and Fish oils, n.o.s. ....	D

**TABLE 30.25–1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued**

Cargo name	IMO Annex II Pollution Category
(see also Oil, edible, or Oil, misc.) Including: Cod liver oil Lanolin Neatsfoot oil Pilchard oil Sperm oil	
Animal and Fish acid oils and distillates, n.o.s. ....	D
Including: Animal acid oil Fish acid oil Lard acid oil Mixed acid oil Mixed general acid oil Mixed hard acid oil Mixed soft acid oil	
Aryl polyolefin (C11–C50) .....	D
Asphalt .....	I
Asphalt blending stocks: Roofers flux .....	I
Straight run residue .....	I
Barium long chain (C11–C50) alkaryl sulfonate .....	B
Barium long chain alkyl(C8–C14)phenate sulfide .....	[A]
Behenyl alcohol .....	III
Benzene tricarboxylic acid trioctyl ester .....	III
Benzyl alcohol .....	C
Brake fluid base mixtures .....	D
(containing Poly(2-8)alkylene(C2–C3) glycols, Polyalkylene(C2–C10) glycol monoalkyl(C1–C4) ethers, and their borate esters)	
Butane .....	LFG
Butene, see Butylene.	
Butene oligomer .....	B
Butyl acetate (all isomers) .....	C
Butyl alcohol (iso-, n-, sec-, tert-), see Butyl alcohol (all isomers) .....	.....
Butyl alcohol (all isomers) .....	III
Butyl benzyl phthalate .....	A
Butylene .....	LFG
Butylene glycol .....	D
1,3-Butylene glycol, see Butylene glycol .....	.....
Butylene polyglycol, see Butylene glycol .....	.....
iso-Butyl formate .....	D
n-Butyl formate .....	@D
Butyl heptyl ketone .....	[C]
Butyl methyl ketone, see Methyl butyl ketone .....	.....
n-Butyl propionate .....	C
Butyl stearate .....	III
Butyl toluene .....	@A
gamma-Butyrolactone .....	D
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture .....	A

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
<i>Calcium alkyl salicylate, see Calcium long chain alkyl salicylate (C13+)</i>	
Calcium long chain alkaryl sulfonate (C11–C50)	D
<i>Calcium long chain alkyl phenate (C8–C40), see Calcium long chain alkyl(C5–C10) phenate or Calcium long chain alkyl(C11–C40) phenate</i>	
Calcium long chain alkyl(C5–C10) phenate	C
Calcium long chain alkyl(C11–C40) phenate	D
Calcium long chain alkyl phenate sulfide (C8–C40)	D
Calcium long chain alkyl phenolic amine (C8–C40)	III
Calcium long chain alkyl salicylate (C13+)	C
Caprolactam solutions	D
<i>Cetyl alcohol (hexadecanol), see Alcohols (C13+)</i>	
Cetyl-Stearyl alcohol, <i>see Alcohols (C13+)</i>	III
† Coal tar	A
Copper salt of long chain (C17+) alkanolic acid	[D]
<i>Cumene (isopropylbenzene), see Propylbenzene (all isomers)</i>	
Cyclohexane	C
Cyclohexanol	D
1,3-Cyclopentadiene dimer (molten)	B
p-Cymene	C
Decahydronaphthalene	D
iso-Decaldehyde	@C
n-Decaldehyde	@B
<i>Decane, see n-Alkanes (C10+)</i>	
Decene	B
Decyl acetate	B
Decyl alcohol (all isomers)	B
n-Decylbenzene, <i>see Alkyl(C9+)benzenes</i>	III
Detergent alkylate	D
Diacetone alcohol	D
Dialkyl(C10–C14) benzenes, <i>see Alkyl(C9+)benzenes</i>	III
Dialkyl(C8–C9) diphenylamines	D
Dialkyl(C7–C13) phthalates <i>Including:</i> <i>Diisodecyl phthalate</i> <i>Diisononyl phthalate</i> <i>Dinonyl phthalate</i> <i>Ditridecyl phthalate</i> <i>Diundecyl phthalate</i>	D
<i>Dibutyl carbinol, see Nonyl alcohol (all isomers)</i>	
<i>ortho-Dibutyl phthalate</i>	A
Dicyclopentadiene, <i>see 1,3-Cyclopentadiene dimer (molten)</i>	
	B
Diethylbenzene	A
Diethylene glycol	D

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
<i>Diethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
<i>Diethylene glycol butyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate</i>	
Diethylene glycol dibutyl ether	D
Diethylene glycol diethyl ether	III
<i>Diethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
<i>Diethylene glycol ethyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate</i>	
Diethylene glycol n-hexyl ether, <i>see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
<i>Diethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
<i>Diethylene glycol methyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate</i>	
Diethylene glycol phenyl ether	#
Diethylene glycol phthalate	D
<i>Diethylene glycol propyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
Di-(2-ethylhexyl)adipate	D
<i>Di-(2-ethylhexyl)phthalate, see Dioctyl phthalates</i>	
Diethyl phthalate	C
Diglycidyl ether of Bisphenol A	B
Diheptyl phthalate	III
Dihexyl phthalate	III
Diisobutylcarbinol, <i>see Nonyl alcohol (all isomers)</i>	
Diisobutylene	C
Diisobutyl ketone	B
Diisobutyl phthalate	D
<i>Diisodecyl phthalate, see Dialkyl(C7–C13) phthalates</i>	
<i>Diisononyl adipate, see Diisononyl phthalate, see Dialkyl(C7–C13) phthalates</i>	
Diisooctyl phthalate	D
Diisopropylbenzene ( <i>all isomers</i> )	III
Diisopropyl naphthalene	A
Dimethyl adipate	D
<i>Dimethylbenzene, see Xylenes</i>	
Dimethyl glutarate	B
Dimethyl phthalate	C
Dimethylpolysiloxane, <i>see Polydimethylsiloxane</i>	
	III
2,2-Dimethylpropane-1,3-diol (molten or solution)	D
Dimethyl succinate	C
<i>Dinonyl phthalate, see Dialkyl(C7–C13) phthalates</i>	
Dioctyl phthalate	III

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Dipentene	C
Diphenyl	A
Diphenyl, Diphenyl ether mixture	A
Diphenyl ether	A
Diphenyl ether, Biphenyl phenyl ether mixture	A
Dipropylene glycol	III
<i>Dipropylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
Dipropylene glycol dibenzoate	[D]
<i>Dipropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i>	
Distillates:	
Flashed feed stocks	I
Straight run	I
Ditridecyl adipate	III
<i>Ditridecyl phthalate, see Dialkyl(C7–C13) phthalates</i>	
<i>Diundecyl phthalate, see Dialkyl(C7–C13) phthalates</i>	
Dodecane (all isomers), <i>see also n-Alkanes (C10+)</i>	III
Dodecanol	B
Dodecene (all isomers)	B
Dodecyl alcohol, <i>see Dodecanol</i>	
Dodecylbenzene, <i>see Alkyl(C9+)benzenes</i>	III
Dodecyl hydroxypropyl sulfide	A
Dodecyl phenol	A
Dodecyl xylene	III
Drilling mud (low toxicity) ( <i>if flammable or combustible</i> )	[III]
Ethane	LFG
2-Ethoxyethyl acetate	C
<i>Ethoxylated alkyloxy alkyl amine, see Ethoxylated long chain (C16+) alkyloxyalkanamine</i>	
Ethoxylated long chain (C16+) alkyloxyalkanamine	D
Ethoxy triglycol ( <i>crude</i> )	D
Ethyl acetate	D
Ethyl acetoacetate	D
Ethyl alcohol	III
Ethyl amyl ketone	C
Ethylbenzene	B
Ethyl butanol	@D
Ethyl tert-butyl ether	C
Ethyl butyrate	C
Ethyl cyclohexane	C
Ethylene	LFG
Ethylene carbonate	III
Ethylene glycol	D
Ethylene glycol acetate	D
Ethylene glycol butyl ether acetate	C
Ethylene glycol diacetate	C
Ethylene glycol dibutyl ether	[D]
<i>Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate</i>	

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Ethylene glycol methyl butyl ether	D
Ethylene glycol methyl ether acetate	C
Ethylene glycol phenyl ether	D
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture	D
Ethylene-Propylene copolymer (in liquid mixtures)	[III]
Ethyl-3-ethoxypropionate	C
2-Ethylhexaldehyde, see Octyl aldehydes	
2-Ethylhexanoic acid, see Octanoic acid (all isomers)	
2-Ethylhexanol, see Octanol (all isomers)	
Ethylhexoic acid, see 2-Ethylhexanoic acid	
Ethyl hexyl phthalate	C
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol, C8-C10 ester	D
Ethyl propionate	D
Ethyl toluene	B
Fatty acid (saturated, C13+), see Fatty acid (saturated, C14+)	
Fatty acid (saturated, C14+)	III
Formamide	D
Furfuryl alcohol	C
† Gas oil, cracked	I
Gasoline blending stocks:	
Alkylates	I
† Reformates	I
Gasolines:	
† Automotive (containing not over 4.23 grams lead per gallon)	I
† Aviation (containing not over 4.86 grams lead per gallon)	I
Casinghead (natural)	I
Polymer	I
† Straight run	I
Glycerine	III
Glycerine (83%), Dioxane-dimethanol (17%) mixture	D
Glycerol, see Glycerine	
Glycerol monooleate	D
Glycerol polyalkoxylate	III
Glyceryl triacetate	III
Glycidyl ester of tertiary carboxylic acid, see Glycidyl ester of tridecyl acetic acid	
Glycidyl ester of C10 trialkylacetic acid, see Glycidyl ester of tridecyl acetic acid	
Glycidyl ester of tridecyl acetic acid	B
Glycidyl ester of versatic acid, see Glycidyl ester of tridecyl acetic acid	
Glycol diacetate, see Ethylene glycol diacetate	
Glycol triacetate, see Glyceryl triacetate	

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Glyoxal solution (40% or less)	D
Glyphosate solution (not containing surfactant)	D
Heptadecane, see n-Alkanes (C10+)	
Heptane (all isomers), see Alkanes (C6-C9)	
Heptanoic acid	C
Heptanol (all isomers)	D
Heptene (all isomers)	C
Heptyl acetate	[III]
Herbicide (C15 -H22 -NO2 -Cl), see Metolachlor	B
1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)naphthalene mixture	
Hexaethylene glycol, see Polyethylene glycol	
Hexamethylene glycol	III
Hexamethylenetetramine solutions	III
Hexane (all isomers), see Alkanes (C6-C9)	
Hexanoic acid	D
Hexanol (all isomers)	D
Hexene (all isomers)	C
Hexyl acetate	B
Hexylene glycol	III
Hog grease, see Lard	
2-Hydroxy-4-(methylthio)butanoic acid	C
Hydroxy terminated polybutadiene, see Polybutadiene, hydroxy terminated	
Isophorone	D
Jet fuels:	
† JP-4	I
JP-5 (kerosene, heavy)	I
JP-8	@I
Kerosene	I
Lactic acid	D
Lard	III
Latex (ammonia (1% or less) inhibited)	D
Latex, liquid synthetic including:	III
Styrene-butadiene rubber	III
Carboxylated styrene-butadiene copolymer	III
Lecithin	III
Long chain alkaryl polyether (C11-C20)	C
Long chain alkaryl sulfonic acid (C16-C60)	D
Long chain alkylphenate/Phenol sulfide mixture	III
Magnesium long chain alkaryl sulfonate (C11-C50)	D
Magnesium long chain alkyl phenate sulfide (C8-C20)	[D]
Magnesium long chain alkyl salicylate (C11+)	C
Magnesium nonyl phenol sulfide, see Magnesium long chain alkyl phenate sulfide	
(C8-C20)	

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Magnesium sulfonate, see Magnesium long chain alkaryl sulfonate (C11-C50)	
2-Mercaptobenzothiazol (in liquid mixtures)	#
Methane	LFG
3-Methoxy-1-butanol	III
3-Methoxybutyl acetate	D
1-Methoxy-2-propyl acetate	#
Methoxy triglycol (triethylene glycol methyl ether), see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	
Methyl acetate	III
Methyl acetoacetate	D
Methyl alcohol	D
Methyl amyl acetate	C
Methyl amyl alcohol	C
Methyl amyl ketone	D
Methyl butanol, see the amyl alcohols	
Methyl butenol	D
Methyl tert-butyl ether	D
Methyl butyl ketone	D
Methyl butyrate	C
Methyl ethyl ketone	III
N-Methylglucamine solution (70% or less)	III
Methyl heptyl ketone	B
Methyl isobutyl carbinol, see Methyl amyl alcohol	
Methyl isobutyl ketone	D
3-Methyl-3-methoxybutanol	III
3-Methyl-3-methoxybutyl acetate	III
Methyl naphthalene	A
Methyl pentene, see Hexene (all isomers)	
Methyl tert-pentyl ether (IMO cargo name) tert-Amyl methyl ether	
2-Methyl-1,3-propanediol	III
Methyl propyl ketone	D
N-Methyl-2-pyrrolidone	D
Metolachlor	B
Mineral spirits	I
Myrcene	D
Naphtha:	
† Aromatic (having less than 10% Benzene)	@I
Heavy	@I
Paraffinic	@I
† Petroleum	I
† Solvent	I
Stoddard Solvent	@I
† Varnish makers' and painters' (75%)	@I
Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution	D
Naphthenic acid	A
Nonane (all isomers), see Alkanes (C6-C9)	
Nonanoic acid (all isomers)	D
Nonanoic, Tridecanoic acid mixture	@D
Nonene (all isomers)	B

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category	Cargo name	IMO Annex II Pollution Category	Cargo name	IMO Annex II Pollution Category
Nonyl acetate .....	C	Noxious liquid, F., (14) n.o.s.		Sunflower, <i>see</i> Sunflower	
Nonyl alcohol (all isomers) .....	C	("trade name" contains "principle components") ST 3, Cat		seed .....	D
Nonyl methacrylate <i>monomer</i> ..	D	B, mp. equal to or greater		Sunflower seed .....	D
Nonyl phenol .....	A	than 15 deg. C .....	B	Tucum .....	D
Nonyl phenol		Noxious liquid, N.F., (15) n.o.s.		Vegetable, <i>n.o.s.</i> .....	D
poly(4+)ethoxylates .....	B	("trade name" contains "principle components") ST 3, Cat		Walnut .....	D
<i>Nonyl phenol sulfide (90% or less), see</i> Alkyl phenol sulfide (C8-C40) .....		C ( <i>if combustible</i> ) .....	C	Oil, fuel:	
Noxious liquid, N.F., (1) n.o.s.		Noxious liquid, F., (16) n.o.s.		No. 1 ( <i>kerosene</i> ) .....	I
("trade name" contains "principle components") ST 1, Cat		("trade name" contains "principle components") ST 3, Cat		No. 1-D .....	I
A ( <i>if combustible</i> ) .....	A	C .....	C	No. 2 .....	I
Noxious liquid, F., (2) n.o.s.		Noxious liquid, n.o.s. (17)		No. 2-D .....	I
("trade name" contains "principle components") ST 1, Cat		("trade name," contains "principal components"), Category D ( <i>if flammable or combustible</i> ) .....	D	No. 4 .....	I
A .....	A	Non-noxious liquid, n.o.s. (18)		No. 5 .....	I
Noxious liquid, N.F., (3) n.o.s.		("trade name," contains "principal components"), Appendix III ( <i>if flammable or combustible</i> ) .....	III	No. 6 .....	I
("trade name" contains "principle components") ST 2, Cat		<i>Octadecene, see the olefin or alpha-olefin entries</i> .....		Oil, misc:	
A .....	A	<i>Octadecenoamide solution (oleamide)</i> .....	[D]	Aliphatic .....	@I
Noxious liquid, N.F., (4) n.o.s.		Octane (all isomers), <i>see</i>		Animal, <i>n.o.s.</i> .....	D
("trade name" contains "principle components") ST 2, Cat		Alkanes (C6-C9) .....	C	Aromatic .....	I
A ( <i>if combustible</i> ) .....	A	Octanoic acid (all isomers) .....	D	Clarified .....	I
Noxious liquid, F., (4) n.o.s.		Octanol (all isomers) .....	C	Coal .....	#
("trade name" contains "principle components") ST 2, Cat		Octene (all isomers) .....	B	Coconut oil, fatty acid .....	C
A .....	A	Octyl acetate .....	C	Coconut oil, fatty acid methyl ester .....	D
Noxious liquid, F., (5) n.o.s.		<i>Octyl alcohol (iso-, n-), see Octanol</i> (all isomers) .....		<i>Cottonseed, fatty acid, see Cottonseed oil, fatty acid</i> ..	
("trade name" contains "principle components") ST 2, Cat		Octyl aldehydes .....	B	† Crude .....	I
B ( <i>if combustible</i> ) .....	B	Octyl decyl adipate .....	III	Diesel .....	I
Noxious liquid, N.F., (6) n.o.s.		<i>Octyl phthalate (Di-(2-ethylhexyl)phthalate), see</i>		Gas, high pour .....	@I
("trade name" contains "principle components") ST 2, Cat		Diocetyl phthalates .....		Gas, low pour .....	@I
B .....	B	Oil, edible:		Gas, low sulfur .....	@I
Noxious liquid, F., (7) n.o.s.		Beechnut .....	D	Heartcut distillate .....	I
("trade name" contains "principle components") ST 2, Cat		Castor .....	D	Lanolin .....	D
B, mp. equal to or greater		Cocoa butter .....	D	Linseed .....	D
than 15 deg. C .....	B	Coconut .....	D	Lubricating .....	I
Noxious liquid, N.F., (9) n.o.s.		Cod liver .....	D	Mineral .....	I
("trade name" contains "principle components") ST 3, Cat		Corn .....	D	Mineral seal .....	@I
A ( <i>if combustible</i> ) .....	A	Cottonseed .....	D	Motor .....	I
Noxious liquid, F., (10) n.o.s.		Fish, <i>n.o.s.</i> .....	D	Neatsfoot .....	D
("trade name" contains "principle components") ST 3, Cat		Groundnut .....	D	Oiticica .....	D
A .....	A	Hazelnut .....	D	Palm oil, fatty acid methyl ester .....	
Noxious liquid, N.F., (11) n.o.s.		Lard .....	@III	Penetrating .....	I
("trade name" contains "principle components") ST 3, Cat		Maize, <i>see</i> Corn oil .....	D	Perilla .....	D
B ( <i>if combustible</i> ) .....	B	Nutmeg butter .....	D	Pilchard .....	D
Noxious liquid, N.F., (12) n.o.s.		Olive .....	D	Pine .....	C
("trade name" contains "principle components") ST 3, Cat		Palm .....	D	Residual .....	I
B, mp. equal to or greater		Palm kernel .....	D	Road .....	I
than 15 deg. C ( <i>if combustible</i> ) .....	B	Peanut .....	D	Rosin .....	B
Noxious liquid, F., (13) n.o.s.		Poppy .....	D	Seal .....	I
("trade name" contains "principle components") ST 3, Cat		Raisin seed .....	D	Soapstock .....	#
B .....	B	Rapeseed .....	D	Soya bean (epoxidized) .....	[D]
		Rice bran .....	D	Sperm .....	D
		Safflower .....	D	Spindle .....	I
		Salad .....	D	Tall .....	B
		Sesame .....	D	Tall, fatty acid .....	C
		Soya bean .....	D	Transformer .....	I
				Tung .....	D
				Turbine .....	I
				Whale .....	D
				alpha-Olefins (C6-C18) .....	B
				alpha-Olefins (C13-C18) .....	III
				Olefin mixtures (C5-C7) .....	C
				Olefin mixtures (C5-C15) .....	B
				Olefins (C13+, all isomers) .....	III
				Olefin/Alkyl ester copolymer (molecular weight 2000+) .....	D
				Oleic acid .....	D

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
<i>Oleyl alcohol (octadecanol), see Alcohols (C13+)</i> .....	
Palm kernel acid oil, methyl ester .....	[D]
Palm stearin .....	D
<i>n-Paraffins (C10–C20), see n-Alkanes (C10+)</i> .....	
<i>Pentadecanol, see Alcohols (C13+)</i> .....	
<i>Pentaethylene glycol, see Polyethylene glycols</i> .....	
Pentaethylenhexamine .....	D
Pentane (all isomers) .....	C
Pentanoic acid .....	D
Pentene (all isomers) .....	C
n-Pentyl propionate .....	C
Petrolatum .....	III
1-Phenyl-1-xylyl ethane .....	C
Phosphate esters, alkyl(C12–C14) amine .....	B
Phosphosulfurized bicyclic terpene .....	#
<i>Pinene, see the alpha- or beta-isomers</i> .....	
alpha-Pinene .....	A
beta-Pinene .....	B
Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures .....	@D
<i>Polyalkylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i> .....	
Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether .....	D
<i>Including:</i> <i>Diethylene glycol butyl ether</i> <i>Diethylene glycol ethyl ether</i> <i>Diethylene glycol n-hexyl ether</i> <i>Diethylene glycol methyl ether</i> <i>Diethylene glycol n-propyl ether</i> <i>Dipropylene glycol butyl ether</i> <i>Dipropylene glycol methyl ether</i> <i>Polypropylene glycol methyl ether</i> <i>Triethylene glycol butyl ether</i> <i>Triethylene glycol ethyl ether</i> <i>Triethylene glycol methyl ether</i> <i>Tripropylene glycol methyl ether</i>	
Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate .....	D
<i>Including:</i> <i>Diethylene glycol butyl ether acetate</i> <i>Diethylene glycol ethyl ether acetate</i> <i>Diethylene glycol methyl ether acetate</i>	
Polyalkylene oxide polyol .....	C
<i>Polycarboxylic ester (C9+), see Ditridecyl adipate.</i>	

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Polyalkyl(C10–C20) methacrylate .....	D
Polybutadiene, hydroxy terminated .....	[III]
Polybutene .....	III
Polybutenyl succinimide .....	D
Polydimethylsiloxane .....	#
Polyether (molecular weight 2000+) .....	D
Polyethylene glycol .....	III
Polyethylene glycol dimethyl ether .....	III
<i>Polyethylene glycol monoalkyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i> .....	
Polyglycerine, Sodium salts solution (containing less than 3% Sodium hydroxide) .....	III
Polyglycerol .....	III
Polyisobutenyl anhydride adduct .....	III
Poly(4+)isobutylene .....	III
Polymerized esters .....	#
Polyolefin (molecular weight 300+) .....	III
Polyolefin amide alkeneamine (C17+) .....	D
Polyolefin amide alkeneamine (C28+) .....	D
Polyolefin amide alkeneamine borate (C28–C250) .....	D
Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture .....	C
Polyolefin amide alkeneamine polyol .....	D
Polyolefin anhydride .....	D
Polyolefin ester (C28–C250) .....	D
Polyolefin phenolic amine (C28–C250) .....	D
Polyolefin phosphorosulfide, barium derivative (C28–C250) .....	C
Poly(20)oxyethylene sorbitan monooleate .....	III
Poly(5+)propylene .....	III
Polypropylene glycol .....	D
<i>Polypropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether</i> .....	
Polysiloxane .....	III
Potassium oleate .....	C
Potassium salt of polyolefin acid .....	III
Propane .....	LFG
<i>n-Propoxypropanol (propylene glycol propyl ether), see Propylene glycol monoalkyl ether</i> .....	
iso-Propyl acetate .....	III
n-Propyl acetate .....	D
iso-Propyl alcohol .....	III
n-Propyl alcohol .....	III
<i>iso-Propylbenzene (cumene), see Propylbenzene (all isomers)</i> .....	

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
<i>n-Propylbenzene, see Propylbenzene (all isomers)</i> .....	
Propylbenzene (all isomers) .....	A
iso-Propylcyclohexane .....	C
Propylene .....	LFG
Propylene-butylene copolymer .....	III
Propylene carbonate .....	III
Propylene dimer .....	C
Propylene glycol .....	III
<i>Propylene glycol n-butyl ether, see Propylene glycol monoalkyl ether</i> .....	
<i>Propylene glycol ethyl ether, see Propylene glycol monoalkyl ether</i> .....	
<i>Propylene glycol methyl ether, see Propylene glycol monoalkyl ether</i> .....	
Propylene glycol methyl ether acetate .....	D
Propylene glycol monoalkyl ether .....	D
<i>Including:</i> <i>n-Propoxypropanol</i> <i>Propylene glycol n-butyl ether</i> <i>Propylene glycol ethyl ether</i> <i>Propylene glycol methyl ether</i> <i>Propylene glycol propyl ether</i>	
Propylene glycol phenyl ether .....	D
<i>Propylene glycol propyl ether, see Propylene glycol monoalkyl ether</i> .....	
Propylene polymer ( <i>in liquid mixtures</i> ) .....	#
Propylene tetramer .....	B
Propylene trimer .....	B
<i>Pseudocumene, see Trimethylbenzenes</i> .....	
<i>Rum, see Alcoholic beverages, n.o.s.</i> .....	
Sodium acetate, Glycol, Water mixture (containing 1% or less, Sodium hydroxide) ( <i>if flammable or combustible</i> ) .....	#
Sodium acetate solution .....	D
Sodium benzoate solution .....	D
Sodium long chain alkyl salicylate (C13+) .....	[C]
Soyabean oil (epoxidized) .....	[D]
<i>Stearic acid, see Fatty acid (saturated, C14+)</i> .....	
Stearyl alcohol ( <i>octadecanol</i> ) .....	III
Sulfohydrocarbon (C3–C88) .....	D
Sulfohydrocarbon, long chain (C18+) alkylamine .....	B
Sulfolane .....	D
Sulfurized fat (C14–C20) .....	D
Sulfurized polyolefinamide alkene(C28–C250)amine .....	D
Tallow .....	D
<i>Tallow alcohol, see Alcohols (C13+)</i> .....	
Tallow fatty acid .....	D

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Tallow <i>alkyl</i> nitrile .....	#
<i>Tetradecanol</i> , see Alcohols (C13+) .....	
<i>Tetradecene</i> , see the olefin or alpha-olefin entries .....	
Tetradecylbenzene, see Alkyl(C9+)benzenes .....	III
Tetraethylene glycol .....	III
Tetrahydronaphthalene .....	C
<i>Tetrapropylbenzene</i> , see Alkyl(C9+)benzenes .....	
Toluene .....	C
<i>Triarylphosphate</i> , see Triisopropylated phenyl phosphates .....	
Tributyl phosphate .....	B
Tricresyl phosphate (less than 1% of the ortho isomer) .....	A
<i>Tridecane</i> , see n-Alkanes (C10+) .....	
Tridecanoic acid .....	B
<i>Tridecanol</i> , see Alcohols (C13+) .....	
<i>Tridecene</i> , see Olefins (C13+) .....	
Tridecyl acetate .....	III
Tridecylbenzene, see Alkyl(C9+)benzenes .....	III
Triethylbenzene .....	A
Triethylene glycol .....	III
<i>Triethylene glycol butyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	
Triethylene glycol butyl ether mixture .....	#
Triethylene glycol di-(2-ethylbutyrate) .....	[C]
Triethylene glycol ether mixture .....	#
<i>Triethylene glycol ethyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	
<i>Triethylene glycol methyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	
Triethyl phosphate .....	D
Triisooctyl trimellitate .....	#
Triisopropanolamine .....	III
Triisopropylated phenyl phosphates .....	A
Trimethylbenzene (all isomers) .....	A
Trimethylol propane polyethoxylate .....	D
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate .....	III
2,2,4-Trimethyl-3-pentanol-1-isobutyrate .....	#
<i>Tripropylene</i> , see Propylene trimer .....	
Tripropylene glycol .....	III
<i>Tripropylene glycol methyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	
Trixylenyl phosphate .....	A

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Trixylyl phosphate, see Trixylenyl phosphate .....	
Turpentine .....	A B
† <i>Turpentine substitute</i> , see White spirit (low (15-20%) aromatic) .....	
<i>Undecanol</i> , see 1- Undecyl alcohol .....	
Undecene .....	B B
1- Undecyl alcohol .....	
Undecylbenzene, see Alkyl(C9+)benzenes .....	III
Vegetable oils, n.o.s. (see also Oil, edible) .....	D
Including: <i>Beechnut oil</i> <i>Castor oil</i> <i>Cocoa butter</i> <i>Coconut oil</i> <i>Corn oil</i> <i>Cottonseed oil</i> <i>Groundnut oil</i> <i>Hazelnut oil</i> <i>Linseed oil</i> <i>Nutmeg butter</i> <i>Oiticica oil</i> <i>Olive oil</i> <i>Palm kernel oil</i> <i>Palm oil</i> <i>Peel oil (oranges and lemons)</i> <i>Perilla oil</i> <i>Poppy oil</i> <i>Raisin seed oil</i> <i>Rapeseed oil</i> <i>Rice bran oil</i> <i>Safflower oil</i> <i>Salad oil</i> <i>Sesame oil</i> <i>Soya bean oil</i> <i>Sunflower seed oil</i> <i>Tucum oil</i> <i>Tung oil</i> <i>Walnut oil</i>	
Vegetable acid oils and distillates, n.o.s. .....	D
Including: <i>Corn acid oil</i> <i>Cottonseed acid oil</i> <i>Dark mixed acid oil</i> <i>Groundnut acid oil</i> <i>Mixed acid oil</i> <i>Mixed general acid oil</i> <i>Mixed hard acid oil</i> <i>Mixed soft acid oil</i> <i>Rapeseed acid oil</i> <i>Safflower acid oil</i> <i>Soya acid oil</i> <i>Sunflower seed acid oil</i>	
Waxes: <i>Candelilla</i> .....	D
<i>Carnauba</i> .....	@D
<i>Paraffin</i> .....	@D
† <i>White spirit</i> , see White spirit (low (15-20%) aromatic) .....	III

TABLE 30.25-1.—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
†White spirit (low (15-20%) aromatic) .....	B
<i>Wine</i> , see Alcoholic beverages, n.o.s. .....	
Xylenes ( <i>ortho</i> -, <i>meta</i> -, <i>para</i> -) ..	C
Zinc alkaryl dithiophosphate (C7-C16) .....	C
Zinc alkenyl carboxamide .....	D
Zinc alkyl dithiophosphate (C3-C14) .....	B

NOTE: See table 2 of part 153 for additional cargoes permitted to be carried by tank barge. Explanation of Symbols: As used in this table the following stands for:

A, B, C, D—NLS Category of Annex II of MARPOL 73/78.

I—Considered an "oil" under Annex I of MARPOL 73/78.

III—Appendix III of Annex II (non-NLS cargoes) of MARPOL 73/78.

LFG—Liquefied flammable gas.

#—No determination of NLS status. For shipping on an oceangoing vessel, see 46 CFR 153.900(c).

[ ]—A NLS category in brackets indicates that the product is provisionally categorized and that further data are necessary to complete the evaluation of its pollution hazards. Until the hazard evaluation is completed, the pollution category assigned is used.

@—The NLS category has been assigned by the U.S. Coast Guard, in absence of one assigned by the IMO. The category is based upon a GESAMP Hazard Profile or by analogy to a closely related product having an NLS assigned.

†—The provisions contained in 46 CFR part 197, subpart C, may apply to this cargo.

Abbreviations for Noxious liquid Cargoes:

N.F.—non-flammable (flash point greater than 60 degrees C (140 degrees F) cc).

F.—flammable (flash point less than or equal to 60 degrees C (140 degrees F) cc).

n.o.s.—not otherwise specified.

ST—Ship type.

Cat—Pollution category.

Words in italic are not part of the cargo name but may be used in addition to the cargo name.

When one entry references another entry by use of the word "see", and both names are in roman type, either name may be used as the cargo name (e.g., Diethyl ether, see Ethyl ether). However, the referenced entry is preferred.

**PART 150—COMPATIBILITY OF CARGOES**

7. The citation of authority for part 150 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3703; 49 CFR 1.45, 1.46. Section 150.105 issued under 44 U.S.C. 3507; 49 CFR 1.45.

8. Revise Table I to read as follows:

TABLE I.—ALPHABETICAL LIST OF CARGOES

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Acetaldehyde .....	19	.....	AAD	
Acetic acid .....	4	2	AAC	
Acetic anhydride .....	11	.....	ACA	
Acetochlor .....	10	.....	ACG	
Acetone .....	18	2	ACT	
Acetone cyanohydrin .....	0	1, 2	ACY	
Acetonitrile .....	37	.....	ATN	
Acetophenone .....	18	.....	ACP	
Acrolein .....	19	2	ARL	
Acrylamide solution .....	10	.....	AAM	
Acrylic acid .....	4	2	ACR	
Acrylonitrile .....	15	2	ACN	
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol .....	20	.....	ALE	
Adiponitrile .....	37	.....	ADN	
Alachlor .....	33	.....	ALH	
Alcohols (C13+) .....	20	.....	ALY	
Including:				
Oleyl alcohol (octadecanol)				
Pentadecanol				
Tallow alcohol				
Tetradecanol				
Tridecanol				
Alcoholic beverages .....	20	.....		
Alcohol polyethoxylates .....	20	.....		APU/APV/APW/ AET AEA/AEB
Alcohol polyethoxylates, secondary .....	20	.....		
Alkanes (C6-C9) .....	31	1	ALK	
Including:				
Heptanes				
Hexanes				
Nonanes				
Octanes				
n-Alkanes (C10+) .....	31	1	ALJ	
Including:				
Decanes				
Dodecanes				
Heptadecanes				
Tridecanes				
Undecanes				
iso- & cyclo-Alkanes (C10-C11) .....	31	1	AKI	
iso- & cyclo-Alkanes (C12+) .....	31	1	AKJ	
Alkane (C14-C17) sulfonic acid, sodium salt solution .....	34	.....	AKA	
Alkaryl polyether (C9-C20) .....	41	.....	AKP	
Alkenyl(C11+)amide .....	11	.....	AKM	
Alkenyl(C16-C20)succinic anhydride .....	11	.....	AAH	
Alkyl acrylate-Vinyl pyridine copolymer in Toluene .....	32	2	AAP	
Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture .....	34	.....	AAA	
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomer).	34	.....	APD	
Alkyl(C3-C4)benzenes .....	32	2	AKC	
Including:				
Butylbenzenes				
Cumene				
Propylbenzenes				
Alkyl(C5-C8)benzenes .....	32	2	AKD	
Including:				
Amylbenzenes				
Heptylbenzenes				
Hexylbenzenes				
Octylbenzenes				
Alkyl(C9+)benzenes .....	32	2	AKB	
Including:				
Decylbenzenes				
Dodecylbenzenes				
Nonylbenzenes				
Tetradecylbenzenes				
Tetrapropylbenzenes				
Tridecylbenzenes				
Undecylbenzenes				
Alkylbenzene, Alkylindane, Alkylindene mixture (each C12-C17) .....	32	2	AIH	
Alkylbenzenesulfonic acid .....	0	1, 2		ABS/ABN

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Alkylbenzenesulfonic acid, sodium salt solutions .....	33	.....	ABT	
Alkyl dithiothiadiazole (C6-C24) .....	33	.....	ADT	
Alkyl ester copolymer (C4-C20) .....	34	.....	AES	
Alkyl(C7-C9) nitrates .....	34	2	AKN	ONE
Alkyl(C7-C11) phenol poly(4-12)ethoxylate .....	40	.....	APN	
Alkyl(C8-C40) phenol sulfide .....	34	.....	AKS	
Alkyl(C8-C9) phenylamine in aromatic solvents .....	9	.....	ALP	
Alkyl(C9-C15) phenyl propoxylate .....	40	.....		
Alkyl phthalates .....	34	.....		
Alkyl(C10-C20, saturated and unsaturated) phosphite .....	34	.....	AKL	
Alkyl polyglucoside solutions .....	43	.....		AGL/AGN/AGO/ AGP/AGM
Alkyl sulfonic acid ester of phenol .....	34	.....		
Allyl alcohol .....	15	2	ALA	
Allyl chloride .....	15	1	ALC	
Aluminium chloride, Hydrochloric acid solution .....	0	1	AHS	
Aluminum sulfate solution .....	43	2	ASX	ALM
2-(2-Aminoethoxy)ethanol .....	8	.....	AEX	
Aminoethyldiethanolamine, Aminoethylethanolamine solution .....	8	.....		
Aminoethylethanolamine .....	8	.....	AEE	
N-Aminoethylpiperazine .....	7	.....	AEP	
2-Amino-2-hydroxymethyl-1,3-propanediol solution .....	43	.....	AHL	
2-Amino-2-methyl-1-propanol .....	8	.....	APQ	APR
Ammonia, anhydrous .....	6	.....	AMA	
Ammonia, aqueous (28% or less Ammonia) ( <i>IMO cargo name</i> ), see Ammonium hydroxide .....	6	.....		AMH
Ammonium bisulfite solution .....	43	2	ABX	ASU
Ammonium hydrogen phosphate solution .....	0	1	AMI	
Ammonium hydroxide (28% or less Ammonia) .....	6	.....	AMH	
Ammonium lignosulfonate solution, see also Lignin liquor .....	43	.....		
Ammonium nitrate solution .....	0	1	ANR	AND/AMN
Ammonium nitrate, Urea solution (containing Ammonia) .....	6	.....	UAS	
Ammonium nitrate, Urea solution (not containing Ammonia) .....	43	.....	ANU	UAT
Ammonium polyphosphate solution .....	43	.....	AMO	APP
Ammonium sulfate solution .....	43	.....	AME	AMS
Ammonium sulfide solution .....	5	.....	ASS	ASF
Ammonium thiocyanate, Ammonium thiosulfate solution .....	0	1	ACS	
Ammonium thiosulfate solution .....	43	.....	ATV	ATF
Amyl acetate .....	34	.....	AEC	IAT/AML/AAS/ AYA
Amyl alcohol .....	20	.....	AAI	IAA/AAN/ASE/ APM
<i>Amylene</i> , see Pentene .....	.....	.....	AMZ	PTX
tert-Amyl methyl ether (see also, Methyl tert-pentyl ether) .....	41	.....	AYE	
<i>Amyl methyl ketone</i> , see Methyl amyl ketone .....	.....	.....	AMK	MAK
Aniline .....	9	.....	ANL	
Animal and Fish oils, n.o.s. .....	34	.....	AFN	
Including:				
<i>Cod liver oil</i>				
<i>Lanolin</i>				
<i>Neatsfoot oil</i>				
<i>Pilchard oil</i>				
<i>Sperm oil</i>				
Animal and Fish acid oils and distillates, n.o.s. .....	34	.....	AFA	
Including:				
<i>Animal acid oil</i>				
<i>Fish acid oil</i>				
<i>Lard acid oil</i>				
<i>Mixed acid oil</i>				
<i>Mixed general acid oil</i>				
<i>Mixed hard acid oil</i>				
<i>Mixed soft acid oil</i>				
Anthracene oil (Coal tar fraction), see Coal tar .....	33	.....	AHO	COR
Apple juice .....	43	.....		
Aryl polyolefin (C11-C50) .....	30	.....	AYF	
Asphalt .....	33	.....	ASP	ACU
Asphalt blending stocks, roofers flux .....	33	.....	ARF	
Asphalt blending stocks, straight run residue .....	33	.....	ASR	
Asphalt emulsion ( <i>ORIMULSION</i> ) .....	33	.....	ASQ	
Aviation alkylates .....	33	.....	AVA	GAV
Barium long chain alkaryl(C11-C50) sulfonate .....	34	.....	BCA	
Barium long chain alkyl(C8-C14)phenate sulfide .....	34	.....	BCH	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Behenyl alcohol	20			
Benzene	32	2	BNZ	
Benzene hydrocarbon mixtures (having 10% Benzene or more)	32	2	BHB	BHA
Benzenesulfonyl chloride	0	1, 2	BSC	
Benzene, Toluene, Xylene mixtures	32	2	BTX	
Benzene tricarboxylic acid, trioctyl ester	34			
Benzylacetate	34		BZE	
Benzyl alcohol	21		BAL	
Benzyl chloride	36		BCL	
Brake fluid base mixtures	20		BFX	
Bromochloromethane	36		BCM	
Butadiene	30		BDI	
Butadiene, Butylene mixtures (cont. Acetylenes)	30		BBM	
Butane	31	1	BMX	IBT/BUT
1,4-Butanediol, see Butylene glycol			BDO	BUG
2-Butanone, see Methyl ethyl ketone				
Butene, see Butylene				IBL/BTN
Butene oligomer	30		BOL	
Butyl acetate	34		BAX	IBA/BCN/BTA/ BYA
Butyl acrylate	14	1	BAR	BAI/BTC
Butyl alcohol	20	2	BAY	IAL/BAN/BAS/ BAT
Butylamine	7		BTY	IAM/BAM/BTL/ BUA
Butylbenzene, see Alky(C3-C4)benzenes	32	2	BBE	AKC
Butyl benzyl phthalate	34		BPH	
Butyl butyrate	34		BBA	BUB/BIB
Butylene	30		BTN	IBL
Butylene glycol	20	2	BUG	BDO
1,3-Butylene glycol, see Butylene glycol				BUG
Butylene oxide	16	1	BTO	
Butyl ether	41		BTE	
Butyl formate	34			BFI/BFN
Butyl heptyl ketone	18		BHK	
Butyl methacrylate	14	1	BMH	BMI/BMN
Butyl methacrylate, Decyl methacrylate, Cetyl-Eicosyl methacrylate mixture	14	1	DER	
Butyl methyl ketone, see Methyl butyl ketone				MBK
Butyl phenol, Formaldehyde resin in Xylene	32	2		
n-Butyl propionate	34		BPN	
Butyl stearate	34			
Butyl toluene	32	2	BUE	
Butyraldehyde	19		BAE	BAD/BTR
Butyric acid	4		BRA	IBR
gamma-Butyrolactone	0	1, 2	BLA	
C9 Resinfeed (DSM)	32	2	CNR	
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture	34		CPX	
Calcium alkyl salicylate, see Calcium long chain alkyl salicylate (C13+)				CAK
Calcium bromide solution, see Drilling brines				DRB
Calcium bromide, Zinc bromide solution, see Drilling brine (containing Zinc salts)				DZB
Calcium carbonate slurry	34			
Calcium chloride solution	43		CCS	CLC
Calcium hydroxide slurry	5		COH	
Calcium hypochlorite solutions	5			CHZ/CHU/CHY
Calcium lignosulfonate solution, see also Lignin liquor	43			
Calcium long chain alkaryl sulfonate (C11-C50)	34		CAY	
Calcium long chain alkyl phenates	34			CAN/CAW
Calcium long chain alkyl phenate sulfide (C8-C40)	34		CPI	
Calcium long chain alkyl salicylate (C13+)	34		CAK	
Calcium long chain alkyl phenolic amine (C8-C40)	9		CPQ	
Calcium nitrate solution	34		CNU	
Calcium nitrate, Magnesium nitrate, Potassium chloride solution	34			
Calcium sulfonate, Calcium carbonate, Hydrocarbon solvent mixture	33			
Camphor oil	18		CPO	
Canola oil, see rapeseed oil under "oils, edible."				
Caprolactam solution	22		CLS	
Caramel solutions	43			
Carbolic oil	21		CBO	
Carbon disulfide	38		CBB	
Carbon tetrachloride	36	2	CBT	
Cashew nut shell oil (untreated)	4		OCN	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Catoxid feedstock	36	2	CXF	
Caustic potash solution	5	2	CPS	
Caustic soda solution	5	2	CSS	
<i>Cetyl alcohol (hexadecanol), see Alcohols (C13+)</i>				ALY
Cetyl-Eicosyl methacrylate mixture	14	1	CEM	
Cetyl-Stearyl alcohol, <i>see Alcohols (C13+)</i>				ALY
Chlorinated paraffins (C10-C13)	36		CLH	
Chlorinated paraffins (C14-C17) (with 52% Chlorine)	36		CLJ	
Chlorine	0	1	CLX	
Chloroacetic acid solution	4		CHM	CHL/MCA
Chlorobenzene	36		CRB	
Chlorodifluoromethane ( <i>monochlorodifluoromethane</i> )	36		MCF	
Chloroform	36		CRF	
Chlorohydrins	17	1	CHD	
4-Chloro-2-methylphenoxyacetic acid, Dimethylamine salt solution	9		CDM	
Chloronitrobenzene	42		CNO	
1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one	18	2	CDP	
Chloropropionic acid	4		CPM	CLA/CLP
Chlorosulfonic acid	0	1	CSA	
Chlorotoluene	36		CHI	CTM/CTO/CRN
Choline chloride solutions	20		CCO	
Citric acid	4		CIS	CIT
Clay slurry, <i>see also Kaolin clay slurry</i>	43			
Coal tar	33		COR	OCT
Coal tar distillate	33		CDL	
Coal tar, high temperature	33		CHH	
Coal tar pitch	33		CTP	
Cobalt naphthenate in solvent naphtha	34		CNS	
Coconut oil, fatty acid	34		CFA	
Copper salt of long chain (C17+) alkanolic acid	34		CUS	CFT
Corn syrup	43		CSY	
Cottonseed oil, fatty acid	34		CFY	
Creosote	21	2	CCT	CCW/CWD CRL/CSL/CSO
Cresols	21		CRS	
Cresylate spent caustic	5		CSC	
Cresylic acid	21		CRY	
Cresylic acid, dephenolized	21		CAD	
Cresylic acid, sodium salt solution ( <i>IMO cargo name</i> ), <i>see Cresylate spent caustic</i>	5			CSC
Cresylic acid tar	21		CRX	
Crotonaldehyde	19	2	CTA	
<i>Cumene (isopropyl benzene), see Propylbenzene</i>			CUM	PBY
1,5,9-Cyclododecatriene	30		CYT	
Cycloheptane	31	1	CYE	
Cyclohexane	31	1	CHX	
Cyclohexanol	20		CHN	
Cyclohexanone	18		CCH	
Cyclohexanone, Cyclohexanol mixtures	18	2	CYX	
Cyclohexyl acetate	34		CYC	
Cyclohexylamine	7		CHA	
1,3-Cyclopentadiene dimer	30		CPD	DPT
Cyclopentadiene, Styrene, Benzene mixture	30		CSB	
Cyclopentane	31	1	CYP	
Cyclopentene	30		CPE	
Cymene	32	2	CMP	
Decahydronaphthalene	33		DHN	
Decaldehyde	19			IDA/DAL ALJ
<i>Decane, see n-Alkanes (C10+)</i>			DCC	
Decanoic acid	4		DCO	
Decene	30		DCE	
Decyl acetate	34		DYA	
Decyl acrylate	14	1	DAT	IAI/DAR ISA/DAN
Decyl alcohol	20	2	DAX	
Decylbenzene, <i>see Alkyl(C9+) benzenes</i>	32	2	DBZ	AKB
Decyloxytetrahydro-thiophene dioxide	0	1, 2	DHT	
Degummed C9 (DOW)	33		DGC	
Dextrose solution, <i>see Glucose solution</i>	43		DTS	GLU
Diacetone alcohol	20	2	DAA	
Dialkyl(C10-C14) benzenes, <i>see Alkyl(C9+) benzenes</i>	32	2	DAB	AKB
Dialkyl(C8-C9) diphenylamines	9		DAQ	
Dialkyl(C7-C13) phthalates	34		DAH	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
<i>Including:</i>				
<i>Diisodecyl phthalate</i>				
<i>Diisononyl phthalate</i>				
<i>Dinonyl phthalate</i>				
<i>Ditridecyl phthalate</i>				
<i>Diundecyl phthalate</i>				
Dibromomethane .....	36		DBH	
Dibutylamine .....	7		DBA	
<i>Dibutyl carbinol, see Nonyl alcohol</i> .....				NNS
Dibutyl hydrogen phosphonate .....	34		DHD	
Dibutylphenols .....	21			DBT/DBV, DBW
Dibutyl phthalate .....	34		DPA	
Dichlorobenzene .....	36		DBX	DBM/DBO/DBP
3,4-Dichloro-1-butene .....	36		DCD	DCB
Dichlorodifluoromethane .....	36		DCF	
1,1-Dichloroethane .....	36		DCH	
2,2'-Dichloroethyl ether .....	41		DEE	
1,6-Dichlorohexane .....	36		DHX	
2,2'-Dichloroisopropyl ether .....	36		DCI	
Dichloromethane .....	36	2	DCM	
2,4-Dichlorophenol .....	21		DCP	
2,4-Dichlorophenoxyacetic acid, Diethanolamine salt solution .....	43		DDE	
2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution .....	0	1, 2	DAD	DDA/DSX
2,4-Dichlorophenoxyacetic acid, Triisopropano-lamine salt solution .....	43	2	DTI	
Dichloropropane .....	36		DPX	DPB/DPP/DPC/ DPL DPU/DPF
1,3-Dichloropropene .....	15	1	DPS	
Dichloropropene, Dichloropropane mixtures .....	15	1	DMX	
2,2-Dichloropropionic acid .....	4		DCN	
Dicyclopentadiene, <i>see also</i> 1,3-Cyclopentadiene dimer .....	30		DPT	CPD
Diethanolamine .....	8		DEA	
<i>Diethanolamine salt of 2,4-Dichlorophenoxyacetic acid solution, see 2,4-Dichlorophenoxyacetic acid, Diethanolamine salt solution.</i>				DDE
Diethylamine .....	7		DEN	
Diethylaminoethanol ( <i>IMO cargo name</i> ), <i>see</i> Diethylethanolamine .....	8			DAE
2,6-Diethylaniline .....	9		DMN	
Diethylbenzene .....	32	2	DEB	
Diethylene glycol .....	40	2	DEG	
<i>Diethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....			DME	PAG
<i>Diethylene glycol butyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.</i>			DEM	PAF
Diethylene glycol dibenzoate .....	34		DGZ	
Diethylene glycol dibutyl ether .....	40		DIG	
Diethylene glycol diethyl ether .....	40			
<i>Diethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether</i> .....			DGE	PAG
<i>Diethylene glycol ethyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetates.</i>			DGA	PAF
<i>Diethylene glycol n-hexyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....			DHE	PAG
<i>Diethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....			DGM	PAG
<i>Diethylene glycol methyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.</i>			DGR	PAF
Diethylene glycol phenyl ether .....	40		DGP	
Diethylene glycol phthalate .....	34		DGL	
<i>Diethylene glycol propyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....			DGO	PAG
Diethylenetriamine .....	7	2	DET	
Diethylenetriamine pentaacetic acid, pentasodium salt solution .....	43			
Diethylethanolamine .....	8		DAE	
Diethyl ether ( <i>IMO cargo name</i> ), <i>see</i> Ethyl ether .....	41			EET DAX
<i>Diethyl hexanol, see Decyl alcohol</i> .....				
Di-(2-ethylhexyl)adipate .....	34		DEH	
Di-(2-ethylhexyl)phosphoric acid .....	1	1	DEP	
<i>Di-(2-ethylhexyl)phthalate, see Dioctyl phthalate</i> .....	34		DIE	DOP
Diethyl phthalate .....	34		DPH	
Diethyl sulfate .....	34		DSU	
Diglycidyl ether of Bisphenol A .....	41		BDE	BPA
Diglycidyl ether of Bisphenol F .....	41		DGF	
Diheptyl phthalate .....	34		DHP	
Di-n-hexyl adipate .....	34		DHA	
Dihexyl phthalate .....	34			
1,4-Dihydro-9,10-dihydroxy anthracene, disodium salt solution .....	5		DDH	
Diisobutylamine .....	7		DBU	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Diisobutyl carbinol ( <i>commercial cargo name</i> ), see Nonyl alcohol	20		DBC	NNS
Diisobutylene	30		DBL	
Diisobutyl ketone	18		DIK	
Diisobutyl phthalate	34		DIT	
<i>Diisodecyl phthalate</i> , see Dialkyl(C7-C13) phthalates			DID	DAH
Diisononyl adipate	34		DNY	
<i>Diisononyl phthalate</i> , see Dialkyl(C7-C13) phthalates			DIN	DAH
Diisooctyl phthalate	34		DIO	
Diisopropanolamine	8		DIP	
Diisopropylamine	7		DIA	
Diisopropylbenzene	32	2	DIX	
Diisopropyl naphthalene	32	2	DII	
N,N-Dimethylacetamide	10		DAC	
N,N-Dimethylacetamide solution	10		DLS	
Dimethyl adipate	34		DLA	
Dimethylamine	7		DMA	
Dimethylamine solution	7			DMG/DMY/DMC CDM
<i>Dimethylamine salt of 4-Chloro-2-methylphenoxyacetic acid solution</i> , see 4-Chloro-2-methylphenoxyacetic acid, Dimethylamine salt solution.				
<i>Dimethylamine salt of 2,4-Dichlorophenoxyacetic acid solution</i> , see 2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution.				DAD/(DDA/DSX)
2,6-Dimethylaniline	9		DMM	
<i>Dimethylbenzene</i> , see Xylenes				XLX
Dimethylcyclosiloxane hydrolyzate	34			
N,N-Dimethylcyclohexylamine	7		DXN	
N,N-Dimethyldodecylamine ( <i>IMO cargo name</i> ), see Dodecylamine	7		DDY	
Dimethylethanolamine	8		DMB	
Dimethylformamide	10		DMF	
Dimethyl furan	41			
Dimethyl glutarate	34		DGT	
Dimethyl hydrogen phosphite	34	2	DPI	
Dimethyl naphthalene sulfonic acid, sodium salt solution	34	2	DNS	
Dimethyloctanoic acid	4		DMO	
Dimethyl phthalate	34		DTL	
Dimethylpolysiloxane, see Polydimethylsiloxane	34		DMP	
2,2-Dimethylpropane-1,3-diol	20		DDI	
Dimethyl succinate	34		DSE	
Dinitrotoluene	42		DNM	DTT/DNL/DNU
<i>Dinonyl phthalate</i> , see Dialkyl(C7-C13) phthalates			DIF	DAH
Diocetyl phthalate	34		DOP	DIE
1,4-Dioxane	41		DOX	
Dipentene	30		DPN	
Diphenyl	32	2	DIL	
Diphenylamine (molten)	9		DAG	DAM/LRM
Diphenylamines, alkylated	7		DAJ	
Diphenylamine, reaction product with 2,2,4-trimethylpentene	7		DAK	
Diphenyl, Diphenyl ether mixture	33		DDO	DTH
Diphenyl ether	41		DPE	
Diphenyl ether, Diphenyl phenyl ether mixture	41		DOB	
Diphenylmethane diisocyanate	12		DPM	
Diphenylol propane-Epichlorohydrin resins	0	1	DPR	
<i>Diphenyl oxide</i> , see as diphenyl ether				
Di-n-propylamine	7		DNA	
Dipropylene glycol	40		DPG	
<i>Dipropylene glycol butyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether			DBG	PAG
Dipropylene glycol dibenzoate	34		DGY	
<i>Dipropylene glycol methyl ether</i> , see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether			DPY	PAG
Distillates, flashed feed stocks	33		DFD	
Distillates, straight run	33		DSR	
Dithiocarbamate ester (C7-C35)	34		DHO	
Ditridecyl adipate	34			
<i>Ditridecyl phthalate</i> , see Dialkyl(C7-C13) phthalates			DTP	DAH
<i>Diundecyl phthalate</i> , see Dialkyl(C7-C13) phthalates			DUP	DAH
Dodecane	31	1	DOC	ALJ
tert-Dodecanethiol	0	2	DDL	
Dodecanol	20	2	DDN	LAL
Dodecene	30		DOZ	DDC/DOD
2-Dodecenylsuccinic acid, dipotassium salt solution	34			DSP
Dodecyl alcohol ( <i>IMO cargo name</i> ), see Dodecanol				DDN
Dodecylamine, Tetradecylamine mixture	7	2	DTA	
Dodecylbenzene, see Alkyl(C9+)benzenes	32	2	DDB	AKB

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Dodecylbenzenesulfonic acid .....	0	1, 2	DSA	
Dodecyldimethylamine, Tetradecyldimethylamine mixture .....	7		DOT	
Dodecyl diphenyl ether disulfonate solution .....	43		DOS	
Dodecyl hydroxypropyl sulfide .....	0	1, 2	DOH	
Dodecyl methacrylate .....	14	1	DDM	
Dodecyl-Octadecyl methacrylate mixture .....	14	1	DOM	
Dodecyl-Pentadecyl methacrylate mixtures .....	14	1	DDP	
Dodecyl phenol .....	21		DOL	
Dodecyl xylene .....	32	2	DXY	
Drilling brine (containing Calcium, Potassium or Sodium salts) .....	43			DRB
Drilling brine (containing Zinc salts) .....	43		DZB	
Drilling mud (low toxicity) (if flammable or combustible) .....	33			DRM
Drilling mud (low toxicity) (if non-flammable or non-combustible) .....	43			DRM
Epichlorohydrin .....	17	1	EPC	
Epoxy resin .....	18			
ETBE, see Ethyl tert-butyl ether .....				EBE
Ethane .....	31	1	ETH	
Ethanolamine (monoethanolamine) .....	8		MEA	
2-Ethoxyethanol, see Ethylene glycol monoalkyl ethers .....			EEO	EGC
2-Ethoxyethyl acetate .....	34		EEA	
Ethoxylated alcohols, C11-C15, see the alcohol polyethoxylates .....				
Ethoxylated long chain (C16+) alkyloxyalkanamine .....	8		ELA	
Ethoxy triglycol .....	40		ETG	
Ethyl acetate .....	34		ETA	
Ethyl acetoacetate .....	34		EAA	
Ethyl acrylate .....	14	1	EAC	
Ethyl alcohol .....	20	2	EAL	
Ethylamine .....	7	2	EAM	
Ethylamine solution .....	7		EAN	
Ethyl amyl ketone .....	18		EAK	ELK
Ethylbenzene .....	32	2	ETB	
Ethyl butanol .....	20		EBT	
N-Ethyl-n-butylamine .....	7		EBA	
Ethyl tert-butyl ether .....	41	2	EBE	
Ethyl butyrate .....	34		EBR	
Ethyl chloride .....	36		ECL	
Ethyl cyclohexane .....	31	1	ECY	
N-Ethylcyclohexylamine .....	7		ECC	
Ethylene .....	30		ETL	
Ethyleneamine EA 1302 .....	7	2	EMX	EDA
Ethylene carbonate .....	34			
Ethylene chlorohydrin .....	20		ECH	
Ethylene cyanohydrin .....	20		ETC	
Ethylenediamine .....	7	2	EDA	EMX
Ethylenediaminetetraacetic acid, tetrasodium salt solution .....	43		EDS	
Ethylene dibromide .....	36		EDB	
Ethylene dichloride .....	36	2	EDC	
Ethylene glycol .....	20	2	EGL	
Ethylene glycol acetate .....	34		EGO	
Ethylene glycol butyl ether, see Ethylene glycol monoalkyl ethers .....			EGM	EGC
Ethylene glycol tert-butyl ether, see Ethylene glycol monoalkyl ethers .....				EGC
Ethylene glycol butyl ether acetate .....	34		EMA	
Ethylene glycol diacetate .....	34		EGY	
Ethylene glycol dibutyl ether .....	40		EGB	
Ethylene glycol ethyl ether, see Ethyl glycol monoalkyl ethers .....			EGE	EGC/EEO
Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate .....			EGA	EEA
Ethylene glycol hexyl ether .....	40		EGH	
Ethylene glycol isopropyl ether, see Ethylene glycol monoalkyl ethers .....			EGI	EGC
Ethylene glycol methyl butyl ether, see Ethylene glycol monoalkyl ethers .....	40		EMB	EGC
Ethylene glycol methyl ether, see Ethylene glycol monoalkyl ethers .....			EME	EGC
Ethylene glycol methyl ether acetate .....	34		EGT	
Ethylene glycol monoalkyl ethers .....	40		EGC	
Including:				
Ethylene glycol butyl ether				
Ethylene glycol isobutyl ether				
Ethylene glycol tert-butyl ether				
Ethylene glycol ethyl ether				
Ethylene glycol hexyl ether				
Ethylene glycol methyl ether				
Ethylene glycol propyl ether				
Ethylene glycol isopropyl ether				
Ethylene glycol phenyl ether .....	40		EPE	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture .....	40	.....	EDX	EGC EGC
<i>Ethylene glycol propyl ether, see Ethylene glycol monoalkyl ethers</i> .....	.....	.....	EGP	
<i>Ethylene glycol iso-propyl ether, see Ethylene glycol monoalkyl ethers</i> .....	.....	.....	EGI	
Ethylene oxide .....	0	1	EOX	OAL OAY OCX
Ethylene oxide, Propylene oxide mixture .....	16	1	EPM	
Ethylene-Propylene copolymer .....	30	.....	.....	
Ethylene-Vinyl acetate copolymer emulsion .....	43	.....	.....	
Ethyl ether .....	41	.....	EET	
Ethyl-3-ethoxypropionate .....	34	.....	EET	
<i>2-Ethylhexaldehyde, see Octyl aldehydes</i> .....	.....	.....	HA	
<i>2-Ethylhexanoic acid, see Octanoic acids</i> .....	.....	.....	EHO	
<i>2-Ethylhexanol, see Octanol</i> .....	.....	.....	EHX	
2-Ethylhexyl acrylate .....	14	1	EAI	
2-Ethylhexylamine .....	7	.....	EHM	
Ethyl hexyl phthalate .....	34	.....	EHE	
<i>Ethyl hexyl tallate</i> .....	34	.....	EHT	
2-Ethyl-1-(hydroxymethyl)propane-1,3-diol, C8-C10 ester .....	34	.....	EHD	
Ethylidene norbornene .....	30	2	ENB	
Ethyl methacrylate .....	14	1	ETM	
N-Ethylmethylallylamine .....	7	.....	EML	
2-Ethyl-6-methyl-N-(1'-methyl-2-methoxyethyl)aniline .....	9	.....	EEM	
o-Ethyl phenol .....	21	.....	EPL	
Ethyl propionate .....	34	.....	EPR	
2-Ethyl-3-propylacrolein .....	19	2	EPA	
Ethyl toluene .....	32	2	ETE	
Fatty acids (saturated, C13+), <i>see Fatty acids (saturated, C14+)</i> .....	.....	.....	.....	SRA FCL STA
Fatty acids (saturated, C14+) .....	34	.....	FAD	
Ferric chloride solution .....	1	1	FCS	
Ferric hydroxyethylethylenediaminetriacetic acid, trisodium salt solution .....	43	2	FHX	
Ferric nitrate, Nitric acid solution .....	3	.....	FNN	
Fish solubles ( <i>water based fish meal extracts</i> ) .....	43	.....	FSO	
Fluorosilicic acid .....	1	1	FSJ	
Formaldehyde, Methanol mixtures .....	19	2	MTM	
Formaldehyde solution .....	19	2	FMS	
Formamide .....	10	.....	FAM	
Formic acid .....	4	2	FMA	
Fructose solution .....	43	.....	.....	
Fumaric adduct of Rosin, water dispersion .....	43	.....	FAR	
Furfural .....	19	.....	FFA	
Furfuryl alcohol .....	20	2	FAL	
Gas oil, cracked .....	33	.....	GOC	
Gasoline blending stock, alkylates .....	33	.....	GAK	
Gasoline blending stock, reformates .....	33	.....	GRF	
Gasolines:				AVA
Automotive ( <i>not over 4.23 grams lead per gal.</i> ) .....	33	.....	GAT	
Aviation ( <i>not over 4.86 grams lead per gal.</i> ) .....	33	.....	GAV	
Casinghead ( <i>natural</i> ) .....	33	.....	GCS	
Polymer .....	33	.....	GPL	
Straight run .....	33	.....	GSR	
Glucose solution .....	43	.....	GLU	DTS
Glutaraldehyde solution .....	19	.....	GTA	
Glycerine .....	20	2	GCR	
Glycerine, Dioxanedimethanol mixture .....	20	.....	GDM	
Glycerol monooleate .....	20	.....	GMO	
Glycerol polyalkoxylate .....	34	.....	.....	
Glyceryl triacetate .....	34	.....	.....	
Glycidyl ester of C10 trialkyl acetic acid ( <i>IMO cargo name</i> ), <i>see Glycidyl ester of tridecyl acetic acid.</i> .....	34	.....	.....	GLT
Glycidyl ester of tridecylacetic acid .....	34	.....	GLT	GLT
<i>Glycidyl ester of Versatic acid, see Glycidyl ester of tridecylacetic acid</i> .....	.....	.....	.....	
Glycine, sodium salt solution .....	7	.....	.....	EGY
<i>Glycol diacetate, see Ethylene glycol diacetate</i> .....	.....	.....	.....	
Glycolic acid solution .....	4	.....	GLC	
Glyoxal solutions .....	19	.....	GOS	
Glyoxylic acid .....	4	.....	GAC	
Glyphosate solution (not containing surfactant) ( <i>See also ROUNDUP</i> ) .....	7	.....	GIO	
<i>Heptadecane, see n-Alkanes (C10+)</i> .....	.....	.....	.....	
Heptane .....	31	1	HMX	
n-Heptanoic acid .....	4	.....	HEP	
Heptanol .....	20	.....	HTX	
Heptene .....	30	.....	HPX	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Heptyl acetate .....	34	.....	HPE	
<i>Herbicide (C15-H22-NO2-Cl)</i> , see Metolachlor .....	.....	.....		MCO
<i>Hexadecanol (cetyl alcohol)</i> , see Alcohols (C13+) .....	.....	.....		ALY
1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)naphthalene mixture .....	32	2		
<i>Hexaethylene glycol</i> , see Polyethylene glycol .....	.....	.....		
Hexamethylene glycol .....	20	.....		
Hexamethylenediamine .....	7	.....	HME	HMD/HMC
Hexamethylenediamine solution .....	7	.....	HMC	HMD/HME
Hexamethylenediamine adipate solution .....	43	.....	HAM	
Hexamethylene diisocyanate .....	12	.....	HDI	
Hexamethylenetetramine .....	7	.....	HMT	
Hexamethylenetetramine solutions .....	7	.....	HTS	
Hexamethylenimine .....	7	.....	HMI	
Hexane .....	31	2	HXS	ALK (IHA/HXA)
Hexanoic acid .....	4	.....	HXO	
Hexanol .....	20	.....	HXN	
Hexene .....	30	.....	HEX	HXE/HXT/MPN/ MTN
Hexyl acetate .....	34	.....	HAE	HSA
Hexylene glycol .....	20	.....	HXG	
HiTec 321 .....	7	.....	HIT	
<i>Hog grease</i> , see Lard .....	.....	.....		
Hydrochloric acid .....	1	1	HCL	
<i>Hydrofluorosilicic acid</i> , see Fluorosilicic acid .....	.....	.....	HFS	FSJ
bis(Hydrogenated tallow alkyl)methyl amines .....	7	.....	HTA	
Hydrogen peroxide solutions .....	0	1		HPN/HPS/HPO
2-Hydroxyethyl acrylate .....	14	2	HAI	
N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution .....	43	.....	HET	FHX
N,N-bis(2-Hydroxyethyl) oleamide .....	10	.....	HOO	
2-Hydroxy-4-(methylthio)butanoic acid .....	4	.....	HBA	
Hydroxy terminated polybutadiene ( <i>IMO cargo name</i> ), see Polybutadiene, hydroxy terminated ....	20	.....		
<i>alpha-hydro-omega-Hydroxytetradeca(oxytetramethylene)</i> , see Poly(tetramethylene ether) glycols (mw 950-1050) .....	.....	.....		HTO
Icosa(oxypropane-2,3-diyl)s .....	20	.....	IOP	
Isophorone .....	18	2	IPH	
Isophorone diamine .....	7	.....	IPI	
Isophorone diisocyanate .....	12	.....	IPD	
Isoprene .....	30	.....	IPR	
Isoprene concentrate (Shell) .....	30	.....	ISC	
<i>Isopropylbenzene (cumene)</i> , see Propylbenzene .....	.....	.....		PBY
Jet fuels:				
JP-4 .....	33	.....	JPF	
JP-5 .....	33	.....	JPV	
JP-8 .....	33	.....	JPE	
Kaolin clay slurry .....	43	.....		
Kerosene .....	33	.....	KRS	
Ketone residue .....	18	.....	KTR	
Kraft black liquor .....	5	.....		KPL
Kraft pulping liquors ( <i>Black, Green, or White</i> ) .....	5	.....	KPL	
Lactic acid .....	0	1, 2	LTA	
Lactonitrile solution .....	37	.....	LNI	
Lard .....	34	.....		
Latex (ammonia inhibited) .....	30	.....	LTX	
Latex, liquid synthetic .....	43	.....	LLS	LTX
Lauric acid .....	34	.....	LRA	
<i>Lauryl polyglucose</i> , see Alkyl(C12 -C14) polyglucoside solution (55% or less) .....	.....	.....	LAP	AGM
Lecithin .....	34	.....	LEC	
Lignin liquor .....	43	.....		
<i>Lignin sulfonic acid, sodium salt solution</i> , see Sodium lignosulfonate solution .....	.....	.....		
<i>d-Limonene</i> , see Dipentene .....	.....	.....		
Liquid Streptomyces solubles .....	43	.....		
Long chain alkaryl polyether (C11-C20) .....	41	.....	LCP	
Long chain alkaryl sulfonic acid (C16-C60) .....	0	1, 2	LCS	
Long chain alkylphenate/Phenol sulfide mixture .....	21	.....	LPS	
Long chain polyetheramine in alkyl(C2-C4)benzenes .....	7	.....	LCE	
L-Lysine solution .....	43	.....	LYS	
Magnesium chloride solution .....	0	1, 2		
Magnesium hydroxide slurry .....	5	.....		
Magnesium long chain alkaryl sulfonate (C11-C50) .....	34	.....	MAS	MSE
Magnesium long chain alkyl phenate sulfide (C8-C20) .....	34	.....	MPS	
Magnesium long chain alkyl salicylate (C11+) .....	34	.....	MLS	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
<i>Magnesium nonyl phenol sulfide, see Magnesium long chain alkyl phenate sulfide (C8-C20)</i> .....	.....	.....		MPS
<i>Magnesium sulfonate, see Magnesium long chain alkaryl sulfonate (C11-C50)</i> .....	.....	.....	MSE	MAS
Maleic anhydride .....	11	.....	MLA	
Mercaptobenzothiazol, sodium salt solution ( <i>IMO cargo name</i> ), <i>see</i> Sodium-2-mercaptobenzothiazol solution.	5	.....		SMB
Mesityl oxide .....	18	2	MSO	
Metam sodium solution .....	7	.....	MSS	SMD
Methacrylic acid .....	4	.....	MAD	
Methacrylic resin in Ethylene dichloride .....	14	1	MRD	
Methacrylonitrile .....	15	2	MET	
Methane .....	31	1	MTH	
3-Methoxy-1-butanol .....	20	.....		
3-Methoxybutyl acetate .....	34	.....	MOA	
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide ( <i>IMO cargo name</i> ), <i>see</i> Metolachlor.	34	.....		MCO
1-Methoxy-2-propyl acetate .....	34	.....	MPO	
<i>Methoxy triglycol</i> .....	40	.....	MTG	
Methyl acetate .....	34	.....	MTT	
Methyl acetoacetate .....	34	.....	MAE	
Methyl acetylene, Propadiene mixture .....	30	.....	MAP	
Methyl acrylate .....	14	1	MAM	
Methyl alcohol .....	20	2	MAL	
Methylamine solutions .....	7	.....	MSZ	
Methyl amyl acetate .....	34	.....	MAC	
Methyl amyl alcohol .....	20	.....	MAA	MIC
Methyl amyl ketone .....	18	.....	MAK	
Methyl bromide .....	36	.....	MTB	
<i>Methyl butanol, see the amyl alcohols</i> .....	.....	.....		AAI
Methyl butenol .....	20	.....	MBL	
<i>Methyl butenes (tert-amylenes), see Pentene</i> .....	.....	.....		PTX
Methyl tert-butyl ether .....	41	2	MBE	
Methyl butyl ketone .....	18	2	MBK	
Methylbutynol, <i>see</i> 2-Methyl-2-hydroxy-3-butyne .....	20	.....	MBY	MHB
3-Methyl butyraldehyde .....	19	.....		
Methyl butyrate .....	34	.....	MBU	
Methyl chloride .....	36	.....	MTC	
Methylcyclohexane .....	31	1	MCY	
Methylcyclopentadiene dimer .....	30	.....	MCK	
Methyl diethanolamine .....	8	.....	MDE	MAB
<i>Methylene chloride, see Dichloromethane</i> .....	.....	.....		DCM
2-Methyl-6-ethylaniline .....	9	.....	MEN	
Methyl ethyl ketone .....	18	2	MEK	
2-Methyl-5-ethylpyridine .....	9	.....	MEP	
Methyl formate .....	34	.....	MFM	
N-Methylglucamine solution .....	43	.....	MGC	
Methyl heptyl ketone .....	18	.....	MHK	
2-Methyl-2-hydroxy-3-butyne .....	20	.....	MHB	
Methyl isoamyl ketone .....	18	.....		MAK
<i>Methyl isobutyl carbinol, see Methyl amyl alcohol</i> .....	.....	.....		MAA
Methyl isobutyl ketone .....	18	2	MIK	
Methyl methacrylate .....	14	1	MMM	
3-Methyl-3-methoxybutanol .....	20	.....		
3-Methyl-3-methoxybutyl acetate .....	34	.....		
Methyl naphthalene .....	32	2	MNA	
Methylolureas .....	19	.....	MUS	
2-Methyl pentane .....	31	1		IHA
<i>2-Methyl-1-pentene, see Hexene</i> .....	.....	.....	MPN	HEX
<i>4-Methyl-1-pentene, see Hexene</i> .....	.....	.....	MTN	HEX
Methyl tert-pentyl ether ( <i>IMO cargo name</i> ), <i>see</i> tert-Amyl methyl ether .....	41	.....		AYE
2-Methyl-1,3-propanediol .....	20	.....	MDL	
Methyl propyl ketone .....	18	.....	MKE	
Methylpyridine .....	9	.....		MPR/MPE/MPF
N-Methyl-2-pyrrolidone .....	9	2	MPY	
Methyl salicylate .....	34	.....	MES	
alpha-Methylstyrene .....	30	.....	MSR	
3-(Methylthio)propionaldehyde .....	19	.....	MTP	
Metolachlor .....	34	.....	MCO	
Milk .....	43	.....		
Mineral spirits .....	33	.....	MNS	
Molasses .....	20	.....		
Molasses residue .....	0	1		

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Monochlorodifluoromethane .....	36	.....	MCF	
<i>Monoethanolamine, see Ethanolamine</i> .....	.....	.....		
<i>Monoisopropanolamine, see Propanolamine</i> .....	.....	.....		
Morpholine .....	7	2	MPL	
Motor fuel antiknock compounds containing lead alkyls .....	0	1	MFA	
<i>MTBE, see Methyl tert-butyl ether</i> .....	.....	.....		MBE
Myrcene .....	30	.....	MRE	
Naphtha:				
Aromatic .....	33	.....		
Coal tar solvent .....	33	.....	NCT	
Heavy .....	33	.....		
Paraffinic .....	33	.....		
Petroleum .....	33	.....	PTN	
Solvent .....	33	.....	NSV	
Stoddard solvent .....	33	.....	NSS	
Varnish Makers' and Painters' .....	33	.....	NVM	
Naphthalene .....	32	2	NTM	
Naphthalene still residue .....	32	2	NSR	
Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution .....	0	1	NFS	
Naphthalene sulfonic acid, sodium salt solution .....	34	.....	NSA	
Naphthenic acid .....	4	.....	NTI	
Naphthenic acid, sodium salt solution .....	43	.....	NTS	
Neodecanoic acid .....	4	.....	NEA	
NIAX POLYOL APP 240C .....	0	1, 2	NXP	
Nitrating acid .....	0	1	NIA	
Nitric acid (70% or less) .....	3	.....	NCD	
Nitric acid (greater than 70%) .....	0	1		NAC
Nitrobenzene .....	42	.....	NTB	
<i>o-Nitrochlorobenzene, see Chloronitrobenzene</i> .....	.....	.....		CNO
Nitroethane .....	42	.....	NTE	
Nitroethane, 1-Nitropropane mixtures .....	42	.....	NNO	
<i>o</i> -Nitrophenol .....	0	1, 2	NTP	NIP/NPH
Nitropropane .....	42	.....	NPM	NPN/NPP
Nitropropane, Nitroethane mixture .....	42	.....		NNO (NNM/ NNL)
Nitrotoluene .....	42	.....	NIT	NIE/NTT/NTR
Nonane .....	31	1	NAX	ALK (NAN)
Nonanoic acid .....	4	.....	NNA	NAI/NIN
Nonanoic, Tridecanoic acid mixture .....	4	.....	NAT	
Nonene .....	30	.....	NOO	NON/NNE
Nonyl acetate .....	34	.....	NAE	
Nonyl alcohol .....	20	2	NNS	NNI/NNN/DBC
<i>Nonylbenzene, see Alkyl(C9+)benzenes</i> .....	.....	.....		AKB
Nonyl methacrylate .....	14	1	NMA	
Nonyl phenol .....	21	.....	NNP	
Nonyl phenol poly(4+)ethoxylates .....	40	.....	NPE	
<i>Nonyl phenol sulfide solution, see Alkyl phenol sulfide (C8-C40)</i> .....	.....	.....		AKS/NPS
Noxious Liquid Substance, n.o.s. (NLS's) .....	0	1		
<i>1-Octadecene, see the olefin or alpha-olefin entries</i> .....	.....	.....		
Octadecenoamide .....	10	.....	ODD	
<i>Octadecenol (oleyl alcohol), see Alcohols (C13+)</i> .....	.....	.....		ALY
Octane .....	31	1	OAX	ALK (100/OAN)
Octanoic acid .....	4	.....	OAY	OAA/EHO
Octanol .....	20	2	OCX	IOA/OTA/EHX
Octene .....	30	.....	OTX	OTE
<i>n</i> -Octyl acetate .....	34	.....	OAF	OAE
<i>Octyl alcohol, see Octanol</i> .....	.....	.....		OCX
Octyl aldehyde .....	19	.....	OAL	IOC/OLX/EHA
Octyl decyl adipate .....	34	.....	ODA	
<i>Octyl nitrate, see Alkyl(C7-C9) nitrates</i> .....	.....	.....	ONE	AKN
Octyl phenol .....	21	.....		
<i>Octyl phthalate, see Dioctyl phthalate</i> .....	.....	.....		DOP
Oil, edible:				
Beechnut .....	34	.....	OBN	VEO
Castor .....	34	.....	OCA	VEO
Cocoa butter .....	34	.....	OCB	VEO
Coconut .....	34	2	OCC	VEO
Cod liver .....	34	.....	OCL	AFN
Corn .....	34	.....	OCO	VEO
Cottonseed .....	34	.....	OCS	VEO
Fish .....	34	2	OFS	AFN

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Groundnut .....	34	.....	OGN	VEO
Hazelnut .....	34	.....	OHN	VEO
Lard .....	34	.....	OLD	AFN
Maize .....	34	.....		VEO (OCO)
Nutmeg butter .....	34	.....	ONB	VEO
Olive .....	34	.....	OOL	VEO
Palm .....	34	2	OPM	VEO
Palm kernel .....	34	.....	OPO	VEO
Peanut .....	34	.....	OPN	VEO
Poppy .....	34	.....	OPY	VEO
Poppy seed .....	34	.....		VEO
Raisin seed .....	34	.....	ORA	VEO
Rapeseed .....	34	.....	ORP	VEO
Rice bran .....	34	.....	ORB	VEO
Safflower .....	34	.....	OSF	VEO
Salad .....	34	.....	OSL	VEO
Sesame .....	34	.....	OSS	VEO
Soya bean .....	34	.....	OSB	VEO
Sunflower seed .....	34	.....	OSN	VEO
Tucum .....	34	.....	OTC	VEO
Vegetable .....	34	.....	OVG	VEO
Walnut .....	34	.....	OWN	VEO
Oil, fuel:				
No. 1 .....	33	.....	OON	
No. 1-D .....	33	.....	OOD	
No. 2 .....	33	.....	OTW	
No. 2-D .....	33	.....	OTD	
No. 4 .....	33	.....	OFR	
No. 5 .....	33	.....	OFV	
No. 6 .....	33	.....	OSX	
Oil, misc:				
Aliphatic .....	33	.....		
Animal .....	34	.....	OMA	AFN
Aromatic .....	33	.....		
Clarified .....	33	.....	OCF	
Coal .....	33	.....		
Coconut oil, fatty acid methyl ester .....	34	.....	OCM	
Cotton seed oil, fatty acid .....	34	.....	CFY	
Crude .....	33	.....	OIL	
Diesel .....	33	.....	ODS	
Gas, high pour .....	33	.....		
Gas, low pour .....	33	.....		
Gas, low sulfur .....	33	.....		
Heartcut distillate .....	33	.....		
Lanolin .....	34	.....	OLL	AFN
Linseed .....	33	.....	OLS	
Lubricating .....	33	.....	OLB	
Mineral .....	33	.....	OMN	
Mineral seal .....	33	.....	OMS	
Motor .....	33	.....	OMT	
Neatsfoot .....	33	.....	ONF	AFN
Oiticica .....	34	.....	OOI	
Palm oil, fatty acid methyl ester .....	34	.....	OPE	
Penetrating .....	33	.....	OPT	
Perilla .....	34	.....	OPR	
Pilchard .....	34	.....	OPL	AFN
Pine .....	33	.....	OPI	PNL
Residual .....	33	.....		
Road .....	33	.....	ORD	
Rosin .....	33	.....	ORN	
Seal .....	34	.....		
Soapstock .....	34	.....	OIS	
Soybean (epoxidized) .....	34	.....		EVO
Sperm .....	33	.....	OSP	AFN
Spindle .....	33	.....	OSD	
Tall .....	34	.....	OTL	
Tall, fatty acid .....	34	2	TOF	
Transformer .....	33	.....	OTF	
Tung .....	34	.....	OTG	
Turbine .....	33	.....	OTB	
Wood .....	34	.....		

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Olefin/Alkyl ester copolymer (molecular weight 2000+)	34		OCP	
Olefin mixtures	30			OFX/OFY
alpha-Olefins (C6-C18) mixtures	30		OAM	
Olefins (C13+)	30			
Oleic acid	34		OLA	
Oleum	0	1, 2	OLM	
<i>Oleyl alcohol (octadecanol), see Alcohols (C13+)</i>				ALY
Oleylamine	10		OLY	
<i>ORIMULSION, see Asphalt emulsion</i>				ASQ
Oxyalkylated alkyl phenol formaldehyde	33			
Palm kernel acid oil	34		PNO	
Palm kernel acid oil, methyl ester	34		PNF	
<i>Palm kernel oil, fatty acid, see Palm kernel acid oil</i>				PNO
<i>Palm kernel oil, fatty acid methyl ester, see Palm kernel acid oil, methyl ester</i>				PNF
Palm stearin	34		PMS	
<i>n-Paraffins (C10-C20), see n-Alkanes (C10+)</i>			PFN	ALJ
Paraldehyde	19		PDH	
Paraldehyde-Ammonia reaction product	9		PRB	
Pentachloroethane	36		PCE	
Pentacos(oxypropane-2,3-diyl)s	20		POY	
<i>Pentadecanol, see Alcohols (C13+)</i>			PDC	ALY
1,3-Pentadiene	30		PDE	PDN
<i>Pentaethylene glycol, see Polyethylene glycols</i>				
<i>Pentaethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>				PAG
Pentaethylenhexamine	7		PEN	
Pentaethylenhexamine, Tetraethylenepentamine mixture	7		PEP	
Pentane	31	1	PTY	IPT/PTA
Pentanoic acid	4		POC	
<i>n-Pentanoic acid, 2-Methyl butyric acid mixture</i>	4		POJ	POC
<i>Pentasodium salt of Diethylenetriamine pentaacetic acid solution, see Diethylenetriamine pentaacetic acid, pentasodium salt solution.</i>				
Pentene	30		PTX	PTE
Pentyl aldehyde	19			
<i>n-Pentyl propionate</i>	34		PPE	
Perchloroethylene	36	2	PER	TTE
Petrolatum	33		PTL	
Phenol	21		PHN	
1-Phenyl-1-xylyl ethane	32	2	PXE	
Phosphate esters, alkyl(C12-C14)amine	7		PEA	
Phosphoric acid	1	1	PAC	
Phosphorus	0	1	PPW	PPR/PPB
Phthalate based polyester polyol	0	1, 2	PBE	
Phthalic anhydride	11		PAN	
alpha-Pinene	30		PIO	PIN
beta-Pinene	30		PIP	PIN
Pine oil	33		PNL	OPI
Polyalkyl(C18-C22) acrylate in Xylene	14	1	PIX	
<i>Polyalkylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>				PAG
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	40		PAG	
<i>Including:</i>				
<i>Diethylene glycol butyl ether</i>				
<i>Diethylene glycol ethyl ether</i>				
<i>Diethylene glycol n-hexyl ether</i>				
<i>Diethylene glycol methyl ether</i>				
<i>Diethylene glycol n-propyl ether</i>				
<i>Dipropylene glycol butyl ether</i>				
<i>Dipropylene glycol methyl ether</i>				
<i>Polyalkylene glycol butyl ether</i>				
<i>Polyethylene glycol monoalkyl ether</i>				
<i>Polypropylene glycol methyl ether</i>				
<i>Tetraethylene glycol methyl ether</i>				
<i>Triethylene glycol butyl ether</i>				
<i>Triethylene glycol ethyl ether</i>				
<i>Triethylene glycol methyl ether</i>				
<i>Tripropylene glycol methyl ether</i>				
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate	34		PAF	
<i>Including:</i>				
<i>Diethylene glycol butyl ether acetate</i>				
<i>Diethylene glycol ethyl ether acetate</i>				
<i>Diethylene glycol methyl ether acetate</i>				
Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures	40		PPX	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Polyalkylene oxide polyol .....	20	.....	PAO	
<i>Polyalkyl methacrylate (C1-C20)</i> .....	.....	.....	.....	
Polyalkyl(C10-C20)methacrylate .....	14	1	PMT	
Polyalkyl(C10-C18)methacrylate/Ethylene propylene copolymer mixture .....	14	1	PEM	
Polyaluminum chloride solution .....	1	1		
Polybutadiene, hydroxyl terminated .....	20	.....		
Polybutene .....	30	.....	PLB	
Polybutenyl succinimide .....	10	.....	PBS	
Poly(2+)cyclic aromatics .....	32	2	PCA	
Polydimethylsiloxane .....	34	.....		
Polyether (molecular weight 2000+) .....	41	.....	PYR	
Polyethylene glycol .....	40	.....		
Polyethylene glycol dimethyl ether .....	40	.....		
<i>Polyethylene glycol monoalkyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....	.....	.....	PEE	PAG
Polyethylene polyamines .....	7	2	PEB	
Polyferric sulfate solution .....	34	.....	PSS	
Polyglycerine, Sodium salts solution (containing less than 3% Sodium hydroxide) .....	20	2	PGT	
Polyglycerol .....	20	.....		GCR
Polyisobutenamine in aliphatic (C10-C14) solvent .....	7	.....	PIB	
Polyisobutenyl anhydride adduct .....	11	.....		
Poly(4+)isobutylene .....	30	.....		
Polymethylene polyphenyl isocyanate .....	12	.....	PPI	
Polymethylsiloxane .....	34	.....		
Polyolefin (molecular weight 300+) .....	30	.....		
Polyolefin amide alkeneamine (C17+) .....	33	.....	POH	
Polyolefin amide alkeneamine (C28+) .....	33	.....	POD	
Polyolefin amide alkeneamine borate (C28-C250) .....	33	.....	PAB	
Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture .....	7	.....		
Polyolefin amide alkeneamine polyol .....	20	.....	PAP	
Poly(C17+)olefin amine .....	7	.....	POG	
Polyolefinamine (C28-C250) .....	33	.....	POM	
Polyolefinamine in alkyl(C2-C4)benzenes .....	32	2	POF	
Polyolefin aminoester salt .....	34	.....	PAE	
Polyolefin anhydride .....	11	.....	PAR	
Polyolefin ester (C28-C250) .....	34	.....	POS	
Polyolefin phenolic amine (C28-C250) .....	7	.....	PPH	
Polyolefin phosphorosulfide, barium derivative (C28-C250) .....	34	.....	PPS	
Poly(20)oxyethylene sorbitan monooleate .....	34	.....	PSM	
Poly(5+)propylene .....	30	.....	PLQ	PLP
Polypropylene glycol .....	40	.....	PGC	
<i>Polypropylene glycol methyl ether, see Propylene glycol monoalkyl ether</i> .....	.....	.....	PGM	PGE
Polysiloxane .....	34	.....		DMP
Poly(tetramethylene ether) glycols (mw 950-1050) ( <i>alpha-hydro-omega-Hydroxytetradeca(oxytetramethylene)</i> ) .....	40	.....	HTO	
Polytetramethylene ether glycol .....	40	.....		
Potassium chloride solution .....	43	.....	PCS	(DRB)
Potassium formate solution .....	34	.....	PFR	
Potassium hydroxide solution ( <i>IMO cargo name</i> ), <i>see</i> Caustic potash solution .....	5	2		CPS
Potassium oleate .....	34	.....	POE	
Potassium salt of polyolefin acid .....	34	.....		
Potassium thiosulfate solution .....	43	.....	PTF	
Propane .....	31	1	PRP	
Propanolamine .....	8	.....	PAX	MPA/PLA
Propionaldehyde .....	19	.....	PAD	
Propionic acid .....	4	.....	PNA	
Propionic anhydride .....	11	.....	PAH	
Propionitrile .....	37	.....	PCN	
<i>n-Propoxypropanol, see Propylene glycol monoalkyl ether</i> .....	.....	.....	PXP	PGE
Propyl acetate .....	34	.....		IAC/PAT
Propyl alcohol .....	20	2		IPA/PAL
Propylamine .....	7	.....		IPP/PRA
iso-Propylamine solution .....	7	.....		IPO/IPQ
Propylbenzene .....	32	2	PBY	PBZ/CUM
n-Propyl chloride .....	36	.....	PRC	
iso-Propylcyclohexane .....	31	1	IPX	
Propylene .....	30	.....	PPL	
Propylene-butylene copolymer .....	30	.....	PBP	
Propylene carbonate .....	34	.....		
Propylene dimer .....	30	.....	PDR	
Propylene glycol .....	20	2	PPG	
<i>Propylene glycol n-butyl ether, see Propylene glycol monoalkyl ether</i> .....	.....	.....	PGD	PGE

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
<i>Propylene glycol ethyl ether, see Propylene glycol monoalkyl ether</i> .....	.....	.....	PGY	PGE
<i>Propylene glycol methyl ether, see Propylene glycol monoalkyl ether</i> .....	.....	.....	PME	PGE
Propylene glycol methyl ether acetate .....	34	.....	PGN	
Propylene glycol monoalkyl ether .....	40	.....	PGE	
<i>Including:</i>				
<i>n-Propoxypropanol</i>				
<i>Propylene glycol n-butyl ether</i>				
<i>Propylene glycol ethyl ether</i>				
<i>Propylene glycol methyl ether</i>				
<i>Propylene glycol propyl ether</i>				
Propylene glycol phenyl ether .....	40	.....	PGP	
<i>Propylene glycol propyl ether, see Propylene glycol monoalkyl ether</i> .....	.....	.....		PGE
Propylene oxide .....	16	1	POX	
Propylene, Propane, MAPP gas mixture .....	30	2	PPM	
Propylene tetramer .....	30	.....	PTT	
Propylene trimer .....	30	.....	PTR	
Propyl ether .....	41	.....		IPE/PRE TME/TRE
<i>Pseudocumene, see Trimethylbenzene</i> .....	.....	.....		
Pyridine .....	9	.....	PRD	
<i>Pyridine bases, see Paraldehyde-Ammonia reaction product</i> .....	.....	.....		PRB
Roehm monomer 6615 .....	14	1	RMN	
Rosin oil .....	33	.....	ORN	
Rosin soap (disproportionated) solution .....	43	.....	RSP	
ROUNDUP (See also Glyphosate solution) .....	7	.....	RUP	
<i>Rum, see Alcoholic beverages</i> .....	.....	.....		
SAP 7001 .....	0	1	SON	
Sewage sludge .....	43	.....		
Silica slurry .....	43	.....		
Sludge, treated .....	43	.....		
Sodium acetate, Glycol, Water mixture (not containing Sodium hydroxide) .....	34	2	SAO	SAP
Sodium acetate, Glycol, Water mixture (containing Sodium hydroxide) .....	5	.....	SAP	SAO
Sodium acetate solution .....	34	.....	SAN	AKP
Sodium alkyl sulfonate solution .....	43	.....	SSU	
Sodium alkyl (C14-C17) sulfonates 60-65% solution ( <i>IMO cargo name</i> ), <i>see Alkane (C14-C17) sulfonic acid, sodium salt solution.</i>	34	.....	AKA	
Sodium aluminate solution .....	5	.....	SAU	
Sodium aluminosilicate slurry .....	34	.....		
Sodium benzoate solution .....	34	.....	SBN	
Sodium borohydride, Sodium hydroxide solution .....	5	.....	SBX	SBH/SBI
Sodium carbonate solutions .....	5	.....	SCE	
Sodium chlorate solution .....	0	1, 2	SDD	SDC
Sodium cyanide solution .....	5	.....	SCS	SCN
Sodium dichromate solution .....	0	1, 2	SDL	SCR
<i>Sodium dimethyl naphthalene sulfonate solution, see Dimethyl naphthalene sulfonic acid, sodium salt solution.</i>	.....	.....		DNS
Sodium hydrogen sulfide, Sodium carbonate solution .....	0	1, 2	SSS	
Sodium hydrogen sulfite solution .....	43	.....	SHX	
Sodium hydrosulfide solution .....	5	2	SHR	
Sodium hydrosulfide, Ammonium sulfide solution .....	5	2	SSA	
Sodium hydroxide solution ( <i>IMO cargo name</i> ), <i>see Caustic soda solution</i> .....	5	2		CSS
Sodium hypochlorite solution .....	5	.....		SHP/SHQ/(SHC)
Sodium lignosulfonate solution, <i>see also Lignin liquor</i> .....	43	.....		
Sodium long chain alkyl salicylate (C13+) .....	34	.....	SLS	
Sodium 2-mercaptobenzothiazol solution .....	5	.....	SMB	
<i>Sodium N-methyl dithio carbamate solution, see Metam sodium solution</i> .....	.....	.....		MSS
<i>Sodium naphthalene sulfonate solution, see Naphthalene sulfonic acid, sodium salt solution</i> .....	.....	.....	SNS	NSA
<i>Sodium naphthenate solution, see Naphthenic acid, sodium salt solution</i> .....	.....	.....		NTS
Sodium nitrite solution .....	5	.....	SNI	SNT
Sodium petroleum sulfonate .....	33	.....	SPS	
Sodium polyacrylate solution .....	43	2		
<i>Sodium salt of Ferric hydroxyethylethylenediaminetriacetic acid solution, see Ferric hydroxyethylethylenediaminetriacetic acid, trisodium salt solution.</i>	.....	.....	STA	FHX
Sodium silicate solution .....	43	2	SSN	SSC
Sodium sulfide, Hydrosulfide solution .....	0	1, 2		SSH/SSI/SSJ
Sodium sulfide solution .....	43	.....	SDR	
Sodium sulfite solution .....	43	.....	SUP	SUS
Sodium tartrates, Sodium succinates solution .....	43	.....	STM	
Sodium thiocyanate solution .....	0	1, 2	STS	SCY
Sorbitol solutions .....	20	.....		SBT
Soyabean oil (expoxidized) .....	34	.....		OSC/EVO
<i>Stearic acid, see Fatty acids (saturated, C14+)</i> .....	.....	.....	SRA	FAD

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Stearyl alcohol	20			
Styrene	30		STY	STX
Sulfohydrocarbon (C3-C88)	33		SFO	
Sulfohydrocarbon, long chain (C18+) alkylamine mixture	7		SFX	
Sulfolane	39		SFL	
Sulfonated polyacrylate solutions	43	2		
Sulfur	0	1	SXX	
Sulfuric acid	2	2	SFA	
Sulfuric acid, spent	2	2	SAC	
Sulfurized fat (C14-C20)	33		SFT	
Sulfurized polyolefinamide alkene(C28-C250) amine	33		SPO	
Tall oil	34		OTL	
Tall oil fatty acid ( <i>Resin acids less than 20%</i> )	34	2	TOF	
Tall oil fatty acid, barium salt	0	1, 2	TOB	
Tall oil soap (disproportionated) solution	43		TOS	
Tallow	34	2	TLO	
Tallow fatty acid	34	2	TFD	
<i>Tallow fatty alcohol, see Alcohols (C13+)</i>			TFA	ALY
Tallow nitrile	37		TAN	
<i>TAME, see tert-Amyl methyl ether</i>				AYE
1,1,2,2-Tetrachloroethane	36		TEC	
<i>Tetrachloroethylene, see Perchloroethylene</i>			TTE	PER
<i>Tetradecanol, see Alcohols (C13+)</i>			TTN	ALY
<i>Tetradecene, see the olefins entries</i>			TTD	
Tetradecylbenzene, <i>see Alkyl(C9+) benzenes</i>	32	2	TDB	AKB
Tetraethylene glycol	40		TTG	
<i>Tetraethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>				PAG
Tetraethylenepentamine	7	2	TTP	
Tetrahydrofuran	41		THF	
Tetrahydronaphthalene	32	2	THN	
<i>1,2,3,5-Tetramethylbenzene, see Tetramethylbenzene</i>			TTB	TTC
Tetramethylbenzene	32	2	TTC	TTB
<i>Tetrapropylbenzene, see Alkyl(C9+)benzenes</i>				AKB
<i>Tetrasodium salt of EDTA solution, see Ethylenediaminetetraacetic acid, tetrasodium salt solution.</i>				EDS
Titanium dioxide slurry	43		TDS	
Titanium tetrachloride	2	2	TTT	
Toluene	32	2	TOL	
Toluenediamine	9		TDA	
Toluene diisocyanate	12		TDI	
o-Toluidine	9		TLI	
<i>Triarylphosphate, see Triisopropylated phenyl phosphates</i>			TRA	TPL
Tributyl phosphate	34		TBP	
1,2,4-Trichlorobenzene	36		TCB	
1,1,1-Trichloroethane	36	2	TCE	
1,1,2-Trichloroethane	36		TCM	
Trichloroethylene	36	2	TCL	
1,2,3-Trichloropropane	36	2	TCN	
1,1,2-Trichloro-1,2,2-trifluoroethane	36		TFE	
Tricresyl phosphate	34			TCO/TCP
<i>Tridecane, see n-Alkanes (C10+)</i>			TRD	ALJ
Tridecanoic acid	34		TDO	
<i>Tridecanol, see Alcohols (C13+)</i>			TDN	ALY
<i>Tridecene, see Olefins (C13+)</i>			TDC	
Tridecyl acetate	34		TAE	
Tridecylbenzene, <i>see Alkyl(C9+) benzenes</i>	32	2	TRB	AKB
Triethanolamine	8	2	TEA	
Triethylamine	7		TEN	
Triethylbenzene	32	2	TEB	
Triethylene glycol	40		TEG	
<i>Triethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>				PAG
Triethylene glycol butyl ether mixture	40			
Triethylene glycol dibenzoate	34		TGB	
Triethylene glycol di-(2-ethylbutyrate)	34		TGD	
Triethylene glycol ether mixture	40			
<i>Triethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>			TGE	PAG
<i>Triethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i>			TGY	PAG
Triethylenetetramine	7	2	TET	
Triethyl phosphate	34		TPS	
Triethyl phosphite	34	2	TPI	
Triisobutylene	30		TIB	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Triisooctyl trimellitate .....	34	.....		
Triisopropanolamine .....	8	.....	TIP	
<i>Triisopropanolamine salt of 2,4-Dichlorophenoxyacetic acid solution, see 2,4-Dichlorophenoxyacetic acid, Triisopropanolamine salt solution.</i>				DTI
Triisopropylated phenyl phosphates .....	34	.....	TPL	
Trimethylacetic acid .....	4	.....	TAA	
Trimethylamine solution .....	7	.....	TMT	
Trimethylbenzene .....	32	2	TRE	TME/TMB/TMD
Trimethylhexamethylenediamine (2,2,4- and 2,4,4-) .....	7	.....	THA	
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-) .....	12	.....	THI	
<i>Trimethyl nonanol, see Dodecanol</i> .....				DDN
Trimethylol propane polyethoxylate .....	20	.....	TPR	
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate .....	34	.....	TMQ	
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate .....	34	.....	TMP	
2,2,4-Trimethyl-3-pentanol-1-isobutyrate .....	34	.....		
Trimethyl phosphite .....	34	2	TPP	
1,3,5-Trioxane .....	41	2	TRO	
Triphenylborane, Caustic soda solution .....	5	.....	TPB	
<i>Tripropylene, see Propylene trimer</i> .....				PTR
Tripropylene glycol .....	40	.....	TGC	
<i>Tripropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether</i> .....				PAG
Trisodium nitrilotriacetate .....	34	.....		
Trisodium phosphate solution .....	5	.....	TSP	
<i>Trisodium salt of N-(Hydroxyethyl)ethylenediaminetriacetic acid solution, see N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution.</i>				HET
Trixylyl phosphate ( <i>IMO cargo name</i> ), <i>see Trixylenyl phosphate</i> .....	34	.....		TRP
Trixylenyl phosphate .....	34	.....	TRP	
Turpentine .....	30	.....	TPT	
Ucarsol CR Solvent 302 SG .....	8	.....	UCS	
Undecanoic acid .....	4	.....	UDA	
<i>Undecanol, see Undecyl alcohol</i> .....				UND
Undecene .....	30	.....	UDC	
Undecyl alcohol .....	20	.....	UND	
Undecylbenzene, <i>see Alkyl(C9+) benzenes</i> .....			UDB	AKB
Urea, Ammonium mono- and di-hydrogen phosphate, Potassium chloride solution .....	0	1	UPX	
Urea, Ammonium nitrate solution (containing Ammonia) .....	6	.....	UAS	
Urea, Ammonium nitrate solution (not containing Ammonia) .....	43	.....	UAT	ANU
Urea, Ammonium phosphate solution .....	43	.....	UAP	
Urea solution .....	43	.....		URE
Valeraldehyde .....	19	.....	VAK	IVA/VAL
Vanillin black liquor .....	5	.....	VBL	
Vegetable oils, n.o.s. .....	34	.....	VEO	
<i>Including:</i>				
<i>Beechnut oil</i>				
<i>Castor oil</i>				
<i>Cocoa butter</i>				
<i>Coconut oil</i>				
<i>Corn oil</i>				
<i>Cottonseed oil</i>				
<i>Groundnut oil</i>				
<i>Hazelnut oil</i>				
<i>Linseed oil</i>				
<i>Nutmeg butter</i>				
<i>Oiticica oil</i>				
<i>Olive oil</i>				
<i>Palm kernel oil</i>				
<i>Palm oil</i>				
<i>Peel oil (oranges and lemons)</i>				
<i>Perilla oil</i>				
<i>Poppy oil</i>				
<i>Raisin seed oil</i>				
<i>Rapeseed oil</i>				
<i>Rice bran oil</i>				
<i>Safflower oil</i>				
<i>Salad oil</i>				
<i>Sesame oil</i>				
<i>Soya bean oil</i>				
<i>Sunflower seed oil</i>				
<i>Tucum oil</i>				
<i>Tung oil</i>				
<i>Walnut oil</i>				
Vegetable acid oils and distillates, n.o.s. ....	34	.....	VAO	

TABLE I.—ALPHABETICAL LIST OF CARGOES—Continued

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
<i>Including:</i>				
<i>Corn acid oil</i>				
<i>Cottonseed acid oil</i>				
<i>Dark mixed acid oil</i>				
<i>Groundnut acid oil</i>				
<i>Mixed acid oil</i>				
<i>Mixed general acid oil</i>				
<i>Mixed hard acid oil</i>				
<i>Mixed soft acid oil</i>				
<i>Rapeseed acid oil</i>				
<i>Safflower acid oil</i>				
<i>Soya acid oil</i>				
<i>Sunflower seed acid oil</i>				
Vegetable protein solution .....	43			
Vinyl acetate .....	13	1	VAM	
Vinyl chloride .....	35		VCM	
Vinyl ethyl ether .....	13	1	VEE	
Vinylidene chloride .....	35		VCI	
Vinyl neodecanate .....	13	1	VND	
Vinyltoluene .....	13	1	VNT	
Water .....	43			
Waxes: .....				
Candelilla .....	34		WAX	
Carnauba .....	34		WDC	
Paraffin .....	31	1	WCA	
Petroleum .....	33		WPF	
<i>Wine, see</i> Alcoholic beverages .....				
White spirit (low (15-20%) aromatic) .....	33		WSL	WSP
Xylene .....	32	2	XLX	XML/XLO/XLP
Xylenes, Ethylbenzene mixture .....	32	2	XEB	
Xylenols .....	21		XYL	
Zinc alkaryl dithiophosphate (C7-C16) .....	34		ZAD	
Zinc alkenyl carboxamide .....	10		ZAA	
Zinc alkyl dithiophosphate (C3-C14) .....	34		ZAP	
<i>Zinc bromide, Calcium bromide solution, see</i> Drilling brine (containing Zinc salts) .....				DZB

1. Because of very high reactivity or unusual conditions of carriage or potential compatibility problems, this commodity is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (G-MSO), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593-0001. Telephone (202) 267-1577.  
 2. See Appendix I-Exceptions to the Chart.

**PART 150 TABLE II—[AMENDED]**

9. In Table II, amend the designated Compatibility Groups as follows:

- a. In Compatibility Group O, Unassigned Cargoes:
  - 1. Remove the words “2-Hydroxyethyl acrylate <sup>1,2</sup>”.
  - 2. Remove the words “Potassium polysulfide, Potassium thiosulfide solution (41% or less)”.
- b. In Compatibility Group 7, Aliphatic Amines:
  - 1. Remove the words “Calcium long chain alkyl phenolic amine (C8-C40)”.
  - 2. Remove the word “Diethylenetriamine” and add, in its place, the word “Diethylenetriamine <sup>2</sup>”.
  - 3. Remove the words “Polyalkyl methacrylate (C1-C20)”.
  - 4. Remove the words “Polyolefin amide alkeneamine polyol”.
  - 5. Remove the words “Polyolefinamine in alkyl (C2-C4) benzenes”.
  - 6. Remove the words “Polyolefin phenolic amine (C28-C250)”.

- 7. Remove the word “Tetraethylenepentamine” and add, in its place, the word “Tetraethylenepentamine <sup>2</sup>”.
- c. In Compatibility Group 14, Acrylates, remove the words “Polyalkyl methacrylate (C1-C20)”, and add, in their place, the words “Polyalkyl (C10-C20) methacrylate”.
- d. In Compatibility Group 18, Ketones, remove the entry “Methyl diethanolamine”.
- e. In Compatibility Group 20, Alcohols, Glycols, remove the words “Polybutadiene, hydroxyl terminated” and add, in their place, the words “Polybutadiene, hydroxy terminated”.
- f. In Compatibility Group 30, Olefins, remove the words “Pentene, Miscellaneous hydrocarbon mixture <sup>2</sup>”.
- g. In Compatibility Group 33, Miscellaneous Hydrocarbon Mixtures, from the entry “Alachlor technical” remove the word “technical”.
- h. In Compatibility Group 34, Esters:
  - 1. Remove the words “Alkyl phenol sulfide (C8-C40)” and add, in their

- place, the words “Alkyl (C8-C40) phenol sulfide”.
- 2. Remove the words “Barium long chain alkaryl sulfonate (C11-C50)” and add, in their place, the words “Barium long chain alkaryl (C11-C50) sulfonate”.
- 3. Remove the words “Calcium long chain alkyl phenate (C8-C40)” and add the words “Calcium long chain alkyl phenates” following the entry for “Calcium long chain alkyl phenate sulfide (C8-C40)”.
- 4. Revise the entry “Fatty acids (saturated, C13+)”, to read “Fatty acids (saturated, C14+)”.
- 5. For the entry “Lecithin (*soyabean*)”, remove the word “(*soyabean*)”.
- 6. Remove the words “Polyolefin amide alkeneamine borate (C28-C250)”.
- i. In Compatibility Group 36, Halogenated Hydrocarbons, remove the words “Carbon tetrachloride” and add, in their place, the words “Carbon tetrachloride <sup>2</sup>”.
- j. In Compatibility Group 40, Glycol Ethers,

1. Remove the words "Nonyl phenol (ethoxylated)".

2. Revise the entry "Nonyl phenol poly(4-12)ethoxylates", to read "Nonyl phenol poly(4+)ethoxylates".

3. Remove the words "Oil, misc:".

k. In Compatibility Group 42, Nitrocompounds, revise the entry "Nitropropane, Nitroethane mixture" to read "Nitropropane, Nitroethane mixtures".

l. In Compatibility Group 43, Miscellaneous Water Solutions, remove the words "N-Methylglucamine solution (70% or less)".

m. To the same Table II, add the following new entries in the designated Compatibility Groups, in chemically proper alphabetized order:

Table II—Grouping of Cargoes

\* \* \* \* \*

0. Unassigned Cargoes

\* \* \* \* \*

tert-Dodecanethiol <sup>2</sup>

\* \* \* \* \*

Hydrogen peroxide solutions <sup>1</sup>

\* \* \* \* \*

NIAX POLYOL APP 240C <sup>1, 2</sup>

\* \* \* \* \*

SAP 7001 <sup>1</sup>

\* \* \* \* \*

4. Organic Acids

\* \* \* \* \*

Glycolic acid

\* \* \* \* \*

n-Pentanoic acid, 2-Methyl butyric acid mixture

\* \* \* \* \*

7. Aliphatic Amines

\* \* \* \* \*

N,N-Dimethyldodecylamine

\* \* \* \* \*

Ethyleneamine EA 1302 <sup>2</sup>

\* \* \* \* \*

N-Ethylmethylallylamine

\* \* \* \* \*

Glyphosate solution (not containing surfactant)

\* \* \* \* \*

Hexamethylenediamine

\* \* \* \* \*

HiTec 321

\* \* \* \* \*

bis-(Hydrogenated tallow alkyl)methyl amines

\* \* \* \* \*

Phosphate esters, alkyl (C12-C14) amine

\* \* \* \* \*

Polyisobutenamine in aliphatic (C10-C14) solvent

\* \* \* \* \*

Poly (C17+) olefin amine

\* \* \* \* \*

Polyolefin amide alkeneamine (C17+)

\* \* \* \* \*

iso-Propylamine solution

\* \* \* \* \*

Roundup

8. Alkanolamines

\* \* \* \* \*

Ethoxylated long chain (C16+) alkylalkylamine

\* \* \* \* \*

Methyl diethanolamine

\* \* \* \* \*

Ucarsol CR Solvent 302 SG

\* \* \* \* \*

9. Aromatic Amines

\* \* \* \* \*

Alkyl (C8-C9) phenylamine in aromatic solvents

\* \* \* \* \*

Calcium long chain alkyl phenolic amine (C8-C40)

\* \* \* \* \*

Dialkyl (C8-C9) diphenylamines

\* \* \* \* \*

Diphenylamine

\* \* \* \* \*

Paraldehyde-Ammonia reaction product

\* \* \* \* \*

10. Amides

\* \* \* \* \*

Acetochlor

\* \* \* \* \*

N,N-bis(2-Hydroxyethyl) oleamide

\* \* \* \* \*

Zinc alkenyl carboxamide

\* \* \* \* \*

11. Organic Anhydrides

\* \* \* \* \*

Polyisobutenyl anhydride adduct

\* \* \* \* \*

12. Isocyanates

\* \* \* \* \*

Hexamethylene diisocyanate

\* \* \* \* \*

14. Acrylates

\* \* \* \* \*

Dodecyl-Octadecyl methacrylate mixture

\* \* \* \* \*

2-Hydroxyethyl acrylate <sup>2</sup>

\* \* \* \* \*

Polyalkyl (C10-C18) methacrylate/Ethylene

\* \* \* \* \*

propylene copolymer mixture

\* \* \* \* \*

Roehm monomer 6615

\* \* \* \* \*

18. Ketones

\* \* \* \* \*

1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one <sup>2</sup>

\* \* \* \* \*

19. Aldehydes

\* \* \* \* \*

3-(Methylthio)propionaldehyde

\* \* \* \* \*

20. Alcohols, Glycols

\* \* \* \* \*

1,4-Butanediol

\* \* \* \* \*

Diethyl hexanol

\* \* \* \* \*

Icosa(oxypropane-2,3-diyl)s

\* \* \* \* \*

2-Methyl-1,3-propanediol

\* \* \* \* \*

Penacosa(oxypropane-2,3-diyl)s

\* \* \* \* \*

Polyolefin amide alkeneamine polyol

\* \* \* \* \*

Trimethyl nonanol

\* \* \* \* \*

21. Phenols, Cresols

\* \* \* \* \*

Dibutylphenols

\* \* \* \* \*

30. Olefins

\* \* \* \* \*

Cyclopentadiene, Styrene, Benzene mixture

\* \* \* \* \*

Isoprene concentrate (Shell)

\* \* \* \* \*

Methyl butene

\* \* \* \* \*

Propylene, Propane, MAPP gas mixture

\* \* \* \* \*

32. Aromatic Hydrocarbons

\* \* \* \* \*

C9 Resinfeed (DSM) <sup>2</sup>

\* \* \* \* \*

1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)

\* \* \* \* \*

naphthalene mixture

\* \* \* \* \*

Naphthalene still residue

\* \* \* \* \*

Polyolefin amine in alkylbenzenes (C2-C4)

\* \* \* \* \*

Xylenes, Ethylbenzene mixture

\* \* \* \* \*

33. Miscellaneous Hydrocarbon Mixtures

\* \* \* \* \*

Asphalt emulsion

\* \* \* \* \*

Coal tar distillate

\* \* \* \* \*

Coal tar, high temperature

\* \* \* \* \*

Degummed C9 (DOW)

\* \* \* \* \*

Polyolefin amine (C28-C250)

\* \* \* \* \*

Polyolefin amide alkeneamine (C17+)  
 Polyolefin amide alkeneamine borate (C28-C250)  
 \* \* \* \* \*  
 Sulfurized fat (C14-C20)  
 Sulfurized polyolefinamide alkeneamines (C28-C250)  
 \* \* \* \* \*  
 34. Esters  
 \* \* \* \* \*  
 Alkyl (C10-C20, saturated and unsaturated) phosphite  
 Alkyl sulfonic acid ester of phenol  
 Alkylaryl phosphate mixtures (more than 40%)  
 Diphenyl tolyl phosphate, less than 0.02% ortho-isomer  
 \* \* \* \* \*  
 Calcium nitrate solution  
 \* \* \* \* \*  
 Copper salt of long chain alkanolic acids  
 \* \* \* \* \*  
 Diethylene glycol dibenzoate  
 \* \* \* \* \*  
 Dithiocarbamate ester (C7-C35)  
 \* \* \* \* \*  
 Ditridecyl adipate  
 \* \* \* \* \*  
 Polyolefin aminoester salt  
 \* \* \* \* \*  
 Potassium formate solution  
 \* \* \* \* \*  
 Potassium salt of polyolefin acid  
 \* \* \* \* \*  
 Tall oil fatty acid (*Resin acids less than 20%*)<sup>2</sup>  
 \* \* \* \* \*  
 Triethylene glycol dibenzoate  
 \* \* \* \* \*  
 36. Halogenated Hydrocarbons  
 \* \* \* \* \*  
 Bromochloromethane  
 \* \* \* \* \*  
 Catoxid feedstock<sup>2</sup>  
 \* \* \* \* \*  
 Dibromomethane  
 \* \* \* \* \*  
 Dibutylphenols  
 \* \* \* \* \*  
 3,4-Dichloro-1-butene  
 \* \* \* \* \*  
 1,2,3-Trichlorobenzene  
 \* \* \* \* \*  
 40. Glycol Ethers  
 Alkyl (C7-C11) phenol poly(4-12)ethoxylate  
 Alkyl (C9-C15) phenyl propoxylate  
 \* \* \* \* \*  
 Pentaethylene glycol methyl ether  
 \* \* \* \* \*  
 Poly(tetramethylene ether) glycols (mw 950-1050)

Polytetramethylene ether glycol  
 \* \* \* \* \*  
 Tetraethylene glycol methyl ether  
 41. Ethers  
 \* \* \* \* \*  
 tert-Amyl methyl ether  
 \* \* \* \* \*  
 Ethyl tert-butyl ether<sup>2</sup>  
 \* \* \* \* \*  
 Methyl tert-pentyl ether  
 42. Nitrocompounds  
 \* \* \* \* \*  
 Nitroethane, 1-Nitropropane mixture  
 \* \* \* \* \*  
 43. Miscellaneous Water Solutions  
 Alkyl polyglucoside solutions  
 \* \* \* \* \*  
 Ammonium lignosulfonate solution  
 \* \* \* \* \*  
 Calcium lignosulfonate solution  
 \* \* \* \* \*  
 Caramel solutions  
 \* \* \* \* \*  
 l-Lysine solution  
 \* \* \* \* \*  
 Sodium lignosulfonate solution  
 \* \* \* \* \*  
 Titanium dioxide slurry  
 \* \* \* \* \*  
 Footnotes to Table II  
<sup>1</sup> Because of very high reactivity or unusual conditions of carriage or potential compatibility problems, this product is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (G-MSO), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593-0001. Telephone (202) 267-1577.  
<sup>2</sup> See Appendix I—Exceptions to the Chart.  
**PART 150 APPENDIX [AMENDED]**  
 10. In appendix I(a):  
 a. Under the compound “Caustic Soda, 50% or less (5)” in the column “Member of reactive group”, revise the entry “Sodium chlorate (0)” in the column “Compatible with” to read “Sodium chlorate solution (0)”; add the new entry “Dodecyl alcohol (20)” to follow the entry “Diethylene glycol (40)” in the column “Compatible with”; and add the new entry “iso-Propyl alcohol (20)” to follow the entry “Propyl alcohol (20)” in the column “Compatible with”.  
 b. Preceding the entry “Dodecyl and Tetradecylamine mixture (7)” in the column “Member of reactive group”, add the new entry “tert-Dodecanethiol

(0)”; and, in the column “Compatible with”, add the corresponding entries “Acrylonitrile (15)”, “Diisodecyl phthalate (34)”, “Methyl ethyl ketone (18)”, “iso-Nonyl alcohol (20)”, “Perchloroethylene (36)”, “iso-Propyl alcohol (20)”, and “Tall oil, crude”.  
 c. Under the entry “Sodium hydrosulfide solution (5)” in the column “Member of reactive group”, add the new entry “Methyl alcohol (20)” to precede the entry “iso-Propyl alcohol (20)” in the column “Compatible with”.  
 11. In appendix I (b):  
 a. Remove the words “Ethylenediamine (7) is not compatible with Ethylene dichloride (36)” and add, in their place, the words “Ethylenediamine (7) and Ethyleneamine EA 1302 (7) are not compatible with either Ethylene dichloride (36) or 1,2,3-Trichloropropane (36)”.  
 b. Remove the words “Ethylene dichloride (36) is not compatible with Ethylenediamine (7)” and add, in their place, the words “Ethylene dichloride (36) is not compatible with Ethylenediamine (7) or Ethyleneamine EA 1302 (7)”.  
 c. Remove the words “2-Hydroxyethyl acrylate is not compatible with Groups 2, 3, 5-8 and 12” and add, in their place, the words “2-Hydroxyethyl acrylate (14) is not compatible with Group 5, 6, or 12”.  
 12. Amend Appendix I (b) by removing the following entries in their entirety:  
 a. “Naphtha, cracking fraction (33) is not compatible with strong acids, caustics or oxidizing agents”.  
 b. “Pentene, Miscellaneous hydrocarbon mixtures (30) are not compatible with strong acids or oxidizing agents”.  
 c. “Sodium salt of Ferric hydroxyethylethylenediamine triacetic acid solution (43) is not compatible with Group 3, Nitric acid”.  
 13. Amend Appendix I (b) by adding the following new entries in chemically proper alphabetical order to read as follows:  
 \* \* \* \* \*  
 C9 Resinfeed (DSM) (32) is not compatible with Group 2, Sulfuric acid.  
 \* \* \* \* \*  
 Carbon tetrachloride (36) is not compatible with  
 Tetraethylenepentamine or  
 Triethylenetetramine, both Group 7,  
 Aliphatic amines.  
 \* \* \* \* \*  
 Catoxid feedstock (36) is not compatible with Group 1, 2, 3, 4, 5, or 12.  
 \* \* \* \* \*

1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one (18) is not compatible with Group 5 (Caustics) or 10 (Amides).

\* \* \* \* \*

Diethylenetriamine (7) is not compatible with 1,2,3-Trichloropropane, Group 36, Halogenated hydrocarbons.

\* \* \* \* \*

Ethyl tert-butyl ether (41) is not compatible with Group 1, Non-oxidizing mineral acids.

\* \* \* \* \*

NIAX POLYOL APP 240C (0) is not compatible with Group 2, 3, 5, 7, or 12.

\* \* \* \* \*

Propylene, Propane, MAPP gas mixture (containing 12% or less MAPP gas) (30) is not compatible with Group 1 (Non-oxidizing mineral acids), Group

36 (Halogenated hydrocarbons), nitrogen dioxide, oxidizing materials, or molten sulfur.

\* \* \* \* \*

Tall oil fatty acid (*Resin acids less than 20%*) (34) is not compatible with Group 5, Caustics.

\* \* \* \* \*

Tetraethylenepentamine (7) is not compatible with Carbon tetrachloride, Group 36, Halogenated hydrocarbons.

\* \* \* \* \*

1,2,3-Trichloropropane (36) is not compatible with Diethylenetriamine, Ethylenediamine, Ethyleaneamine EA 1302, or Triethylenetetramine, all Group 7, Aliphatic amines.

\* \* \* \* \*

Triethylenetetramine (7) is not compatible with Carbon tetrachloride,

or 1,2,3-Trichloropropane, both Group 36, Halogenated hydrocarbons.

\* \* \* \* \*

**PART 151—BARGES CARRYING BULK LIQUID HAZARDOUS MATERIAL CARGOES**

14. The citation of authority for part 151 continues to read as follows:

**Authority:** 33 U.S.C. 1903; 46 U.S.C. 3703; 49 CFR 1.46.

**§ 151.05–1 [Amended]**

15. In § 151.05–1, remove paragraph (f) and redesignate paragraphs (g) through (r) as (f) through (q).

16. Following § 151.05–2, revise Table 151.05 to read as follows:

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS

Cargo identification <sup>1</sup>		Hull type	Cargo segregation tank	Tanks				Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank internal inspection period—years
Cargo name	Pressure			Temp.	Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Acetaldehyde	Press.	Amb.	II	1NA 2ii	Ind. Pressure	SR	Restr.	II	P-1	Inert	Vent F	Yes	.55-1(h)	I-C	NA	G
Acetic acid	Atmos.	Amb.	III	1i 2ii	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .55-1(g)	I-D	NA	G
Acetic anhydride	Atmos.	Amb.	III	1i 2ii	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73 .55-1(g)	I-D	NA	G
Acetone cyanohydrin	Atmos.	Amb.	I	1ii 2i	Integral Gravity	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-70(b) .50-73 .50-81	I-D	NA	G
Acetonitrile	Atmos.	Amb.	III	1i 2ii	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Acrylic acid	Atmos.	Amb.	III	1ii 2ii	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-73 .50-81 .58-1(a)	I-D	NA	G
Acrylonitrile	Atmos.	Amb.	II	1ii 2ii	Integral Gravity	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(e) .50-70(a)	I-D	NA	G
Adiponitrile	Atmos.	Amb.	II	1ii 2i	Integral Gravity	PV	Open	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Alkylbenzenesulfonic acid (greater than 4%)	Atmos.	Elev.	III	1ii 2ii	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .58-1(e)	I-B	NA	G
Alkyl(C7-C9) nitrates	Atmos.	Amb.	III	1i 2ii	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.50-81 .50-86	NA	NA	G
Allyl alcohol	Atmos.	Amb.	I	1ii 2ii	Integral Gravity	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-C	NA	G
Allyl chloride	Atmos.	Amb.	I	1ii 2ii	Integral Gravity	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5	I-D	NA	G
Aluminum sulfate solution	Atmos.	Amb.	III	1i 2i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.58-1(e)	NA	NA	G
Aminoethylethanolamine	Atmos.	Amb.	III	1i 2i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	NA	NA	G
Ammonia, anhydrous	Press.	Amb.	II	1NA 2ii	Ind. Pressure	SR250 p.s.i.	Restr.	II	P-2	NR	Vent F	No	.50-30 .50-32	I-D	NA	G
Ammonia, anhydrous	Atmos.	Low	II	1NA 2ii	Ind. Gravity	PV	Restr.	II-L	G-2	NR	Vent F	No	.50-30 .50-32	I-D	40- 1(b)(1)	8
Ammonium bisulfite solution (70% or less)	Atmos.	Amb.	III	1i 2i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	No	.50-73 .56-1(a), (b), (c)	NA	NA	G

	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.56-1(a), (b), (c), (f), (g)	I-D	NA	G
Ammonium hydroxide (28% or less NH <sub>3</sub> ) ..																
Aniline .....	Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G
Anthracene oil (Coal tar fraction) .....	Atmos.	Amb. Elev.	II	1 i i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	I-D	NA	G
Argon, liquefied .....	Press.	Low	III	1NA 2 i	Ind. Pressure .....	SR	Restr.	II-L	P-1	NR	Vent F	No	.40-1(a) .50-30 .50-36	NA	.40-1(a)	G
Benzene .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Benzene hydrocarbon mixtures (containing Acetylenes) (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60 .56-1(b), (d), (f), (g)	I-D	NA	G
Benzene hydrocarbon mixtures (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Benzene, Toluene, Xylene mixtures (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Butadiene .....	Press.	Amb.	II	1NA 2 i i	Ind. Pressure .....	SR	Restr.	II	P-2	NR	Vent F	Yes	.50-70(a) .50-73	I-B	NA	G
Butadiene, Butylene mixtures (containing Acetylenes).	Press.	Amb.	II	1NA 2 i i	Ind. Pressure .....	SR	Restr.	II	P-1	NR	Vent F	Yes	.50-30 .50-70(a) .50-73 .56-1(b), (d), (f), (g)	I-B	NA	G
Butyl acrylate (all isomers) .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Butylamine (all isomers) .....	Atmos.	Amb.	II	1 i i 2 i i	Ind. Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(c)	I-D	NA	G
Butyl methacrylate .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Butyraldehyde (all isomers) .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Open	II	G-1	NR	Vent F	Yes	.55-1(h)	I-C	NA	G
Camphor oil (light) .....	Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	I-D	NA	G
Carbolic oil .....	Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	NA	NA	G
Carbon dioxide, liquefied .....	Press.	Low	III	1NA 2 i	Ind. Pressure .....	SR	Restr.	I-L	P-1	NR	Vent F	No	.50-30	NA	.40-1(b)(1)	G
Carbon disulfide .....	Atmos.	Amb.	II	1NA 2 i i	Ind. Gravity .....	PV	Restr.	II	G-1	Inert	Vent F	Yes	.50-40 .50-41	I-A	NA	G
Carbon tetrachloride .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Open	II	G-1	NR	Vent N	No	No	NA	NA	G

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo identification <sup>1</sup>		Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank in-terminal in-spect. period—years
Cargo name	a.					b.	c.	d.	e.	Type	Vent	Gauging device					
a.		b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Cashew nut shell oil (untreated) .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-2	NR	Vent N	Yes	.50-73	NA	NA	G
Caustic potash solution .....		Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	NR	No	.50-73 .55-1(i)	NA	NA	G
Caustic soda solution .....		Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	NR	No	.50-73 .55-1(i)	NA	NA	G
Chlorine .....		Press.	Amb.	I	1NA 2 i i	Ind. Pressure .....	SR300 p.s.i.	Indirect	I	P-2	NR	Vent F	No	.50-30 .50-31	NA	NA	3
Chlorobenzene .....		Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Open	II	G-1	NR	NR	Yes	No	I-D	NA	G
Chloroform .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	NR	No	No	NA	NA	G
Chlorohydrins (crude) .....		Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5	I-D	NA	G
o-Chloronitrobenzene .....		Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	NA	NA	G
Chlorosulfonic acid .....		Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity .....	PV	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	G
Coal tar naphtha solvent .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73	I-D	NA	G
Coal tar pitch (molten) .....		Atmos.	Elev.	III	1 i i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73	I-D	NA	G
Creosote .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Cresols (all isomers) .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Cresols with less than 5% Phenol, see Cresols (all isomers).																	
Cresols with 5% or more Phenol, see Phenol.																	
Cresylate spent caustic .....		Atmos.	Amb.	III	1 i i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-73 .55-1(b)	NA	NA	G
Cresylic acid, sodium salt solution, see Cresylate spent caustic.																	
Crotonaldehyde .....		Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(h)	I-C	NA	G

	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(a), (b)	I-D	NA	G
Cyclohexanone .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(b)	I-D	NA	G
Cyclohexanone, Cyclohexanol mixture .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(a), (b), (c), (g)	I-D	NA	G
Cyclopentadiene, Styrene, Benzene mixture .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent F	Yes	.50-60 .56-1(b)	I-D	NA	G
iso-Decyl acrylate .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.50-70(a) .50-81(a), (b) .55-1(c)	NA	NA	G
Dichlorobenzene (all isomers) .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(a), (b)	I-D	NA	G
Dichlorodifluoromethane .....	Press.	Amb.	III	1NA 2 i	Ind. Pressure .....	SR	Restr.	II	P-1	NR	NR	No	No	NA	NA	G
1,1-Dichloroethane .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
2,2-Dichloroethyl ether .....	Atmos.	Amb.	II	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(f)	I-C	NA	G
Dichloromethane .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	No	I-D	NA	G
2,4-Dichlorophenoxy acetic acid, diethanolamine salt solution.	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.56-1(a), (b), (c), (g)	NA	NA	G
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution.	Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.56-1(a), (b), (c), (g)	NA	NA	G
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution.	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.56-1(a), (b), (c), (g)	NA	NA	G
1,1-Dichloropropane .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
1,2-Dichloropropane .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
1,3-Dichloropropane .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
1,3-Dichloropropene .....	Atmos.	Amb.	II	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Dichloropropene, Dichloropropane mixtures.	Atmos.	Amb.	II	1 i 2 ii	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
2,2-Dichloropropionic acid .....	Atmos.	Amb.	II	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	Dry	Vent F	Yes	.50-73 .58-1(e)	NA	NA	G
Diethanolamine .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	NA	NA	G

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo identification <sup>1</sup>		Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank in-internal in-spec. period—years
Cargo name	a.					b.	c.	d.	e.	Type	Vent	Gauging device					
Diethylamine	a.	Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-C	NA	G	
Diethylenetriamine		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	NA	NA	G	
Diethyl ether, see Ethyl ether.																	
Diisobutylamine		Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-C	NA	G	
Diisopropanolamine		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	NA	NA	G	
Diisopropylamine		Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity	PV	Closed	II	G-1	NR	Vent F	Yes	I-C	NA	G	
N,N-Dimethylacetamide		Atmos.	Amb.	III	1 i i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G	
Dimethylamine		Press.	Amb.	II	1NA 2 i i	Ind. Pressure	SR	Restr.	II	P-2	NR	Vent F	Yes	I-C	NA	G	
Dimethylethanolamine		Atmos.	Amb.	III	1 i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-C	NA	G	
Dimethylformamide		Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G	
1,4-Dioxane		Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity	PV	Closed	II	G-1	Inert	Vent F	Yes	I-C	NA	G	
Diphenylmethane diisocyanate		Atmos.	Elev.	II	1 i i 2 i	Integral Gravity	PV	Closed	I	G-1	Inert Dry	Vent F	Yes	NA	Yes	G	
Di-n-propylamine		Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-C	NA	G	
Dodecyl- dimethyl- amine, Tetradecyl- dimethylamine mixture.		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	NA	NA	G	
Dodecyl phenol		Atmos.	Amb.	I	1 i i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	I-D	NA	2	
Epichlorohydrin		Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity	PV	Closed	I	G-1	NR	Vent F	Yes	I-C	NA	G	
Ethanolamine		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	I-D	NA	G	
Ethyl acrylate		Atmos.	Amb.	III	1 i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G	

Ethylamine solution (72% or less) .....	Atmos.	Amb.	II	1 ii 2 ii	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(b)	I-D	NA	G
N-Ethylbutylamine .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(b)	I-C	NA	G
Ethyl chloride .....	Press.	Amb.	II	1NA 2 ii	Ind. Pressure .....	SR	Restr.	II	P-2	NR	Vent F	Yes	No	I-D	NA	8
N-Ethylcyclohexylamine .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(b)	I-C	NA	G
Ethylene chlorohydrin .....	Atmos.	Amb.	I	1 ii 2 ii	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G
Ethylene cyanohydrin .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Ethylenediamine .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(c)	I-D	NA	G
Ethylene dibromide .....	Atmos.	Amb.	II	1 ii 2 i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	No	No	NA	NA	G
Ethylene dichloride .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Ethylene glycol monoalkyl ethers .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-C	NA	G
<i>Including:</i> 2-Ethoxyethanol Ethylene glycol butyl ether Ethylene glycol tert-butyl ether Ethylene glycol ethyl ether Ethylene glycol methyl ether Ethylene glycol n-propyl ether Ethylene glycol isopropyl ether																
Ethylene glycol hexyl ether .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Ethylene glycol propyl ether .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Ethylene oxide .....	Press.	Amb.	I	1NA 2 ii	Ind. Pressure .....	SR	Restr.	II	P-2	Inert	Vent F	Yes	.50-10 .50-12	I-B	.40-1(c)	4
Ethyl ether .....	Atmos.	Amb.	II	1NA 2 ii	Ind. Gravity .....	PV	Closed	II	G-1	Inert	Vent F	Yes	.50-40 .50-42	I-C	NA	G
2-Ethylhexyl acrylate .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Ethylidene norbornene .....	Atmos.	Amb.	II	1 ii 2 ii	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-5 .50-74	NA	NA	G
Ethyl methacrylate .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a)	I-D	NA	G
2-Ethyl-3-propylacrolein .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-C	NA	G
Ferric chloride solutions .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-75	I-B	NA	G

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo identification <sup>1</sup>		Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank in-terminal in-spect. period—years
Cargo name	a.					b.	c.	d.	e.	Type	Vent	Gauging device					
a.		b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Fluorosilicic acid (30% or less) .....		Atmos.	Amb.	II	1 ii 2 ii	Ind. Gravity .....	PV	Closed	II	G-1	NR	Vent F	No	.50-20 .50-22 .50-73 .50-77	I-B	NA	4
Formaldehyde solution (37% to 50%) .....		Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.55-1 (h)	I-B	NA	G
Formic acid .....		Atmos.	Amb.	III	1 ii 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73 .55-1 (i)	I-D	NA	G
Furfural .....		Atmos.	Amb.	III	1 ii 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1 (h)	I-C	NA	G
Glutaraldehyde solution (50% or less) .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	No	NA	NA	G
Glyoxylic acid solution (50% or less) .....		Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .50-81 .58-1 (e)	NA	NA	G
Hexamethylenediamine solution .....		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1 (c)	I-D	NA	G
Hexamethyleneimine .....		Atmos.	Amb.	II	1 ii 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1 (b), (c)	I-C	NA	G
Hydrochloric acid .....		Atmos.	Amb.	III	1 NA 2 ii	Ind. Gravity .....	Open	Open	II	G-1	NR	Vent F	No	.50-20 .50-22 .50-73	I-B	NA	4
Hydrofluorosilicic acid (25% or less), see Fluorosilicic acid (30% or less).																	
2-Hydroxyethyl acrylate .....		Atmos.	Amb.	I	1 ii 2 i	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-70 (a) .50-73 .50-81 (a), (b)	NA	NA	G
Isoprene .....		Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Open	II	G-1	NR	Vent F	Yes	.50-70 (a) .50-81 (a), (b)	I-D	NA	G
Kraft pulping liquors (free alkali content 3% or more) (including: Black, Green, or White liquor).		Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	NR	No	.50-73 .56-1 (a), (c), (g)	NA	NA	G
Mesityl oxide .....		Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Methylacetylene, Propadiene mixture .....		Press.	Amb.	III	1 NA 2 ii	Ind. Pressure .....	SR	Restr.	II	P-2	NR	Vent F	Yes	.50-79	I-C	NA	G

	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Methyl acrylate .....																
Methylamine solution (42% or less) .....	Atmos.	Amb.	II	1NA 2ii	Ind. Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.56-1(a), (b), (c), (g)	I-D	NA	G
Methyl bromide .....	Press.	Amb.	I	1NA 2ii	Ind. Pressure .....	SR	Closed	I	P-2	NR	Vent F	Yes	.50-5	I-D	NA	2
Methyl chloride .....	Press.	Amb.	II	1NA 2ii	Ind. Pressure .....	SR	Restr.	II	P-2	NR	Vent F	Yes	.55-1(c)	I-D	NA	8
Methylcyclopentadiene dimer .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-B	NA	G
Methyl diethanolamine .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.56-1(b), (c)	I-C	NA	G
2-Methyl-5-ethylpyridine .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(e)	I-D	NA	G
Methyl methacrylate .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
2-Methylpyridine .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(c)	I-D	NA	G
alpha-Methylstyrene .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Monochloro- difluoromethane .....	Press.	Amb.	III	1NA 2i	Ind. Pressure .....	SR	Restr.	I	P-1	NR	NR	No	No	NA	NA	G
Morpholine .....	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-C	NA	G
Motor fuel anti-knock compounds (con- taining lead alkyls).	Atmos.	Amb.	I	1 ii 2 ii	Ind. Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-6 .50-73	I-D	NA	.50-6
Nitric acid (70% or less) .....	Atmos.	Amb.	II	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.50-20 .50-73 .50-80	I-B	NA	4
Nitrobenzene .....	Atmos.	Amb.	I	1 ii 2 ii	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G
Nitrogen, liquefied .....	Press.	Low	III	1NA 2i	Ind. Pressure .....	SR	Restr.	II-L	P-1	NR	Vent F	No	.40-1(a) .50-30 .50-36	NA	.40-1(a)	G
1- or 2-Nitropropane .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-81	I-C	NA	G
o-Nitrotoluene .....	Atmos.	Amb.	I	1 ii 2 ii	Integral Gravity .....	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G
Octyl nitrates (all isomers), see Alkyl(C7- C9) nitrates.																
Oleum .....	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	4

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo identification <sup>1</sup>		Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer			Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank in-terminal in-spect. period—years
Cargo name	a.					b.	c.	d.	e.	Type	Vent	Gauging device	Piping class					
Pentachloroethane		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	NA	NA	NA	G		
1,3-Pentadiene		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	.50-70(a) .50-81	I-D	NA	G		
Perchloroethylene		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	NA	NA	NA	G		
Phenol		Atmos.	Amb.	I	1 i 2 i	Integral Gravity	PV	Closed	I	G-1	NR	Vent F	.50-5 .50-73	I-D	NA	2		
Phosphoric acid		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	.50-20 .50-23 .50-73	I-B	NA	4		
Phosphorus, white (elemental)		Atmos.	Elev.	I	1 i 2 i	Integral Gravity	PV	Closed	I	G-1	Water Pad	Vent F	NA	NA	NA	4-8		
Phthalic anhydride (molten)		Atmos.	Elev.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	NA	I-D	NA	G		
Polyethylene polyamines		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	.55-1(e)	NA	NA	G		
Polymethylene polyphenyl isocyanate		Atmos.	Amb.	II	1 i 2 i	Integral Gravity	PV	Closed	II	G-1	Dry	Vent F	.55-1(e)	NA	NA	G		
Potassium hydroxide solution, see Caustic potash solution.																		
iso-Propanolamine		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	.55-1(c)	I-D	NA	G		
Propanolamine (iso-, n-)		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	.56-1(b), (c)	I-D	NA	G		
Propionic acid		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	.50-73 .55-1(g)	I-D	NA	G		
iso-Propylamine		Atmos.	Amb.	II	1 i 2 i	Integral Gravity	PV	Closed	II	G-1	NR	Vent F	.55-1(c)	I-D	NA	G		
Propylene oxide		Press.	Amb.	II	1NA 2 i	Ind. Pressure	SR	Restr.	II	P-1	Inert	Vent F	.50-10 .50-13	I-B	NA	G		
iso-Propyl ether		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	Inert	Vent F	.50-70(a)	I-D	NA	G		
Pyridine		Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	.55-1(e)	I-D	NA	G		
Sodium aluminate solution (45% or less) ...		Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	NR	.50-73 .56-1(a), (b), (c)	NA	NA	G		

Sodium chlorate solution (50% or less) .....	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-73	NA	NA	G
Sodium dichromate solution (70% or less)	Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity .....	Open	Closed	II	G-1	NR	Vent N	No	.50-5(d) .50-73 .56-1(b), (c)	NA	NA	G
Sodium hydroxide solution, <i>see</i> Caustic soda solution.																
Sodium hypochlorite solution (20% or less)	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.50-73 .56-1(a), (b)	NA	NA	G
Sodium sulfide, hydrosulfide solutions (H <sub>2</sub> S 15ppm or less).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-73 .55-1(b)	NA	NA	G
Sodium sulfide, hydrosulfide solutions (H <sub>2</sub> S greater than 15ppm but less than 200ppm).	Atmos.	Amb.	III	1 i i 2 i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	.50-73 .55-1(b)	NA	NA	G
Sodium sulfide, hydrosulfide solutions (H <sub>2</sub> S greater than 200ppm).	Atmos.	Amb.	II	1 i i 2 i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	No	.50-73 .55-1(b)	NA	NA	G
Sodium thiocyanate solution (56% or less)	Atmos.	Amb.	III	1 i 2 i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.58-1(a)	NA	NA	G
Styrene monomer .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Sulfur (molten) .....	Atmos.	Elev.	III	1 i 2 i i	Integral Gravity .....	Open	Open	II	G-1	Vent N	Vent N	Yes	.50-55	I-C	.40- 1(f)(1)	G
Sulfur dioxide .....	Press.	Amb.	I	1NA 2 i i	Ind. Pressure .....	SR	Closed	.....	P-2	NR	Vent F	No	.50-30 .50-84 .55-1(j)	NA	NA	2
Sulfuric acid .....	Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	4
Sulfuric acid, spent .....	Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	4
1,1,2,2-Tetrachloroethane .....	Atmos.	Amb.	III	1 i i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	No	No	NA	NA	G
Tetraethylenepentamine .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-C	NA	G
Tetrahydrofuran .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(b)	I-C	NA	G
Toluenediamine .....	Atmos.	Elev.	II	1 i i 2 i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-73 .56-1(a), (b), (c), (g)	NA	NA	G
Toluene diisocyanate .....	Atmos.	Amb.	I	1 i i 2 i i	Integral Gravity .....	PV	Closed	I	G-1	Dry N <sub>2</sub>	Vent F	Yes	.50-5 .55-1(e)	I-D	NA	G
o-Toluidine .....	Atmos.	Amb.	II	1 i i 2 i i	Integral Gravity .....	PV	Closed	II	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G

TABLE 151.05— SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo identification <sup>1</sup>		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control in-stall.	Tank in-terminal in-spect. period—years		
Cargo name	Pressure			Temp.	Type	Vent	Gauging device	Piping class	Control	Cargo tanks					Cargo handling space	
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
1,2,4-Trichlorobenzene	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
1,1,2-Trichloroethane	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	No	.50-73 .56-1(a)	I-D	NA	G
Trichloroethylene	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	No	No	I-D	NA	G
1,2,3-Trichloropropane	Atmos.	Amb.	II	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73 .56-1(a)	I-D	NA	G
Triethanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	I-C	NA	G
Triethylamine	Atmos.	Amb.	II	1 i 2 i i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(e)	I-C	NA	G
Triethylenetetramine	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	I-C	NA	G
Triphenylborane (10% or less), Caustic soda solution.	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	NR	No	.56-1(a), (b), (c)	NA	NA	G
Trisodium phosphate solution	Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	NR	No	.50-73 .56-1(a), (c)	NA	NA	G
Urea, Ammonium nitrate solution (containing more than 2% NH <sub>3</sub> ).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	PV	Restr.	II	G-1	NR	Vent F	No	.56-1(b)	I-D	NA	G
Valeraldehyde (all isomers)	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity	PV	Restr.	II	G-1	Inert	Vent F	Yes	No	I-C	NA	G
Vanillic black liquor (free alkali content 3% or more).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity	Open	Open	II	G-1	NR	NR	No	.50-73 .56-1(a), (c), (g)	NA	NA	G
Vinyl acetate	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity	PV	Open	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81(a), (b)	I-D	NA	G
Vinyl chloride	Press.	Amb.	II	1NA 2 i i	Ind. Pressure	SR	Closed	II	P-2	NR	Vent F	Yes	.50-30 .50-34	I-D	NA	8
Vinyl chloride	Atmos.	Low	II	1NA 2 i i	Ind. Gravity	PV	Closed	II-L	G-2	NR	Vent F	Yes	.50-30 .50-34	I-D	.40- 1(b)(1)	8
Vinylidene chloride	Atmos.	Amb.	II	1NA 2 i i	Ind. Gravity	PV	Closed	II	P-2	Padded	Vent F	Yes	.55-1(f) .50-70(a) .50-81(a), (b)	I-D	NA	G

Vinyltoluene .....	Atmos.	Amb.	III	1 i 2 i i	Integral Gravity .....	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a) .50-81 .56-1 (a), (b), (c), (g)	I-D	NA	G
For requirements see these sections in Part 151:..				.10- 1 .13- 5	.15- 1 .....	.15-5	.15- 10	.20- 1	.20- 5	.25-1	.25-2	.30		111.105 (Sub- chapter j)	.40	.04- 5

See Table 2 of Part 153 for additional cargoes permitted to be carried by tankbarge.

Terms and symbols:

Segregation—Tank—

Line 1—Segregation of cargo from surrounding waters:

i=Skin of vessel (single skin) only required. Cargo tank wall can be vessel's hull.

ii=Double skin required. Cargo tank wall cannot be vessel's hull.

Line 2—Segregation of cargo space from machinery spaces and other spaces which have or could have a source of ignition:

i=Single bulkhead only required. Tank wall can be sole separating medium.

ii=Double bulkhead required. Cofferdam, empty tank, pumproom, tank with Grade E Liquid (if compatible with cargo) is satisfactory.

Internal tank inspection—

G—Indicates cargo is subject to general provisions of 151.04-5(b).

Specific numbers in this column are changes from the general provisions.

Abbreviations used:

Tank type: Ind=Independent.

Vent

PV=Pressure vacuum valve.

SR=Safety relief.

Gauging device: Restr.=Restricted.

General usage:

NR=No requirement.

NA=Not applicable.

1. The provisions contained in 46 CFR Part 197, subpart C, apply to liquid cargoes containing 0.5% or more benzene by volume.

§ 151.12-5 [Amended]

17. Amend § 151.12-5 by adding the following new entries in chemically proper alphabetized order:

§ 151.12-5 Equipment for Category D NLS.

Cyclohexanone, Cycexanol mixture

Glyoxylic acid solution (50% or less)

\* \* \* \* \*

**PART 153—SHIPS CARRYING BULK LIQUID, LIQUEFIED GAS, OR COMPRESSED GAS HAZARDOUS MATERIALS**

18. The citation of authority for Part 153 continues to read as follows:

**Authority:** 46 U.S.C. 3703; 49 CFR 1.46. Section 153.40 issued under 49 U.S.C. 5103. Sections 153.470 through 153.491, 153.1100 through 153.1132, and 153.1600 through 153.1608 also issued under 33 U.S.C. 1903(b).

19. Revise Table 1 of part 153 to read as follows:

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Acetic acid .....	D	S	III	4m	PV	Restr	A	.238(a), .409, .527, .554, .933 .....	I-D
Acetic anhydride .....	D	S	II	4m	PV	Restr	A	.238(a), .409, .526, .527, .554, .933	I-D
Acetochlor .....	A	P	II	NR	Open	Open	A	.409 .....	NA
Acetone cyanohydrin .....	A	S/P	II	B/3	PV	Closed	A	.238(a), .316, .336, .408, .525, .526, .527, .912(a)(2), .933, .1002, .1004, .1020, .1035.	I-D
Acetonitrile .....	III	S	II	B/3	PV	Restr	A	.409, .525, .526, .1020 .....	I-D
Acrylamide solution (50% or less).	D	S	II	NR	Open	Closed	NSR	.409, .525(a), (c), (d), (e), .912(a)(1), .1002(a), .1004, .1020.	NA
Acrylic acid .....	D	S	III	4m	PV	Restr	A	.238(a), .409, .526, .912(a)(1), .933, .1002(a), .1004.	I-D
Acrylonitrile .....	B	S/P	II	B/3	PV	Closed	A	.236(a), (c), (d), .316, .408, .525, .526, .527, .912(a)(1), .1004, .1020.	I-D
Adiponitrile .....	D	S	III	4m	PV	Restr	A	.526 .....	I-D
Alachlor .....	B	S/P	III	NR	Open	Open	A, C	.238(a), .409, .440, .488, .908(a), (b).	NA
Alcohol (C6-C17) (secondary) poly(3-6)ethoxylates.	A	P	II	NR	Open	Open	A	.409 .....	NA
Alcohol (C6-C17) (secondary) poly(7-12)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .908(a), (b) .....	NA
Alcohol(C9-C11) poly(2.5-9) ethoxylate.	B	P	III	NR	Open	Open	A	.409, .440, .908(a) .....	NA
Alcohol(C12-C15) poly(...)ethoxylates, see Alcohol(C12-C16) poly(...)ethoxylates.									
Alcohol(C12-C16) poly(1-6)ethoxylates.	A	P	II	NR	Open	Open	A	.409 .....	NA
Alcohol(C12-C16) poly(7-19)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .908(a) .....	NA
Alcohol(C12-C16) poly(20+)ethoxylates.	C	P	III	NR	Open	Open	A	None .....	NA
Alkanes(C6-C9) (all isomers).	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Alkane(C14-C17) sulfonic acid, sodium salt solution (65% or less).	B	P	III	NR	Open	Open	NSR	.440, .908(a) .....	NA
Alkaryl polyether (C9-C20)	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) <sup>1</sup> .....	NA
Alkenyl(C16-C20) succinic anhydride.	D	S	III	B/3	PV	Closed	NSR	.316, .408, .525, .526, .1020 .....	NA
Alkyl acrylate-Vinyl pyridine copolymer in Toluene.	C	P	III	4m	PV	Restr	A	.409 .....	NA
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomer).	A	S/P	I	B/3	PV	Closed	A, B, C	.316, .408, .525, .526, .1020 .....	NA
Alkyl(C3-C4)benzenes (all isomers).	A	P	III	4m	PV	Restr	A	.409 .....	I-D
Alkyl(C5-C8)benzenes (all isomers).	A	P	II	NR	Open	Open	A	.409 .....	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Alkylbenzene, Alkylindane, Alkylindene mixture (each C12–C17).	A	P	II	NR	Open	Open	A	.409 .....	NA
Alkylbenzenesulfonic acid (greater than 4%).	C	S/P	III	NR	Open	Open	A, B	.440, .908(a) .....	NA
Alkylbenzenesulfonic acid, sodium salt solution.	C	P	III	NR	Open	Open	NSR	.440, .903, .908(a), (b) .....	NA
Alkyl(C7–C9) nitrates .....	B	S/P	II	NR	Open	Open	A, B	.409, .560, .1002 .....	NA
Alkyl (C7–C11) phenol poly(4-12) ethoxylate.	B	P	III	NR	Open	Open	A	.409, .440, .488 <sup>1</sup> , .908(a), (b) .....	I-D
Alkyl(C8–C9) phenylamine in aromatic solvent.	A	P	III	4m	PV	Restr	A	.409 .....	NA
Alkyl(C10–C20, saturated and unsaturated) phosphite.	C	P	III	NR	Open	Open	A	None .....	NA
Alkyl(C8–C10) polyglucoside solution (65% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b) .....	NA
Alkyl(C12–C14) polyglucoside solution (55% or less).	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a), (b) .....	NA
Alkyl(C8–C10)/(C12–C14): (40% or less/60% or more) polyglucoside solution (55% or less).	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a), (b) .....	NA
Alkyl(C8–C10)/(C12–C14): (50/50%) polyglucoside solution (55% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b) .....	NA
Alkyl(C8–C10)/(C12–C14): (60% or more/40% or less) polyglucoside solution (55% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b) .....	NA
Allyl alcohol .....	B	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .933, .1020.	I-C
Allyl chloride .....	B	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1020	I-D
Aluminum chloride (30% or less), Hydrochloric acid (20% or less) solution.	D	S	III	4m	PV	Restr	NSR	.252, .526, .527, .554, .557, .933, .1045, .1052.	I-B
2-(2-Aminoethoxy) ethanol	D	S	III	NR	Open	Open	A, C, D	.236(b), (c), .409 .....	NA
Aminoethylethanolamine ...	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g) .....	NA
N-Aminoethylpiperazine .....	D	S	III	4m	PV	Restr	A	.236(b), (c), .409, .526 .....	I-C
2-Amino-2-methyl-1-propanol (90% or less).	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g) .....	I-D
Ammonia aqueous (28% or less), see Ammonium hydroxide (28% or less NH <sub>3</sub> ).									
Ammonium bisulfite solution (70% or less).	D	S	III	4m	PV	Restr	No	.238(e), .526, .933, .1002 .....	NA
Ammonium hydroxide (28% or less NH <sub>3</sub> ).	C	S/P	III	4m	PV	Restr	A, B, C	.236(b), (c), (f), .526, .527 .....	I-D
Ammonium nitrate solution (greater than 45% and less than 93%).	D	S	II	NR	Open	Open	NSR	.238(d), .252, .336, .409, .554(a), (b).	NA
Ammonium sulfide solution (45% or less).	B	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .933, .1002, .1020.	I-D
Ammonium thiocyanate (25% or less), Ammonium thiosulfate (20% or less) solution.	C	P	III	NR	Open	Open	NSR	None .....	NA
Ammonium thiosulfate solution (60% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(b) .....	NA
Amyl acetate (all isomers)	C	P	III	4m	PV	Restr	A	.409 .....	I-D



TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Calcium hypochlorite solution (15% or less).	C	S/P	III	4m	PV	Restr	NSR	.236(a), (b) .....	NA
Calcium hypochlorite solution (more than 15%).	B	S/P	III	4m	PV	Restr	NSR	.236(a), (b), .409 .....	NA
Calcium long chain alkyl(C5–C10) phenate.	C	P	III	NR	Open	Open	A	None .....	NA
Calcium long chain alkyl salicylate (C13+).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) <sup>1</sup> .....	NA
Camphor oil .....	B	S/P	II	4m	PV	Restr	A, B	.409 .....	I-D
Carbolic oil .....	A	S/P	II	B/3	PV	Closed	A	.408, .440, .525, .526, .908(b), .933, .1020.	NA
Carbon disulfide .....	B	S/P	II	B/3	PV	Closed	C	.236(c), .252, .408, .500, .515, .520, .525, .526, .527, .1020, .1040.	I-A
Carbon tetrachloride .....	B	S/P	III	B/3	PV	Closed	NSR	.316, .409, .525, .526, .527, .1020	NA
Cashew nut shell oil (untreated).	D	S	III	4m	PV	Restr	A, B	.526, .933 .....	NA
Caustic potash solution .....	C	S/P	III	NR	Open	Open	NSR	.236(a), (c), (g), .933 .....	NA
Caustic soda solution .....	D	S	III	NR	Open	Open	NSR	.236(a), (c), (g), .933 .....	NA
Cetyl-Eicosyl methacrylate mixture.	III	S	III	NR	Open	Open	A, C, D	.912(a)(1), .1002(a), (b), .1004 .....	NA
Chlorinated paraffins (C10–C13).	A	P	I	NR	Open	Open	A	.408 .....	NA
Chloroacetic acid (80% or less).	C	S/P	II	B/3	PV	Closed	NSR	.238(e), .408, .440, .554, .908(b) ...	I-D
Chlorobenzene .....	B	S/P	III	4m	PV	Restr	A, B	.409, .526 .....	I-D
Chloroform .....	B	S/P	III	B/3	PV	Restr	NSR	.409, .525, .526, .527, .1020 .....	NA
( <i>crude</i> ) Chlorohydrins .....	D	S	II	B/3	PV	Closed	A	.408, .525, .526, .1020 .....	I-D
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution.	C	P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g) .....	NA
o-Chloronitrobenzene	B	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .336, .408, .440, .525, .526, .908(a), (b), .933, .1020.	NA
1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one.	B	P	III	NR	Open	Open	A, B, D	.409, .440, .488, .908(a), (b) .....	NA
2- or 3-Chloropropionic acid.	C	S/P	III	NR	Open	Open	A	.238(a), (b), .440, .554, .908(a), (b)	NA
Chlorosulfonic acid .....	C	S/P	I	B/3	PV	Closed	NSR	.408, .525, .526, .527, .554, .555, .602, .933, .1000, .1020, .1045.	I-B
o-Chlorotoluene .....	A	S/P	III	4m	PV	Restr	A, B, C	.409, .526 .....	I-D
m-Chlorotoluene .....	B	S/P	III	4m	PV	Restr	A, B, C	.409, .526 .....	I-D
p-Chlorotoluene .....	B	S/P	II	4m	PV	Restr	A, B, C	.409, .440, .526, .908(b) .....	I-D
Chlorotoluenes (mixed isomers).	A	S/P	II	4m	PV	Restr	A, B, C	.409, .526 .....	I-D
Coal tar .....	A	S/P	II	4m	PV	Restr	B, D	.409, .933, .1060 .....	I-D
Coal tar naphtha solvent ...	B	S/P	III	4m	PV	Restr	A, D	.409, .526, .933, .1060 .....	I-D
Coal tar pitch (molten) .....	D	S	III	4m	PV	Restr	B, D	.252, .409, .933, .1060 .....	I-D
Cobalt naphthenate in solvent naphtha.	A	S/P	II	4m	PV	Restr	A, D	.409, .526 .....	I-D
Coconut oil, fatty acid .....	C	P	III	NR	Open	Open	A	.440, .903, .908(a), (b) .....	NA
Cottonseed oil, fatty acid ...	[C]	P	III	NR	Open	Open	A	.440, .903, .908(a) .....	NA
Creosote (coal tar) .....	A	S/P	II	NR	Open	Open	A, B, D	.409 .....	I-D
Creosote (wood) .....	A	S/P	II	NR	Open	Open	A, B, D	.409 .....	NA
Cresols (all isomers) .....	A	S/P	II	NR	Open	Open	A, B	.409, .440, .908(b) .....	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
<i>Cresols with less than 5% Phenol, see Cresols (all isomers)</i>									
<i>Cresols with 5% or more Phenol, see Phenol</i>									
Cresylate spent caustic (mixtures of Cresols and Caustic soda solutions).	A	S/P	II	NR	Open	Open	NSR	.236(a), (c), .409, .933	NA
Cresylic acid, dephenolized	A	S/P	II	NR	Open	Open	A, B	.409	NA
Cresylic acid, sodium salt solution, see Cresylate spent caustic.									
Crotonaldehyde	A	S/P	II	B/3	PV	Restr	A	.316, .409, .525, .526, .527, .1020	I-C
Cumene (isopropylbenzene), see Propylbenzene (all isomers).									
1,5,9-Cyclododecatriene	A	S/P	I	4m	PV	Restr	A	.236(b), (c), .408, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Cycloheptane	C	P	III	4m	PV	Restr	A	.409	I-D
Cyclohexane	C	P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-D
Cyclohexanone	D	S	III	4m	PV	Restr	A	.236(a), (b), .409, .526	I-D
Cyclohexanone, Cyclohexanol mixture.	D	S	III	4m	PV	Restr	A	.236(a), (b), .526	I-D
Cyclohexyl acetate	B	P	III	4m	PV	Restr	A	.409	I-D
Cyclohexylamine	C	S/P	III	4m	PV	Restr	A, C, D	.236(a), (b), (c), (g), .409, .526	I-D
1,3-Cyclopentadiene dimer (molten).	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(a), (b)	I-C
Cyclopentane	C	P	III	4m	PV	Restr	A	.409	I-D
Cyclopentene	B	P	III	4m	PV	Restr	A	.409	I-D
p-Cymene	C	P	III	4m	PV	Restr	A	.409	I-D
iso-Decaldehyde	@C	P	III	NR	Open	Open	A	None	I-C
n-Decaldehyde	@B	P	III	NR	Open	Open	A	None	I-C
Decanoic acid	C	P	III	NR	Open	Open	A	.440, .903, .908(a), (b)	NA
Decene	B	P	III	4m	PV	Restr	A	.409	I-D
Decyl acetate	B	P	III	NR	Open	Open	A	.409	NA
(iso-, n-) Decyl acrylate	A	S/P	II	NR	Open	Open	A, C, D	.236(a), (b), (c), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
Decyl alcohol (all isomers)	B	P	III	NR	Open	Open	A	.409, .440, .908(b)	I-D
Decyloxytetrahydrothiophene dioxide.	A	S/P	II	B/3	PV	Restr	A	.409, .526	NA
Dibromomethane	C	S/P	II	4m	PV	Restr	NSR	.236(a), (b), (d), .408, .525(a), (c), (d), (e), .526, .933, .1020.	NA
Dibutylamine	C	S/P	III	4m	PV	Restr	A, B, C, D	.236(b), (c), .409, .526	I-C
Dibutyl hydrogen phosphonate.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
ortho-Dibutyl phthalate	A	P	II	NR	Open	Open	A	.409	I-D
Dichlorobenzene (all isomers) <sup>1</sup> .	B	S/P	II	4m	PV	Restr	A, B, D	.236(a), (b), .409, .440, .488 <sup>1</sup> , .526, .908(a), (b) <sup>1</sup> .	I-D
3,4-Dichloro-1-butene	B	S/P	III	B/3	PV	Closed	A, B, C	.316, .409, .525(a), (c), (d), (e), .526, .527, .933, .1020.	I-D
1,1-Dichloroethane	D	S	III	4m	PV	Restr	A, B	.409, .526, .527	I-D
2,2'-Dichloroethyl ether	B	S/P	II	4m	PV	Restr	A	.236(a), (b), .409, .526	I-C
1,6-Dichlorohexane	B	S/P	II	4m	PV	Restr	A, B	.409, .526	NA
2,2'-Dichloroisopropyl ether	C	S/P	II	B/3	PV	Restr	A, B, C, D	.236(a), (b), .316, .408(a), .440, .525, .526, .1020.	I-D
Dichloromethane	D	S	III	4m	PV	Restr	NSR	.526	I-D
2,4-Dichlorophenol <sup>4</sup>	A	S/P	II	4m	PV	Restr	A, B, C, D	.236(a), (b), (c), (g), .409, .440, .500, .501, .526, .908(b), .933.	I-D
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
1,1-Dichloropropane	C	S/P	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,2-Dichloropropane	C	S/P	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,3-Dichloropropane	D	S	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,3-Dichloropropene	B	S/P	II	B/3	PV	Closed	A, B	.316, .336, .408, .525, .526, .527, .1020.	I-D
Dichloropropene, Dichloropropane mixtures.	B	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .336, .408, .526, .527	I-D
2,2-Dichloropropionic acid	D	S	III	4m	PV	Restr	A	.238(e), .266, .500, .501, .554, .933	NA
Diethanolamine	D	S	III	NR	Open	Open	A	.236(b), (c)	NA
Diethylamine	C	S/P	III	B/3	PV	Restr	A	.236(a), (b), (c), (g), .409, .525, .526, .527, .1020.	I-C
Diethylaminoethanol, <i>see</i> Diethylethanolamine									
2,6-Diethylaniline	C	S/P	III	NR	Open	Open	B, C, D	.236(b), .409, .440, .908(b)	NA
Diethylbenzene	A	P	III	4m	PV	Restr	A	.409	I-D
Diethylenetriamine	D	S	III	NR	Open	Open	A	.236(b), (c)	NA
Diethylethanolamine	C	S/P	III	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526	I-C
Diethyl ether, <i>see</i> Ethyl ether									
Di-(2-ethylhexyl) phosphoric acid.	C	S/P	III	NR	Open	Open	A, B, C, D	.236(b), (c)	I-D
Diethyl phthalate	C	P	III	NR	Open	Open	A	None	I-D
Diethyl sulfate	B	S/P	II	4m	PV	Closed	A, D	.236(a), (c), (d), .409, .526, .933	I-D
Diglycidyl ether of Bisphenol A.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Diglycidyl ether of Bisphenol F.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Di-n-hexyl adipate	B	P	III	NR	Open	Open	A	.409	NA
Diisobutylamine	C	S/P	II	4m	PV	Restr	A, B, C, D	.236(a), (b), (c), (g), .409, .525(a), (c), (d), (e), .526, .1020.	I-C
Diisobutylcarbinol	@C	P	III	NR	Open	Open	A	None	I-D
Diisobutylene	B	P	III	4m	PV	Restr	A	.409	I-D
Diisobutyl phthalate	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	I-D
Diisopropanolamine	C	S/P	III	NR	Open	Open	A	.236(b), (c), .440, .908(a), (b)	I-D
Diisopropylamine	C	S/P	II	B/3	PV	Closed	A	.236(b), (c), .408, .525, .526, .527, .1020.	I-C
Diisopropylbenzene (all isomers).	A	P	II	NR	Open	Open	A	.409	I-D
N,N-Dimethylacetamide	D	S	III	B/3	PV	Restr	B	.236(b), .316, .525, .526, .527, .1020.	I-D
N,N-Dimethylacetamide solution (40% or less).	D	S	III	B/3	PV	Restr	B	.236(b), .316, .526	I-D
Dimethyl adipate	B	P	III	NR	Open	Open	A	.409, .440, .908(b)	NA
Dimethylamine solution (45% or less).	C	S/P	III	B/3	PV	Restr	A, C, D	.236(a), (b), (c), (g), .409, .525, .526, .527, .1020.	I-C
Dimethylamine solution (over 45% but not over 55%).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .1020.	I-C
Dimethylamine solution (over 55% but not over 65%).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .372, .408, .525, .526, .527, .1020.	I-C
2,6-Dimethylaniline	[C]	S/P	III	NR	Open	Open	B, C, D	.236(b), .409, .440, .908(b)	I-D
N,N-Dimethylcyclohexylamine.	C	S/P	II	B/3	PV	Restr	A, C	.236(a), (b), (c), (g), .316, .409, .525, .526, .527, .1020.	NA
N,N-Dimethyldodecylamine	A	S/P	I	NR	Open	Open	B	.236(b), .408	NA
Diethylethanolamine	D	S	III	4m	PV	Restr	A, D	.236(b), (c), .409, .526	I-C

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Dimethylformamide .....	D	S	III	4m	PV	Restr	A, D	.236(b), .409, .526 .....	I-D
Dimethyl glutarate .....	C	P	III	NR	Open	Open	A	None .....	NA
Dimethyl hydrogen phosphite.	B	S/P	III	4m	PV	Restr	A, D	.526 .....	NA
Dimethyl naphthalene sulfonic acid, sodium salt solution.	[A]	P	III	NR	Open	Open	NSR	.409 .....	NA
Dimethyloctanoic acid .....	C	P	III	NR	Open	Open	A	.440, .903, .908(b) .....	I-D
Dimethyl phthalate .....	C	P	III	NR	Open	Open	A	None .....	I-D
Dimethyl succinate .....	C	P	III	NR	Open	Open	A	.440, .908(b) .....	NA
Dinitrotoluene (molten) .....	A	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1003, .1020.	I-C
1,4-Dioxane .....	D	S	II	B/3	PV	Closed	A	.408, .525, .526, .1020 .....	I-C
Dipentene .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Diphenyl .....	A	P	I	NR	Open	Open	B	.408 .....	I-D
Diphenylamine (molten) .....	B	P	III	NR	Open	Open	B, D	.236(b), .409, .440, .488, .908(b) ...	NA
Diphenylamines, alkylated	A	P	II	NR	Open	Open	A	.409 .....	NA
Diphenylamine, reaction product with 2,2,4-Trimethylpentene.	A	S/P	I	NR	Open	Open	A	.408 .....	NA
Diphenyl, Diphenyl ether mixtures.	A	P	I	NR	Open	Open	B	.408 .....	I-D
Diphenyl ether .....	A	P	III	NR	Open	Open	A	.409 .....	I-D
Diphenyl ether, Biphenyl phenyl ether mixture.	A	P	III	NR	Open	Open	A, B	.409 .....	NA
Diphenylmethane diisocyanate <sup>6</sup> .	B	S/P	II	B/3	PV	Closed	A, B, C <sup>6</sup> , D	.236(a), (b), .316, .409, .440, .500, .501, .525, .526, .602, .908(a), .1000, .1020.	NA
Diphenylol propane-epichlorohydrin resins.	B	P	III	NR	Open	Open	A, B	.409, .440, .908(a) .....	NA
Di-n-propylamine .....	C	S/P	III	4m	PV	Restr	A	.236(b), (c), .409, .525, .526, .1020	I-C
Dithiocarbamate ester (C7-C35).	A	P	II	NR	Open	Open	A, D	.409 .....	NA
Dodecanol .....	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b) .....	I-D
Dodecene (all isomers) .....	B	P	III	NR	Open	Open	A	.409 .....	I-D
Dodecyl alcohol, see Dodecanol.									
Dodecylamine, Tetradecylamine mixture.	A	S/P	II	4m	PV	Restr	A, D	.236(b), (c), .409, .526 .....	NA
Dodecyl dimethylamine, Tetradecyl dimethylamine mixture.	A	S/P	II	NR	Open	Open	B, C, D	.236(b), .409 .....	NA
Dodecyl diphenyl ether disulfonate solution.	A	S/P	II	NR	Open	Open	NSR	.409 .....	NA
Dodecyl hydroxypropyl sulfide.	A	P	I	NR	Open	Open	A	.408 .....	NA
Dodecyl methacrylate .....	III	S	III	NR	Open	Open	A, C	.236(b), (c), .912(a)(1), .1004 .....	I-D
Dodecyl-Octadecyl methacrylate mixture.	D	S	III	NR	Open	Restr	A, D	.236(b), .912(a)(1), .1002(a), (b), .1004.	NA
Dodecyl-Pentadecyl methacrylate mixture.	III	S	III	NR	Open	Open	A, C, D	.912(a)(1), .1002(a), (b), .1004 .....	NA
Dodecyl phenol .....	A	P	I	NR	Open	Open	A	.408 .....	I-D
Drilling brine (containing Zinc salts).	B	P	III	NR	Open	Open	NSR	.409 .....	NA
Epichlorohydrin .....	A	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1020	I-C
Ethanolamine .....	D	S	III	NR	Open	Open	A	.236(b), (c), .526 .....	I-D
2-Ethoxyethyl acetate .....	C	P	III	4m	PV	Restr	A	.409 .....	I-C
Ethyl acrylate .....	A	S/P	II	4m	PV	Restr	A	.409, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Ethylamine .....	C	S/P	II	B/3	PV	Closed	C, D	.236(b), (c), .252, .372, .409, .525, .526, .527, .1020.	I-D
Ethylamine solution (72% or less).	C	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .372, .408, .525(a), (c), (d), (e), .526, .527, .1020.	I-D
Ethyl amyl ketone .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Ethylbenzene .....	B	P	III	4m	PV	Restr	A	.409 .....	I-D
N-Ethylbutylamine .....	C	S/P	III	4m	PV	Restr	A	.236(a), (b), (c), (g), .409, .525(a), (c), (d), (e), .526, .1020.	I-C
Ethyl tert-butyl ether .....	C	P	III	4m	PV	Restr	A	.409 .....	I-C
Ethyl butyrate .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Ethylcyclohexane .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
N-Ethylcyclohexylamine .....	D	S	III	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526 .....	I-C
S-Ethyl dipropylthio-carbamate.	C	P	III	NR	Open	Open	A	None .....	NA
Ethylene chlorohydrin .....	C	S/P	II	B/3	PV	Closed	A, D	.316, .408, .525, .526, .527, .933, .1020.	I-D
Ethylene cyanohydrin .....	D	S	III	NR	Open	Open	A	None .....	NA
Ethylenediamine .....	C	S/P	II	4m	PV	Restr	A	.236(b), (c), .409, .440, .526, .908(b).	I-D
Ethylene dibromide .....	B	S/P	II	B/3	PV	Closed	NSR	.408, .440, .525, .526, .527, .908(b), .1020.	NA
Ethylene dichloride .....	B	S/P	II	4m	PV	Restr	A, B	.236(b), .408, .526 .....	I-D
Ethylene glycol butyl ether acetate.	C	P	III	NR	Open	Open	A	None .....	I-C
Ethylene glycol diacetate ... <i>Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate</i>	C	P	III	NR	Open	Open	A	None .....	I-D
Ethylene glycol methyl ether acetate.	C	P	III	NR	Open	Open	A	None .....	I-C
Ethylene glycol monoalkyl ether. <i>Including: 2-Ethoxyethanol Ethylene glycol butyl ether Ethylene glycol tert-butyl ether Ethylene glycol ethyl ether Ethylene glycol hexyl ether Ethylene glycol methyl ether Ethylene glycol n-propyl ether Ethylene glycol isopropyl ether</i>	D	S	III	4m	PV	Restr	A	.409 .....	I-C
Ethylene oxide (30% or less), Propylene oxide mixture.	C	S/P	II	B/3	PV	Closed	A, C	.252, .372, .408, .440, .500, .525, .526, .530, .1010, .1011, .1020.	I-B
Ethyl ether .....	III	S	II	4m	PV	Closed	A	.236(g), .252, .372, .408, .440, .500, .515, .526, .527.	I-C
Ethyl-3-ethoxypropionate ...	C	P	III	4m	PV	Restr	A	.409 .....	NA
2-Ethylhexanol .....	@C	P	III	NR	Open	Open	A	None .....	I-D
2-Ethylhexyl acrylate .....	B	S/P	III	NR	Open	Open	A	.409, .912(a)(1), .1002(a), (b), .1004.	I-D
2-Ethylhexylamine .....	B	S/P	II	B/3	PV	Restr	A	.236(b), (c), .409, .525, .526, .1020	I-D
Ethyl hexyl phthalate .....	C	P	III	NR	Open	Open	A	None .....	NA
Ethylidene norbornene .....	B	S/P	III	B/3	PV	Restr	A, B, C, D	.236(b), .409, .526 .....	NA
Ethyl methacrylate .....	D	S	III	4m	PV	Restr	A, B, D	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Ethylphenol .....	A	S/P	III	NR	Open	Open	B	.409 .....	I-D
2-Ethyl-3-propylacrolein .....	A	S/P	III	4m	PV	Restr	A	.409, .526 .....	I-C
Ethyl toluene .....	B	P	III	4m	PV	Restr	A	.409 .....	I-D
Ferric chloride solutions ...	C	S/P	III	NR	Open	Open	NSR	.409, .440, .554, .555, .908(b), .1045.	I-B
Ferric nitrate, Nitric acid solution.	C	S/P	II	4m	PV	Restr	NSR	.408, .526, .527, .554, .555, .559, .933, .1045.	I-B

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Fluorosilicic acid (30% or less).	C	S/P	III	B/3	PV	Restr	NSR	.252, .526, .527, .554, .555, .933, .1045.	I-B
Formaldehyde (50% or more), Methanol mixtures.	#	S/P	III	4m	PV	Closed	A	.409, .526, .527 .....	I-B
Formaldehyde solution (37% to 50%).	C	S/P	III	4m	PV	Restr	A	.409, .440, .526, .527, .908(b) .....	I-B
Formic acid .....	D	S	III	4m	PV	Restr	A	.238(b), (c), .409, .526, .527, .554, .933.	I-D
Fumaric adduct of rosin, water dispersion.	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a) .....	NA
Furfural .....	C	S/P	III	4m	PV	Restr	A	.409, .526 .....	I-C
Furfuryl alcohol .....	C	P	III	NR	Open	Open	A	None .....	I-C
Glutaraldehyde solution (50% or less).	D	S	III	NR	Open	Open	NSR	None .....	NA
Glycidyl ester of C10 Trialkyl acetic acid, <i>see</i> Glycidyl ester of Tridecyl acetic acid.									
Glycidyl ester of Tridecyl acetic acid.	B	P	III	NR	Open	Open	A	.409 .....	NA
Glyoxylic acid solution (50% or less).	D	S	III	NR	Open	Open	A, C, D	.238(e), .554(a), (b), (c), .933, .1002.	NA
Heptane (all isomers), <i>see</i> Alkanes(C6–C9) ( <i>all isomers</i> ).	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Heptanol (all isomers) .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Heptene (all isomers) .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Heptyl acetate .....	B	P	III	NR	Open	Open	A	.409 .....	NA
Hexamethylenediamine (molten).	C	S/P	II	B/3	PV	Closed	C	.236(a), (b), (c), (g), .316, .336, .409, .440, .525, .526, .527, .908(a), (b), .933, .1020.	NA
Hexamethylenediamine solution.	C	S/P	III	4m	PV	Restr	A	.236(b), (c), .409, .440, .526, .908(b).	I-D
Hexamethylene diisocyanate <sup>6</sup> ..	B	S/P	II	B/3	PV	Closed	A, C <sup>6</sup> , D	.238(d), .252, .316, .336, .408, .500, .501, .525, .526, .527, .602, .1000, .1020.	NA
Hexamethyleneimine .....	C	S/P	II	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526 .....	I-C
Hexane (all isomers), <i>see</i> Alkanes(C6–C9).	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Hexene (all isomers) .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Hexyl acetate .....	B	P	III	4m	PV	Restr	A	.409 .....	I-D
Hydrochloric acid .....	D	S	III	4m	PV	Restr	NSR	.252, .526, .527, .554, .557, .933, .1045, .1052.	I-B
Hydrogen peroxide solutions (over 8% but not over 60%).	C	S/P	III	B/3	PV	Closed	NSR	.238(a), (c), .355, .409, .440(a)(1)&(2), .500, .933, .1004(a)(2), .1500.	NA
Hydrogen peroxide solutions (over 60% but not over 70%).	C	S/P	II	B/3	PV	Closed	NSR	.238(a), (c), .355, .409, .440(a)(1)&(2), .500, .933, .1004(a)(2), .1500.	NA
2-Hydroxyethyl acrylate .....	B	S/P	II	B/3	PV	Closed	A	.408, .525, .526, .912(a)(1), .933, .1002(a), (b), .1004, .1020.	NA
N,N-bis(2-Hydroxyethyl) oleamide.	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(a), (b) .....	NA
2-Hydroxy-4-(methylthio)butanoic acid.	C	P	III	NR	Open	Open	A	.440, .903, .908(a) .....	NA
<i>alpha</i> -hydro-omega-Hydroxytetradeca(oxytetramethylene), <i>see</i> Poly(tetramethylene ether) glycols (mw 950-1050).									
Icosa (oxypropane-2,3-diyl)s.	B	P	III	NR	Open	Open	A	.409, .440, .908(a) .....	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Isophorone diamine .....	D	S	III	4m	PV	Restr	A	.236(b), (c), .526 .....	NA
Isophorone diisocyanate <sup>6</sup>	B	S/P	II	B/3	PV	Closed	A, B, C <sup>6</sup> , D	.236(a), (b), .316, .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
Isoprene .....	C	S/P	III	4m	PV	Restr	B	.372, .409, .440, .912(a)(1), .1002(a), (b), .1004.	I-D
<i>Isopropylbenzene, see Propylbenzene (all isomers)</i>									
Lactonitrile solution (80% or less).	B	S/P	II	B/3	PV	Closed	A, C, D	.238(d), .252, .316, .336, .408, .440, .525, .526, .527, .908(a), .912(a)(2), .1002, .1004, .1020, .1035.	I-D
Lauric acid .....	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b) .....	NA
Lauryl polyglucose (50% or less), <i>see Alkyl(C12–C14) polyglucoside solution (55% or less).</i>									
Long chain alkaryl polyether (C11–C20).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) <sup>1</sup> .....	NA
Long chain polyetheramine in alkyl(C2–C4)benzenes.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a) .....	I-D
Magnesium long chain alkyl salicylate (C11+).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) <sup>1</sup> .....	NA
Maleic anhydride <sup>7</sup> .....	D	S	III	4m	PV	Restr	<sup>7</sup> A, C	None .....	I-D
Mercaptobenzothiazol, sodium salt solution, <i>see Sodium-2-mercaptobenzothiazol solution</i>									
Mesityl oxide .....	D	S	III	4m	PV	Restr	A	.236(b), (c), .409, .526 .....	I-D
Metam sodium solution .....	A	S/P	II	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409 .....	NA
Methacrylic acid .....	D	S	III	4m	PV	Restr	A	.238(a), .526, .912(a)(1), .1002(a), .1004.	NA
Methacrylic resin in Ethylene dichloride.	B	S/P	II	4m	PV	Restr	A, B	.236(b), .408, .440, .526, .908(a) ...	I-D
Methacrylonitrile .....	D	S	II	B/3	PV	Closed	A	.236(b), .316, .408, .525, .526, .527, .912(a)(1), .1002(a), .1004, .1020.	NA
<i>N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide, see Metolachlor</i>									
Methyl acrylate .....	B	S/P	II	4m	PV	Restr	A, B	.409, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Methylamine solution (42% or less).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .1020.	I-D
Methylamyl acetate .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Methylamyl alcohol .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Methyl butyrate .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Methylcyclohexane .....	C	P	III	4m	PV	Restr	A	.409 .....	I-D
Methylcyclopentadiene dimer.	B	P	III	4m	PV	Restr	B	.409 .....	I-B
Methyl diethanolamine .....	D	S	III	NR	Open	Open	A	.236(b), (c) .....	I-C
<i>Methylene chloride, see Dichloromethane</i>									
2-Methyl-6-ethylaniline .....	C	S/P	III	NR	Open	Open	A, B, C, D	None .....	NA
2-Methyl-5-ethylpyridine .....	B	S/P	III	NR	Open	Open	A, D	.236(b), .409 .....	I-D
Methyl formate .....	D	S	II	B/3	PV	Restr	A	.372, .408, .440, .525, .526, .527, .1020.	I-D
Methyl heptyl ketone .....	B	P	III	4m	PV	Restr	A	.409 .....	I-D
2-Methyl-2-hydroxy-3-butyne.	III	S	III	4m	PV	Restr	A, B, C, D	.236(b), (d), (f), (g), .409, .526 .....	I-D
Methyl methacrylate .....	D	S	II	4m	PV	Restr	A, B	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Methyl naphthalene (molten). 2-Methyl-1-pentene ( <i>Hexene (all isomers)</i> ), see Alkanes(C6–C9). 4-Methyl-1-pentene ( <i>Hexene (all isomers)</i> ), see Alkanes(C6–C9). Methyl tert-pentyl ether, see tert-Amyl methyl ether.	A	S/P	II	4m	PV	Restr	A, D	.409 .....	I-D
2-Methylpyridine .....	D	S	II	B/3	PV	Closed	A, C	.236(b), .408, .525(a), (c), (d), (e), .1020.	I-D
3-Methylpyridine .....	C	S/P	II	B/3	PV	Closed	A, C	.236(b), .408, .525(a), (c), (d), (e), .1020.	I-D
4-Methylpyridine .....	D	S	II	B/3	PV	Closed	A, C, D	.236(b), .408, .440, .525(a), (c), (d), (e), .526, .908(b), .1020.	I-D
Methyl salicylate .....	B	P	III	NR	Open	Open	A	.409 .....	I-D
alpha-Methylstyrene .....	A	S/P	III	4m	PV	Restr	A, D	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
3-(Methylthio) propionaldehyde.	B	S/P	III	B/3	PV	Closed	B, C	.238(e), .316, .408, .525, .526, .527, .1020.	NA
Metolachlor .....	B	P	III	NR	Open	Open	A	.409 .....	NA
Morpholine .....	D	S	III	4m	PV	Restr	A	.236(b), (c), .409 .....	I-C
Motor fuel anti-knock compounds (containing lead alkyls).	A	S/P	I	B/3	PV	Closed	A, B, C	.252, .316, .336, .408, .525, .526, .527, .933, .1020, .1025.	I-D
Naphthalene (molten) .....	A	S/P	II	4m	PV	Restr	A, D	.409, .440, .908(b) .....	I-D
Naphthalene sulfonic acid, sodium salt solution (40% or less).	[A]	P	III	NR	Open	Open	NSR	.409 .....	NA
Naphthenic acid .....	A	P	II	NR	Open	Open	A	.409 .....	NA
Naphthenic acid, sodium salt solution.	[A]	P	II	NR	Open	Open	NSR	.409 .....	NA
Neodecanoic acid .....	C	P	III	NR	Open	Open	A	None .....	NA
Nitrating acid ( <i>mixture of sulfuric and nitric acids</i> ).	C	S/P	II	B/3	PV	Closed	NSR	.316, .408, .526, .527, .554, .555, .556, .559, .602, .933, .1000, .1045.	I-B
Nitric acid (70% or less) ....	C	S/P	II	4m	PV	Restr	NSR	.408, .526, .527, .554, .555, .559, .933, .1045.	I-B
Nitrobenzene .....	B	S/P	II	B/3	PV	Closed	A, D	.316, .336, .408, .440, .525, .526, .908(b), .933, .1020.	I-D
Nitroethane <sup>7</sup> .....	D	S	III	4m	PV	Restr	7A, C	.236(b), .409, .526, .1002(a), (b), .1003.	I-C
Nitroethane, 1-Nitropropane (each 15% or more) mixture <sup>7</sup> .	D	S	III	4m	PV	Restr	7A	.236(b), .409, .526, .1002 .....	I-C
o-Nitrophenol (molten) .....	B	S/P	II	B/3	PV	Closed	A, C, D	.409, .440, .525, .526, .908(a), (b), .1020.	NA
1- or 2-Nitropropane <sup>7</sup> .....	D	S	III	4m	PV	Restr	7A, C	.409, .526 .....	I-C
Nitropropane (60%), Nitroethane (40%) mixture <sup>7</sup> .	D	S	III	4m	PV	Restr	7A, C	.236(b), .409, .526 .....	I-C
Nitropropane (20%), Nitroethane (80%) mixture <sup>7</sup> .	D	S	III	4m	PV	Restr	7A, C	.236(b), .409, .526, .1002(a), (b), .1003.	I-C
(o-, p-) Nitrotoluene .....	B	S/P	II	B/3	PV	Closed	A, B	.316, .408, .440, .525, .526, .908(b), .1020.	I-D
Nonane (all isomers), see Alkanes(C6–C9).	C	P	III	4m	PV	Restr	B, C	.409 .....	I-D
Nonene (all isomers) .....	B	P	III	4m	PV	Restr	A	.409 .....	I-D
Nonyl acetate .....	C	P	III	NR	Open	Open	A	.409 .....	I-D
Nonyl alcohol (all isomers)	C	P	III	NR	Open	Open	A	None .....	I-D
Nonyl phenol .....	A	P	II	NR	Open	Open	A	.409 .....	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Nonyl phenol poly(4+)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .488 <sup>1</sup> , .908(a), (b) .....	I-D
Noxious liquid, N.F., (1) n.o.s. ("trade name" contains "principal components") ST 1, Cat A.	A	P	I	NR	Open	Open	A	.408 .....	NA
Noxious liquid, F., (2) n.o.s. ("trade name" contains "principal components") ST 1, Cat A.	A	P	I	4m	PV	Restr	A	.408 .....	NA
Noxious liquid, N.F., (3) n.o.s. ("trade name" contains "principal components") ST 2, Cat A.	A	P	II	NR	Open	Open	A	.409 .....	NA
Noxious liquid, F., (4) n.o.s. ("trade name" contains "principal components") ST 2, Cat A.	A	P	II	4m	PV	Restr	A	.409 .....	NA
Noxious liquid, N.F., (5) n.o.s. ("trade name" contains "principal components") ST 2, Cat B.	B	P	II	NR	Open	Open	A	.409; (.440, .908) <sup>1</sup> .....	NA
Noxious liquid, N.F., (6) n.o.s. ("trade name" contains "principal components") ST 2, Cat B, mp. equal to or greater than 15 deg. C.	B	P	II	NR	Open	Open	A	.409, .440, .488, .908(b); (.908(a)) <sup>1</sup> .....	NA
Noxious liquid, F., (7) n.o.s. ("trade name" contains "principal components") ST 2, Cat B.	B	P	II	4m	PV	Restr	A	.409; (.440, .908) <sup>1</sup> .....	NA
Noxious liquid, F., (8) n.o.s. ("trade name" contains "principal components") ST 2, Cat B, mp. equal to or greater than 15 deg. C.	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(b); (.908(a)) <sup>1</sup> .....	NA
Noxious liquid, N.F., (9) n.o.s. ("trade name" contains "principal components") ST 3, Cat A.	A	P	III	NR	Open	Open	A	.409 .....	NA
Noxious liquid, F., (10) n.o.s. ("trade name" contains "principal components") ST 3, Cat A.	A	P	III	4m	PV	Restr	A	.409 .....	NA
Noxious liquid, N.F., (11) n.o.s. ("trade name" contains "principal components") ST 3, Cat B.	B	P	III	NR	Open	Open	A	(.409, .440, .908) <sup>1</sup> .....	NA
Noxious liquid, N.F., (12) n.o.s. ("trade name" contains "principal components") ST 3, Cat B, mp. equal to or greater than 15 deg. C.	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(b); (.908(a)) <sup>1</sup> .....	NA
Noxious liquid, F., (13) n.o.s. ("trade name" contains "principal components") ST 3, Cat B.	B	P	III	4m	PV	Restr	A	.409; (.440, .908) <sup>1</sup> .....	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Noxious liquid, F., (14) n.o.s. ("trade name" contains "principal components") ST 3, Cat B, mp. equal to or greater than 15 deg. C.	B	P	III	4m	PV	Restr	A	.409, .440, .488, .908(b); (.908(a)) <sup>1</sup>	NA
Noxious liquid, N.F., (15) n.o.s. ("trade name" contains "principal components") ST 3, Cat C.	C	P	III	NR	Open	Open	A	(.440, .903, .908) <sup>1</sup>	NA
Noxious liquid, F., (16) n.o.s. ("trade name" contains "principal components") ST 3, Cat C.	C	P	III	4m	PV	Restr	A	(.440, .903, .908) <sup>1</sup>	NA
Octane (all isomers), see Alkanes(C6–C9).	C	P	III	4m	PV	Restr	A	.409	I-D
Octanol (all isomers)	C	P	III	NR	Open	Open	A	None	I-D
Octene (all isomers)	B	P	III	4m	PV	Restr	A	.409	I-D
Octyl acetate	C	P	III	NR	Open	Open	A	None	I-D
Octyl aldehydes	B	P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-C
Octyl nitrates (all isomers), see Alkyl(C7–C9) nitrates.									
Olefin mixtures (C5–C7)	C	P	III	4m	PV	Restr	A	.409	I-D
Olefin mixtures (C5–C15)	B	P	III	4m	PV	Restr	A	.409	I-D
alpha-Olefins (C6–C18) mixtures.	B	P	III	4m	PV	Restr	A	.409, .440, .908(a), (b)	I-D
Oleum	C	S/P	II	B/3	PV	Closed	NSR	.316, .408, .440, .526, .527, .554, .555, .556, .602, .908(a), .933, .1000, .1045, .1052.	I-B
Oleylamine	A	S/P	II	4m	PV	Restr	A	.409, .526	NA
Palm kernel acid oil	C	P	III	NR	Open	Open	A, B	.440, .903, .908(a), (b)	NA
Paraldehyde	C	S/P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-C
Paraldehyde-ammonia reaction product.	C	S/P	II	B/3	PV	Closed	A	.236 (a), (b), (c), (g), .525(a), (c), (e), .408, .526, .1020.	NA
Pentachloroethane	B	S/P	II	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	NA
1,3-Pentadiene	C	S/P	III	4m	PV	Restr	A, B	.409, .526, .912(a)(1), .1002, .1004	I-D
Pentane (all isomers)	C	P	III	4m	PV	Restr	A	.372, .409	I-D
n-Pentanoic acid (64%), 2-Methyl butyric acid (36%) mixture.	D	S	II	B/3	Open	Closed	A, D	.238(a), .408, .525(a), (c), (e), .554, .933, .1020.	I-D
Pentene (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
n-Pentyl propionate	C	P	III	4m	PV	Restr	A	.409	I-D
Perchloroethylene	B	S/P	III	B/3	PV	Restr	NSR	.409, .526	NA
Phenol (or solutions with 5% or more Phenol).	C	S/P	II	B/3	PV	Closed	A	.408, .440, .488, .525, .526, .908(a), (b), .933, .1020.	I-D
1-Phenyl-1-xylyl ethane	C	P	III	NR	Open	Open	A, B	None	NA
Phosphate esters, alkyl(C12–C14)amine.	B	P	III	4m	PV	Restr	A	.409	NA
Phosphoric acid	D	S	III	NR	Open	Open	NSR	.554, .555, .558, .1045, .1052, .933	I-B
Phthalic anhydride (molten)	C	S/P	III	4m	PV	Restr	A, D	.440, .908(a), (b)	I-D
Pinene, see the alpha- or beta- isomers.									
alpha-Pinene	A	P	III	4m	PV	Restr	A	.409	I-D
beta-Pinene	B	P	III	4m	PV	Restr	A	.409	I-D
Pine oil	C	P	III	NR	Open	Open	A	.440, .908(a)	I-D
Polyalkyl(C18–C22) acrylate in Xylene.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	NA
Polyalkylene oxide polyol	C	P	III	NR	Open	Open	A	.440, .903, .908(a)	NA
Poly(2+)cyclic aromatics	A	P	II	4m	PV	Restr	A, D	.409	I-D
Polyethylene polyamines	C	S/P	III	NR	Open	Open	A	.236(b), (c), .400, .440, .908(b)	NA
Polyferric sulfate solution	C	S/P	III	NR	Open	Open	NSR	.238(d)	NA
Polyisobutenamine in aliphatic (C10–C14) solvent.	C	P	III	NR	Open	Open	A	.903	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Polymethylene polyphenyl isocyanate <sup>6</sup> .	D	S	II	B/3	PV	Closed	A, C <sup>6</sup> , D	.236(a), (b), .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
Polyolefinamine (C28–C250).	C	P	III	NR	Open	Open	A	None	NA
Polyolefinamine in alkyl(C2–C4)benzenes.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	I-D
Polyolefin phosphor-sulfide, barium derivative (C28–C250).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) <sup>1</sup>	NA
Poly(tetramethylene ether) glycols (mw 950-1050).	B	P	III	NR	Open	Open	A, D	.409, .440, .488, .908(a), (b)	NA
Potassium hydroxide solution, see Caustic potash solution									
Potassium oleate	C	P	III	NR	Open	Open	A	.409	NA
Potassium thiosulfate (50% or less).	C	P	III	NR	Open	Open	NSR	None	NA
iso-Propanolamine	C	S/P	III	NR	Open	Open	A	.236(b), (c), .440, .526, .903, .908(b).	I-D
n-Propanolamine	C	S/P	III	NR	Open	Open	A, D	.236(b), (c), .440, .526, .908(b)	NA
Propionaldehyde	C	S/P	III	4m	PV	Restr	A	.316, .409, .526, .527	I-C
Propionic acid	D	S	III	4m	PV	Restr	A	.238(a), .409, .527, .554, .933	I-D
Propionic anhydride	C	S/P	III	4m	PV	Restr	A	.238(a), .526	I-D
Propionitrile	C	S/P	II	B/3	PV	Closed	A, D	.252, .316, .336, .408, .525, .526, .527, .1020.	I-D
iso-Propylamine	C	S/P	II	B/3	PV	Closed	C, D	.236(b), (c), .372, .408, .440, .525, .526, .527, .1020.	I-D
iso-Propylamine solution (70% or less).	C	S/P	II	B/3	PV	Closed	C, D	.236(a), (b), (c), (g), .408, .440, .525, .526, .527, .1020.	I-D
n-Propylamine	C	S/P	II	B/3	PV	Closed	A, C, D	.236(b), (c), .408, .500, .525, .526, .527, .1020.	I-D
<i>n</i> -Propylbenzene, see Propylbenzene (all isomers).									
Propylbenzene (all isomers).	A	P	III	4m	PV	Restr	A	.409	I-D
n-Propyl chloride	D	S	III	4m	PV	Restr	A, B	.409	I-D
iso-Propylcyclohexane	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	I-D
Propylene dimer	C	P	III	4m	PV	Restr	A	.409	NA
Propylene oxide	C	S/P	II	B/3	PV	Closed	A, C	.372, .408, .440, .500, .526, .530, .1010, .1011.	I-B
Propylene tetramer	B	P	III	4m	PV	Restr	A	.409	I-D
Propylene trimer	B	P	III	4m	PV	Restr	A	.409	I-D
iso-Propyl ether	D	S	III	4m	PV	Restr	A	.409, .500, .515, .912(a)(1)	I-D
Pyridine	D	S	III	4m	PV	Restr	A	.236(b), .409	I-D
Rosin, see Rosin oil.									
Rosin oil	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	I-D
Rosin soap (disproportionated) solution.	B	P	III	NR	Open	Open	A	.409	NA
Sodium alkyl (C14-C17) sulfonates 60-65% solution, see Alkane (C14-C17) sulfonic acid, sodium salt solution.									
Sodium aluminate solution	D	S	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .933	NA
Sodium borohydride (15% or less), Sodium hydroxide solution.	C	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .440, .908(a), .933.	NA
Sodium chlorate solution (50% or less).	III	S	III	NR	Open	Open	NSR	.409, .933, .1065	NA
Sodium dichromate solution (70% or less).	C	S/P	II	B/3	Open	Closed	NSR	.236(b), (c), .408, .525, .933, .1020	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
<i>Sodium dimethyl naphthalene sulfonate solution, see Dimethyl naphthalene sulfonic acid, sodium salt solution.</i>									
Sodium hydrogen sulfide (6% or less), Sodium carbonate (3% or less) solution.	B	P	III	NR	Open	Open	NSR	.409 .....	NA
Sodium hydrogen sulfite solution (45% or less).	D	S	III	NR	Open	Open	NSR	None .....	NA
Sodium hydrosulfide solution (45% or less).	B	S/P	III	4m	PV	Restr	NSR	.409, .440, .526, .908(b), .933 .....	NA
Sodium hydrosulfide, Ammonium sulfide solution.	B	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .316, .372, .408, .525, .526, .527, .933, .1002, .1020.	NA
Sodium hydroxide solution, <i>see</i> Caustic soda solution									
Sodium hypochlorite solution (15% or less).	C	S/P	III	4m	PV	Restr	NSR	.236(a), (b), .933 .....	NA
Sodium long chain alkyl salicylate (C13+).	[C]	P	III	NR	Open	Open	A	(.440, .903, .908(a)) <sup>1</sup> .....	NA
Sodium-2-mercaptobenzothiazol solution.	B	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409, .440, .908(b), .933.	NA
<i>Sodium N-methyldithiocarbamate solution, see Metam sodium solution.</i>									
<i>Sodium naphthalene sulfonate solution (40% or less), see Naphthalene sulfonic acid, sodium salt solution (40% or less).</i>									
<i>Sodium naphthenate solution, see Naphthenic acid, sodium salt solution.</i>									
Sodium nitrite solution .....	B	S/P	II	NR	Open	Open	NSR	.408, .525(a), (c), (d), (e), .1020 .....	NA
Sodium petroleum sulfonate.	B	S/P	II	NR	Open	Open	A	.409, .440, .908(a) .....	NA
Sodium silicate solution .....	C	P	III	NR	Open	Open	A	None .....	NA
Sodium sulfide solution (15% or less).	B	S/P	III	B/3	PV	Closed	NSR	.236(a), (b), .409, .440, .526, .908(b).	NA
Sodium sulfite solution (25% or less).	C	P	III	NR	Open	Open	NSR	.409, .440, .908(b) .....	NA
Sodium tartrates, Sodium succinates solution.	D	S	III	NR	Open	Open	A, B	.238(e) .....	NA
Sodium thiocyanate solution (56% or less).	B	P	III	NR	Open	Open	NSR	.238(a), .409 .....	NA
Styrene monomer .....	B	S/P	III	4m	PV	Restr	A, B	.236(b), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
Sulfohydrocarbon, long chain (C18+) alkylamine mixture.	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) <sup>1</sup> .....	NA
Sulfur (molten) .....	III	S	III	NR	Open	Open	NSR	.252, .440, .526, .545 .....	I-C
Sulfuric acid .....	C	S/P	III	NR	Open	Open	NSR	.440, .554, .555, .556, .602, .908(a), (b), .933, .1000, .1045, .1046, .1052.	I-B
Tall oil ( <i>crude and distilled</i> )	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b) .....	NA
Tall oil, fatty acid ( <i>resin acids less than 20%</i> ).	C	P	III	NR	Open	Open	A	.440, .908(a), (b) .....	NA
Tall oil fatty acid, barium salt.	B	S/P	III	NR	Open	Open	A	.409, .440, .908(a) .....	NA
Tall oil soap (disproportionated) solution.	B	P	III	NR	Open	Open	A	.409, .440, .908(a), (b) .....	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
1,1,2,2-Tetrachloroethane	B	S/P	III	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	NA
Tetraethylenepentamine <sup>3</sup>	D	S	III	NR	Open	Open	A	.236(b), (c), (g)	I-C
Tetrahydrofuran	D	S	III	4m	PV	Restr	A, D	.409, .526, .912(a)(2), .1004	I-C
Tetrahydronaphthalene	C	P	III	NR	Open	Open	A	None	I-D
Tetramethylbenzene (all isomers).	A	P	III	NR	Open	Open	A	None	I-D
Toluene	C	P	III	4m	PV	Restr	A	.409	I-D
Toluenediamine	C	S/P	II	B/3	PV	Closed	A, B, C, D	.236(a), (b), (c), (g), .316, .408, .440, .525, .526, .527, .908(a), (b), .933, .1020.	NA
Toluene diisocyanate <sup>6</sup>	C	S/P	II	4m	PV	Closed	A, C <sup>6</sup> , D	.236(b), .316, .408, .440, .500, .501, .525, .526, .527, .602, .908(b), .1000, .1020.	I-D
o-Toluidine	C	S/P	II	B/3	PV	Closed	A, C	.316, .408, .525, .526, .933, .1020	I-D
Tributyl phosphate	B	P	III	NR	Open	Open	A	.409	I-D
1,2,3-Trichlorobenzene (molten).	A	S/P	I	B/3	PV	Closed	A, C, D	.316, .408, .440, .526, .908(b), .933	I-D
1,2,4-Trichlorobenzene	B	S/P	II	4m	PV	Restr	A, B, C,	.409, .440, .526, .908(b),	I-D
1,1,1-Trichloroethane	C	P	III	NR	Open	Open	A	.409	I-D
1,1,2-Trichloroethane	C	S/P	III	B/3	PV	Restr	NSR	.409, .525, .526, .933, .1020	I-D
Trichloroethylene	C	S/P	III	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	I-D
1,2,3-Trichloropropane	C	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .408, .525, .526, .933, .1020	I-D
1,1,2-Trichloro-1,2,2-trifluoroethane.	C	P	III	NR	Open	Open	NSR	None	NA
Tricresyl phosphate (less than 1% of the ortho isomer).	A	P	II	NR	Open	Open	A	.409	I-D
Tricresyl phosphate (1% or more of the ortho isomer).	A	S/P	I	4m	PV	Closed	A, B	.408, .525(a), (c), (d), (e), .1020	I-D
Tridecanoic acid	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	NA
Triethanolamine	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g)	I-C
Triethylamine	C	S/P	II	B/3	PV	Restr	A, B, C	.236(b), (c), .409, .525, .526, .527, .1020.	I-C
Triethylbenzene	A	P	II	NR	Open	Open	A	.409	I-D
Triethylene glycol di-(2-ethylbutyrate).	[C]	P	III	NR	Open	Open	A	None	I-C
Triethylenetetramine	D	S	III	NR	Open	Open	A	.236(a), (b), (c)	I-C
Triethyl phosphite	B	S/P	III	B/3	PV	Restr	A, B, D	.409, .526	NA
Triisopropylated phenyl phosphates.	A	P	II	NR	Open	Open	A	.409	NA
Trimethylacetic acid	D	S	III	4m	PV	Restr	A, C	.238(a), .266, .554	I-D
Trimethylamine solution (30% or less).	C	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .372, .408, .440, .525, .526, .527, .908(b), .1020.	I-C
Trimethylbenzene (all isomers).	A	P	III	4m	PV	Restr	A	.409	I-D
Trimethylhexamethylenediamine (2,2,4- and 2,4,4-isomers).	D	S	III	NR	Open	Open	A, C	.236(a), (b), (c), (g), .409	NA
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4- isomers) <sup>6</sup> .	B	S/P	II	B/3	PV	Closed	A, C <sup>6</sup>	.316, .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate.	C	P	III	NR	Open	Open	A	None	I-D
Trimethyl phosphite	#	S	III	4m	PV	Restr	A, D	.409, .526, .602, .1000	I-D
1,3,5-Trioxane	D	S	III	4m	PV	Restr	A, D	.409	I-C
Trixylenyl phosphate	A	P	I	NR	Open	Open	A	.408	NA
Trixylyl phosphate, see Trixylenyl phosphate.									
Turpentine	B	P	III	4m	PV	Restr	A	.409	I-D
Undecanoic acid	B	P	III	NR	Open	Open	A	.440, .908(a), (b)	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
1-Undecene .....	B	P	III	NR	Open	Open	A	.409 .....	I-D
1- Undecyl alcohol .....	B	P	III	NR	Open	Open	A	.409, .440, .908(b) .....	I-D
Urea, Ammonium nitrate solution (containing more than 2% NH <sub>3</sub> ).	C	S/P	III	4m	PV	Restr	A	.236(b), .526 .....	I-D
Valeraldehyde (all isomers)	C	S/P	III	4m	PV	Restr	A	.409, .500, .526 .....	I-C
Vinyl acetate .....	C	S/P	III	4m	PV	Restr	A	.409, .912(a)(1), .1002(a), (b), .1004.	I-D
Vinyl ethyl ether .....	C	S/P	II	4m	PV	Closed	A	.236(b), (d), (f), (g), .252, .372, .408, .440, .500, .515, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-C
Vinylidene chloride .....	D	S	II	4m	PV	Restr	B	.236(a), (b), .372, .409, .440, .500, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Vinyl neodecanate .....	B	S/P	III	NR	Open	Open	A, B	.409, .912(a)(1), .1002(a), (b), .1004.	NA
Vinyltoluene .....	A	S/P	III	4m	PV	Restr	A, B, D	.236(a), (b), (c), (g), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
White spirit (low (15–20%) aromatic).	B	P	II	4m	PV	Restr	A	.409 .....	NA
Xylenes <sup>8</sup> ( <i>ortho</i> -, <i>meta</i> -, <i>para</i> -).	C	P	III	4m	PV	Restr	A	.409, .440, .908(b) <sup>8</sup> .....	I-D
Xylenes, Ethylbenzene (10% or more) mixture.	B	P	III	4m	PV	Restr	A	.409 .....	NA
Xylenol .....	B	S/P	III	NR	Open	Open	A, B	.409, .440, .908(a), (b) .....	NA
Zinc alkaryl dithiophosphate (C7–C16).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) <sup>1</sup> .....	NA
Zinc alkyl dithiophosphate (C3–C14).	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) <sup>1</sup> .....	NA

Column Heading Footnotes:

a. The cargo name must be as it appears in this column (see 153.900, 153.907). Words in italics are not part of the cargo name but may be used in addition to the cargo name. When one entry references another entry by use of the word "see", and both names are in roman type, either name may be used as the cargo name (e.g., Diethyl ether, see Ethyl ether). However, the referenced entry is preferred.

The provisions contained in 46 CFR part 197, subpart C, apply to liquid cargoes containing 0.5% or more benzene by volume.

b. This column lists the IMO Annex II Pollution Category.

A, B, C, D—NLS Category of Annex II of MARPOL 73/78.

III—Appendix III of Annex II (non-NLS cargoes) of MARPOL 73/78.

#—No determination of NLS status. For shipping on an oceangoing vessel, see 46 CFR 153.900(c).

[ ]—A NLS category in brackets indicates that the product is provisionally categorized and that further data are necessary to complete the evaluation of its pollution hazards. Until the hazard evaluation is completed, the pollution category assigned is used.

@—The NLS category has been assigned by the U.S. Coast Guard, in absence of one assigned by the IMO. The category is based upon a GESAMP Hazard Profile or by analogy to a closely related product having an NLS assigned.

c. This column lists the hazard(s) of the commodity:

S—The commodity is included because of its safety hazards.

P—The commodity is included because of its pollution hazards.

S/P—The commodity is included because of both its safety and pollution hazards.

d. This column lists the type of containment system the cargo must have (see 153.230 through 153.232).

e. This column lists the height of any vent riser required (see 153.350 and 153.351).

f. This column lists any vent control valve required (see 153.355).

g. This column lists the type of gauging system required (see 153.400 through 153.406).

h. This column lists the type of fire protection system required. Where more than one system is listed, any listed system may be used. A dry chemical system may not be substituted for either type of foam system unless the dry chemical system is listed as an alternative or the substitution is approved by Commandant (G–MSO) (see 153.460). The types are as follows:

A is a foam system for water soluble cargoes (polar solvent foam).

B is a foam system for water insoluble cargoes (non-polar solvent foam).

C is a water spray system.

D is a dry chemical system.

NSR means there is no special requirement applying to fire protection systems.

i. This column lists sections that apply to the cargo in addition to the general requirements of this part. The 153 Part number is omitted.

j. This column lists the electrical hazard class and group used for the cargo when determining requirements for electrical equipment under Subchapter J (Electrical Engineering) of this chapter.

A number of electrical hazard class and group assignments are based upon that which appears in "Classification of Gases, Liquids and Volatile Solids Relative to Explosion-Proof Electrical Equipment", Publication NMAB 353–5, National Academy Press, 1982, when not appearing in NFPA 497M, "Manual for Classification of Gases, Vapors and Dusts for Electrical Equipment in Hazardous (Classified) Locations."

The I-B electrical hazard does not apply to weather deck locations (see 46 CFR Part 111) for inorganic acids: Chlorosulfonic acid; Hydrochloric acid; Nitric acid; Nitric acid (70% or less); Oleum; Phosphoric acid; Sulfuric acid.

Abbreviations used in the Table:

NR—No requirement.

NA—Not applicable.

Abbreviations for Noxious Liquid cargoes:

- N.F.—non-flammable (flash point greater than 60 deg C (140 deg F) closed cup (cc)).
- F.—flammable (flash point less than or equal to 60 deg C (140 deg F) closed cup (cc)).
- n.o.s.—not otherwise specified.
- ST—Ship type.
- Cat—Pollution category.

Footnotes for Specific Cargoes:

1. Special applicability:
  - 153.440 and .908(a) apply to the chemical, and mixtures containing the chemical, with a viscosity of 25 mPa.s at 20 deg C (68 deg F).
  - 153.440 and .908(b) apply to the chemical, and mixtures containing the chemical, with a melting point of 0 deg C (32 deg F) and above.
  - 153.488 applies to the chemical, and mixtures containing the chemical, with a melting point of 15 deg C (59 deg F) and above.
2. Benzene containing cargoes.
  - Applies to mixtures containing no other components with safety hazards and where the pollution category is C or less.
3. Diammonium salt of Zinc ethylenediaminetetraacetic acid solution; Tetraethylenepentamine.
  - Aluminum is a questionable material of construction with this cargo since pitting and corrosion has been reported. The IMO Chemical Code prohibits aluminum as a material of construction for this cargo.
4. 2,4-Dichlorophenol.
  - Some tank pitting has been reported when this cargo is contaminated with water, including moisture in the air. The IMO Chemical Code requires that the vapor space over this cargo be kept dry.
5. Reserved.
6. Diphenylmethane diisocyanate; Hexamethylene diisocyanate; Isophorone diisocyanate; Polymethylene polyphenyl isocyanate; Toluene diisocyanate; Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4- isomers).
  - Water is effective in extinguishing open air fires but will generate hazardous quantities of gas if put on the cargo in enclosed spaces.
7. Maleic anhydride; Nitroethane; Nitroethane, 1-Nitropropane mixtures; 1- or 2-Nitropropane; Nitropropane, Nitroethane mixtures.
  - Dry chemical extinguishers should not be used on fires involving these cargoes since some dry chemicals may react with the cargo and cause an explosion.
8. Xylenes.
  - Special requirement .908(b) only applies to the para- (p-) isomer, and mixtures containing the para-isomer having a melting point of 0 deg C (32 deg F) or more.

**PART 153 TABLE II—[AMENDED]**

20. Amend Table 2 as follows:

a. Change bold-faced type wherever it appears to Roman type; in the column entitled “Cargoes”, remove each bullet “•” that precedes the name of a cargo; and remove the undesignated footnote that reads: “Items with a bullet (•) or in **boldface** are changes since October 1, 1993”.

b. From the column entitled “Cargoes”, remove the words “Dextrose solution” and add, in their place, the words “Dextrose solution, see Glucose solution”, and beside it in the column entitled “Pollution Category”, remove the number “III”.

c. From the column entitled “Cargoes”, remove the words “Lignin sulfonic acid, sodium salt solution” and add, in their place, the words “Lignin sulfonic acid, sodium salt solution, see also Lignin liquor or Sodium lignosulfonate solution”.

d. In the column entitled “Pollution Category”, beside the entry “Drilling brine (containing Calcium, Potassium, or Sodium Salts)”, add the number “III”.

e. From the column entitled “Cargoes”, remove the words “Pentasodium salt of Diethylenetriamine pentaacetic acid solution, see Diethylenetriamine pentaacetic acid, pentasodium salt solution” and add, in their place, the words “Pentasodium salt of Diethylenetriamine pentaacetic acid solution, see Diethylenetriamine

pentaacetic acid, pentasodium salt solution”; and, from beside them in the column entitled “Pollution Category”, remove the number “III”.

f. From the column entitled “Cargoes”, remove the words “Sodium naphthenate solution (free alkali content, 3% or less), see Naphthenic acid, sodium salt solution” and add, in their place, the words “Sodium naphthenate solution (free alkali content, 3% or less), see Naphthenic acid, sodium salt solution”; and, from beside it in the column entitled “Pollution Category”, remove the letter “[A]”.

g. From the column entitled “Cargoes”, remove the words “Tetrasodium salt of Ethylenediaminetetraacetic acid solution, see Ethylenediaminetetraacetic acid, tetrasodium salt solution” and add, in their place, the words “Tetrasodium salt of Ethylenediaminetetraacetic acid solution, see Ethylenediaminetetraacetic acid, tetrasodium salt solution”; and, from beside it in the column entitled “Pollution Category”, remove the letter “D”.

h. From the column entitled “Cargoes”, remove the words “Trisodium salt of N-(Hydroxyethyl)ethylenediaminetriacetic acid solution, see N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution” and add, in their place, the words “Trisodium salt of N-

(Hydroxyethyl)ethylenediamine triacetic acid solution, see N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution”; and, from beside it in the column entitled “Pollution Category”, remove the letter “D”.

21. Amend Table 2 by adding the following new entries in chemically proper alphabetized order:

**TABLE 2—CARGOES NOT REGULATED UNDER SUBCHAPTERS D OR O OF THIS CHAPTER WHEN CARRIED IN BULK ON NON-OCEANGOING BARGES**

Cargoes	Pollution category
* * * * *	
Ammonium thiosulfate solution (60% or less).	C
* * * * *	
Sulfonated polyacrylate solution	III
* * * * *	
Titanium dioxide slurry .....	III
* * * * *	

Dated: August 30, 2000.  
**Joseph J. Angelo,**  
 Director of Standards, Marine Safety and Environmental Protection.  
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