



# Federal Register

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**Thursday,  
June 17, 2010**

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**Part III**

## **Department of Homeland Security**

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**Coast Guard**

**46 CFR Parts 97 and 148**

**Bulk Solid Hazardous Materials:  
Harmonization With the International  
Maritime Solid Bulk Cargoes (IMSBC)  
Code; Proposed Rule**

**DEPARTMENT OF HOMELAND SECURITY****Coast Guard****46 CFR Parts 97 and 148**

[Docket No. USCG–2009–0091]

RIN 1625–AB47

**Bulk Solid Hazardous Materials: Harmonization With the International Maritime Solid Bulk Cargoes (IMSBC) Code**

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** The Coast Guard proposes to harmonize its regulations with International Maritime Organization (IMO) amendments to Chapter VI and Chapter VII to the International Convention for the Safety of Life at Sea, 1974, as amended, (SOLAS) that make the International Maritime Solid Bulk Cargoes (IMSBC) Code mandatory. The amendments require that all vessels subject to SOLAS and carrying bulk solid cargoes other than grain must comply with the IMSBC Code. The Coast Guard proposes to amend its regulations governing the carriage of solid hazardous materials in bulk to allow use of the IMSBC Code as an equivalent form of compliance for all domestic and foreign vessels operating in U.S. navigable waters. Proposed changes to the Coast Guard regulations will also expand the list of solid hazardous materials authorized for bulk transportation by vessel and include special handling procedures based on the IMSBC Code and existing special permits. These proposed changes would reduce the need for the current special permits for the carriage of certain solid hazardous materials in bulk.

**DATES:** Comments and related material must either be submitted to our online docket via <http://www.regulations.gov> on or before July 19, 2010 or reach the Docket Management Facility by that date. Comments sent to the Office of Management and Budget (OMB) on collection of information must reach OMB on or before July 19, 2010.

**ADDRESSES:** You may submit comments identified by docket number USCG–2009–0091 using any one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>.
- *Fax:* 202–493–2251.
- *Mail:* Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey

Avenue, SE., Washington, DC 20590–0001.

• *Hand Delivery:* Same as mail address above, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–366–9329.

To avoid duplication, please use only one of these four methods. See the “Public Participation and Request for Comments” portion of the **SUPPLEMENTARY INFORMATION** section below for instructions on submitting comments.

*Collection of information comments:* If you have comments on the collection of information discussed in section VII.D. of this NPRM, you must also send comments to the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget. To ensure that your comments to OIRA are received on time, the preferred methods are by e-mail to [oira\\_submission@omb.eop.gov](mailto:oira_submission@omb.eop.gov) (include the docket number and “Attention: Desk Officer for Coast Guard, DHS” in the subject line of the email) or fax at 202–395–6566. An alternate, though slower, method is by U.S. mail to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, ATTN: Desk Officer, U.S. Coast Guard.

*Viewing incorporation by reference material:* You may inspect the material proposed for incorporation by reference at room 1214, U.S. Coast Guard Headquarters, 2100 Second Street, SW., Washington, DC 20593, between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–372–1401. Copies of the material are available as indicated in the “Incorporation by Reference” section of this preamble.

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this proposed rule, call or email Richard Bornhorst, Office of Operating and Environmental Standards, Hazardous Materials Standards Division (CG–5223), Coast Guard, telephone 202–372–1426, e-mail [Richard.C.Bornhorst@uscg.mil](mailto:Richard.C.Bornhorst@uscg.mil). If you have questions on viewing or submitting material to the docket, call Renee V. Wright, Program Manager, Docket Operations, telephone 202–366–9826.

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**I. Public Participation and Request for Comments**

We encourage you to participate in this rulemaking by submitting comments and related materials. All comments received will be posted without change to <http://www.regulations.gov> and will include any personal information you have provided.

**A. Submitting Comments**

If you submit a comment, please include the docket number for this rulemaking (USCG–2009–0091), indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation. You may submit your comments and material online or by fax, mail, or hand delivery, but please use only one of these means. We recommend that you include your name and a mailing address, an e-mail address, or a phone number in the body of your document so that we can contact you if we have questions regarding your submission.

To submit your comment online, go to <http://www.regulations.gov>, click on the “submit a comment” box, which will then become highlighted in blue. In the “Document Type” drop-down menu, select “Proposed Rule” and insert “USCG–2009–0091” in the “Keyword” box. Click “Search,” then click on the balloon shape in the “Actions” column. If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by

11 inches, suitable for copying and electronic filing. If you submit comments by mail and would like to know that they reached the Facility, please enclose a stamped, self-addressed postcard or envelope.

We will consider all comments and materials received during the comment period and may change this proposed rule based on your comments.

### B. Viewing Comments and Documents

To view comments, as well as documents mentioned in this preamble as being available in the docket, go to <http://www.regulations.gov>, click on the "read comments" box, which will then become highlighted in blue. In the "Keyword" box, insert "USCG-2009-0091" and click "Search." Click on "Open Docket Folder" in the "Actions" column. If you do not have access to the internet, you may view the docket online by visiting the Docket Management Facility in Room W12-140 on the ground floor of the Department of Transportation West Building, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. We have an agreement with the Department of Transportation to use the Document Management Facility.

### C. Privacy Act

You may search the electronic form of comments received into any of our dockets by the name of the individual submitting the comments (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review a Privacy Act notice regarding our public dockets in the January 17, 2008, issue of the **Federal Register** (73 FR 3316).

### D. Public Meeting

We do not now plan to hold a public meeting. You may submit a request for a public meeting to the docket using one of the methods specified under **ADDRESSES**. In your request, explain why you believe a public meeting would be beneficial. If we determine that one would aid this rulemaking, we will hold a public meeting at a time and place announced by a later notice in the **Federal Register**.

## II. Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists  
ANPRM Advance Notice of Proposed Rulemaking  
BC Code Code of Safe Practice for Solid Bulk Cargoes  
BCSN Bulk Cargo Shipping Name  
CDC Certain Dangerous Cargoes  
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CFR Code of Federal Regulations  
COTP Captain of the Port  
CTAC Chemical Transportation Advisory Committee  
DCM Dangerous Cargo Manifest  
DHS Department of Homeland Security  
DRI Direct Reduced Iron  
EPA Environmental Protection Agency  
FR **Federal Register**  
HMR Hazardous Materials Regulations, 49 CFR Parts 171-180  
IAEA International Atomic Energy Agency  
IMDG Code International Maritime Dangerous Goods Code  
IMO International Maritime Organization  
IMSC Code International Maritime Solid Bulk Cargoes Code  
LFL lower flammability limit  
LSA Low Specific Activity  
MARPOL 73/78 International Convention for the Prevention of Pollution from Ships  
MISLE Marine Information for Safety and Law Enforcement  
MHB Materials Hazardous only in Bulk  
MSDS Material Safety Data Sheet  
NCB National Cargo Bureau  
NEPA National Environmental Policy Act of 1969  
N.O.S. Not Otherwise Specified  
NPRM notice of proposed rulemaking  
NTTAA National Technology Transfer and Advancement Act  
NVIC Navigation and Vessel Inspection Circular  
OIRA Office of Information and Regulatory Affairs  
OMB Office of Management and Budget  
ORM Other Regulated Material  
OSHA Occupational Safety and Health Administration  
PDM potentially dangerous material  
PHMSA Pipeline and Hazardous Materials Safety Administration (U.S. Department of Transportation)  
RQ Reportable Quantity  
SCBA Self-contained breathing apparatus  
SCO-I Surface Contaminated Object (group I)  
SOLAS International Convention for the Safety of Life at Sea, 1974, as amended  
TLV threshold limit value  
TML Transportable Moisture Limit  
UN United Nations  
U.S.C. United States Code

## III. Background

### A. Summary of Existing Regulations

The Coast Guard regulations governing the carriage of solid hazardous materials in bulk are found in 46 CFR parts 97 and 148. Part 148 prescribes regulations for the transport of solid hazardous materials in bulk by vessel on U.S. navigable waters. Subpart 148.01 includes information on applicability, special permits, and certification. This subpart also includes a list of permitted solid cargoes that may be transported without special permit from the Coast Guard; the list was last revised in 1984 (49 FR 16794). The list does not cover 30 additional solid cargoes that are now shipped in bulk by vessel and that require special handling

procedures to ensure safety in transportation. The Coast Guard issues special permits specifying conditions under which it allows transport of these bulk solid cargoes by vessel.

Subpart 148.02 includes vessel requirements for shipping papers, dangerous cargo manifests (DCMs), and reporting of incidents. Subparts 148.03 and 148.04 include minimum transportation requirements for all bulk solid cargoes subject to Part 148, and special additional requirements for certain material. The special additional requirements are applied to solid cargoes permitted to be carried in bulk by vessel in accordance with Subpart 148.01.

### B. Regulatory History

This rulemaking is based on a previous rulemaking (CGD 87-069), which the Coast Guard closed in 1995. On April 28, 1989, the Coast Guard published an advance notice of proposed rulemaking (ANPRM) titled "Marine Transport of Bulk Solid Hazardous Materials" in the **Federal Register** (54 FR 18308). During the 60-day comment period, the Coast Guard received 16 comment letters on the ANPRM, which we considered in developing a notice of proposed rulemaking (NPRM). The comments did not request a public meeting, and we did not hold one.

On April 12, 1994, the Coast Guard published an NPRM titled "Carriage of Bulk Solid Materials Requiring Special Handling" in the **Federal Register** (59 FR 17418) with a 90-day comment period. On August 5, 1994, we extended the comment period for 30 days (59 FR 40004). The 1994 NPRM addressed comments received on the ANPRM. The NPRM also included a provision regarding the carriage of coal (proposed in the 1994 NPRM as § 148.240), which was based on a report by the Chemical Transportation Advisory Committee (CTAC) Subcommittee on Coal Transportation. That CTAC report is discussed in the 1994 NPRM at 59 FR 17420. In response to the 1994 NPRM, the Coast Guard received 65 letters and communications containing more than 200 comments. No public meeting was requested, and we did not hold one.

On April 13, 1995, the Coast Guard published a notice of termination in the **Federal Register** (60 FR 18793). At that time, we closed the rulemaking to focus resources on other matters. We resolved those matters and we are now proceeding with the rulemaking. A copy of the 1994 NPRM and the 1995 Termination Notice have been placed in the public docket for reference.

In 2008 and 2009, the CTAC Subcommittee on Solid Bulk Cargoes held several meetings regarding the IMSBC Code and specific requirements for the carriage of all bulk solid cargoes by vessel. Industry provided extensive recommendations during these public meetings, which the Coast Guard considered and incorporated when developing this proposed rule. The meetings occurred on April 23, 2008 (73 FR 17369), September 9 and 10, 2008 (73 FR 47202), April 21 and 22, 2009, and August 12, 2009 (74 FR 39090). The rulemaking docket (USCG-2009-0091) contains minutes of these public meetings as well as the subcommittee's final report. The Coast Guard used CTAC's report in preparing this NPRM.

At the time the Coast Guard published the 1994 NPRM, the international standard for the marine transport of solid materials in bulk was the Code of Safe Practice for Solid Bulk Cargoes (BC Code). Since the 1994 NPRM, the IMO has updated the BC Code periodically and renamed it the IMSBC Code. Therefore, this proposed rule is similar, but not identical, to that proposed in the 1994 NPRM. The Coast Guard encourages members of the public to comment on this NPRM, even if they may have submitted a similar comment in the 1994 rulemaking.

The period for comment on this NPRM is 30 days. We believe that a 30-day comment period is adequate in light of the long history of this rulemaking and the multiple opportunities for comment. As described in detail above, the public has commented on an ANPRM as well as an NPRM very similar to the rule proposed in this document, and at four public meetings in the last 2 years. In addition, the Coast Guard participated in the development of the IMSBC Code, and held public meetings prior to each meeting with the IMO to give shipping and cargo interests the opportunity to comment on IMO activities (*see, e.g.*, 74 FR 40632, 73 FR 51876, and 72 FR 44213). For these reasons, we believe that a comment period of 30 days is appropriate.

### *C. Changes to International Regulations That Led to This Rulemaking*

The carriage of hazardous materials in international maritime commerce is now governed by Chapter VII of the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS). In 1990 and 1991, the IMO amended Chapter VI of SOLAS, which formerly applied only to grain cargoes, to include all bulk solid cargoes. The amended Chapter VI of SOLAS requires that the master receive written cargo information, that the vessel carry

oxygen analysis and gas detection equipment on board when the cargoes to be carried are likely to emit toxic or flammable gases, and that the master possess information regarding the ship's stability and the distribution of cargo after loading.

On January 1, 1994, these amendments became binding for all nations signatory to SOLAS, including the United States. In December, 2008, IMO further amended SOLAS Chapter VI and Chapter VII, to require compliance with the relevant provisions of the IMSBC Code for the carriage of bulk solid cargoes other than grain. This amendment will become binding for all nations signatory to the SOLAS Convention on January 1, 2011.

The IMSBC Code, formerly known as the BC Code, is the international standard for the marine transport of solid materials in bulk. The IMO first issued it in 1965 and has amended it several times since, most recently in 2008. The IMSBC Code provides standards for shippers, vessel operators, and masters to ensure the safe handling and carriage of bulk solid cargoes. Implementation of the IMSBC Code will not become mandatory until January 1, 2011, but several countries have already adopted the Code, in whole or in part, as national regulation. Countries that are party to SOLAS will require compliance with the IMSBC Code for all bulk solid shipments occurring in their jurisdiction. Several bulk solid cargoes covered by the IMSBC Code are also regulated by the Coast Guard under 46 CFR part 148, under either the list of permitted cargoes or the terms of a special permit.

The Secretary of Homeland Security delegated to the Coast Guard the authority necessary to conduct this rulemaking, including the authority to carry out the functions and exercise the authorities in 46 U.S.C. 3306 and 5111, and to carry out the functions of 46 U.S.C. 3306(a)(5) and 49 U.S.C. 5101 *et seq.* relating to the regulation of bulk transportation of hazardous materials loaded or carried on board a vessel without benefit of containers or labels. Under these and other authorities, the Coast Guard proposes in this NPRM regulations that would allow the use of the IMSBC Code as an equivalent form of compliance with 46 CFR part 148 for international shipments originating or concluding in the United States, subject to conditions and limitations.

### **IV. Discussion of Comments on the 1994 Notice of Proposed Rulemaking**

In response to the April 1994 NPRM, the Coast Guard received 65 letters and communications containing more than

200 comments. Those commenting included shippers, carriers, terminal operators, marine surveyors, trade associations, private individuals, and the Canadian Coast Guard. No public meeting was requested, and we did not hold one.

In this section, we discuss the comments received on the 1994 NPRM, including, where appropriate, instances in which comments led to changes between the 1994 NPRM and this NPRM. In many cases, we no longer have the original comment letters submitted in 1994; instead, we based our discussion of those comments on summaries created in 1994, which we have made available in the docket. Following the discussion of the public comments, we summarize additional changes made to this proposed rule as the result of actions by the Coast Guard, the IMO, and the Pipeline and Hazardous Materials Safety Administration (PHMSA) since publication of the 1994 NPRM.

#### *A. General Comments*

Two comments objected to the rulemaking in general, stating that the regulations are burdensome and unnecessary.

We have regulated shipment of bulk solid hazardous materials for more than 30 years. All of the materials previously regulated and those to be regulated under this rulemaking have been determined through experience and/or scientific investigation to have characteristics that could endanger human life or harm the marine environment. Before participating in any action by IMO to develop the IMSBC Code, the Coast Guard sought advice from the affected segments of American industry. The coal industry is a particularly good example. A special working group from American coal and marine transportation interests participated in the development of the international requirements. The adoption of amendments to Chapter VI and Chapter VII of SOLAS require that all vessels subject to SOLAS and carrying bulk solid cargoes other than grain must comply with the IMSBC Code. It is necessary for the United States to update its regulations to harmonize with SOLAS requirements. Allowing for the use of the IMSBC Code as an equivalent form of compliance with 46 CFR part 148, and reducing the number of special permits requested and issued, will reduce some burden on both the Coast Guard and the shipper. The United States has been, and expects to continue being, a leader in international maritime safety.

One comment noted that the Coast Guard was regulating in an area where each circumstance is different and calls for different measures. This comment recommended that the Coast Guard require companies conducting potentially risky operations to conduct a systems analysis similar to the process hazards analysis now required by both the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA).

We determined that the comment's recommendation transcends the scope of the present rulemaking. None of the materials regulated under the former rules or proposed for regulating by this NPRM have a history of catastrophic events that would put an entire community at risk. Only a few are environmentally hazardous substances of significance. The issue of systems analysis as proposed by the comment would be better addressed under a comprehensive review of the Coast Guard's port safety regulations.

Ten comments proposed that the rules in Part 148 should not apply to unmanned barges in domestic rivers or coastwise service. We agree in part. We revised proposed § 148.1 to exclude unmanned barges transporting potentially dangerous materials (PDM), such as coal and wood chips, from this part except when such a barge is on an international voyage. PDM materials have characteristics of self-heating, flammable/toxic gas emission, or oxygen depletion. These materials pose little danger when transported in open hopper barges. This part would continue to apply to all unmanned barges transporting bulk materials meeting the hazardous class definitions in 49 CFR Chapter I, Subchapter C; for example, ammonium nitrate fertilizer and ferrosilicon. The term PDM is functionally equivalent to term "material hazardous only in bulk" (MHB), which is used in the IMSBC Code.

#### B. Comments Relating to Specific Provisions

1. *Section 97.12-1.* Four comments found the applicability statement confusing and the applicability of Subpart 97.12 to foreign flag vessels and barges unclear.

This section has been deleted from the proposed rule. The vessel applicability rules from Part 90 apply.

2. *Section 97.12-3.* One comment remarked that not all vessels subject to the rules would have masters.

We determined that no change is necessary. Unmanned barges are exempt

from Subpart 97.12 and all other vessels have masters.

#### 3. *Section 148.3.*

a. *Adjacent space.* Two comments questioned the definition of "adjacent space." One asked whether an adjacent space included penetrations, such as cable runs and pipes, in a bulkhead separating a space from a cargo hold, if those penetrations were gas-tight. The other stated that spaces having a high rate of air exchange that negates the potential for the accumulation of toxic or flammable gases should not be considered adjacent spaces.

To the first comment, the Coast Guard explains that if a cable or pipe passes through the common bulkhead or deck in a stuffing tube or packing gland, the space is considered an adjacent space. If a pipe is welded where it passes through the common bulkhead or deck, it is not a penetration for the purposes of this definition.

To the second comment, we point out that the definition of adjacent space relates only to the location of a space in relation to a cargo hold containing bulk solid materials requiring special handling. The atmospheric conditions in the space are not addressed in the definition. Ventilation of adjacent spaces is addressed for specified cargoes.

b. *Hot-molded briquettes.* One comment pointed out that the definition of "hot-molded briquettes" is not consistent with the BC Code (now replaced by the IMSBC Code).

The IMSBC Code defines hot molded direct reduced iron (DRI) as briquettes molded at a temperature of 650 °C or higher that have a density of 5.0 g/cm<sup>3</sup> or greater. The 1994 NPRM had stated that DRI briquettes were either molded at a temperature of 650 °C or higher or had a density of 5.0 g/cm<sup>3</sup> or greater. In this proposed rule, we have revised the proposed definition to match the IMSBC Code.

c. *Surface ventilation.* One comment asked if the definition of "surface ventilation" included both active (fan-induced) and passive (hatch cover vents) ventilation.

The answer is yes. In this proposed rule, we have expanded the definition accordingly.

4. *Section 148.5.* One comment supported acceptance of alternative procedures set out in § 148.5.

5. *Section 148.8.* One comment proposed that Section 4 of the BC Code (now IMSBC Code) be incorporated by reference. The section deals with assessing the acceptability of consignments for safe shipment.

Section 4 of the IMSBC Code contains provisions for information to be given to

the master prior to loading, and retained on board during carriage. This section of the IMSBC Code is incorporated by reference for international shipments under § 148.55 of the proposed rule. For domestic shipments, equivalent measures are contained in §§ 148.60 and 148.70.

#### 6. *Section 148.10.*

a. One comment found the proposed rules "grossly inadequate" in how they protect merchant mariners from exposure to hazardous substances. Commenting on footnotes 7, 8, 10, 12, and 15 of proposed Table 148.10, this comment recommended that the Coast Guard either adopt OSHA standards for personal protective equipment or develop its own equivalent standards.

We recognize that this regulation does not contain all the requirements necessary for a comprehensive health and safety program. In our Navigation and Vessel Inspection Circular (NVIC) 3-92 of February 24, 1992, however, we provide the marine industry with guidance for such a program.

In this proposed rule, we have retained requirements for the most important health and safety issues related to the transportation of materials regulated in Part 148. These include general requirements to treat all cargo holds as confined spaces, and specific requirements that are deemed necessary due to unique hazards of certain bulk solid materials. In this proposed rule, a new section, § 148.86, containing requirements for confined space entry has replaced the "special requirements" proposed in §§ 148.425 and 148.430 in the 1994 NPRM § 1. Also, we have added a definition of "confined space" to § 148.3.

b. One comment suggested that an entry for "ammonium nitrate, UN 1942" be added to Table 148.10.

We agree and we have adjusted this proposed rule accordingly. The footnotes and special requirements in the new entry would be the same as for ammonium nitrate fertilizer, UN 2067.

c. Four comments opposed the classification of coal as PDM and/or requested that the transport of coal be removed from the rulemaking.

We did not adopt this request. The IMSBC Code provisions for transport of coal are the result of a U.S. initiative developed with the knowledge, assistance, and concurrence of the U.S. coal industry. Where the 1994 rulemaking was not in harmony with the IMSBC Code, we have revised this proposed rule accordingly. The burden on the coal industry would be lessened by exempting domestic barge shipments of PDM, as is provided by this rulemaking.

d. Concerning the list of sections containing special requirements for coal, one comment observed that §§ 148.15, 148.80, 148.90, 148.100, 148.110, 148.115, and 148.120 also apply to coal.

Although this is generally true, § 148.15 does not apply to coal; therefore, no change to Table 148.10 is necessary to make reference to this section. The other sections cited by the comment contain general requirements that apply to all commodities listed in the table, and are not specific to coal.

e. One comment questioned the applicability to coal of footnote 24 of proposed Table 148.10, cargoes subject to liquefaction, stating that liquefaction cannot occur with coal.

Based on the IMSBC Code and other information available to the Coast Guard, we believe liquefaction can indeed occur with coal if the coal is in a finely divided form. In order to clarify this, proposed § 148.450, "Cargoes subject to liquefaction," states that it does not apply to cargoes of coal that have an average particle size of 10 mm (.394 in.) or greater. The average particle size is based on the definition of "fine-grained materials" in Appendix 2 of the IMSBC Code.

f. One comment requested that footnote 11, which indicates that petroleum coke is susceptible to spontaneous heating and ignition, be removed from the entry for petroleum coke in Table 148.10. The comment states that this footnote is not appropriate.

We found that the IMSBC Code identifies spontaneous heating and ignition as a characteristic of petroleum coke, and we have left this as a hazardous or potentially dangerous description for petroleum coke.

g. One comment opposed classification of sawdust and wood chips as PDM.

We disagree. The Coast Guard's Bulk Solid Cargoes regulations have listed sawdust as a regulated material since before 1976. Under this proposed rule, we would regulate sawdust as PDM when carried by cargo vessel; it is currently regulated as an Other Regulated Material—Class C (ORM-C). However, the proposed rule does not apply to domestic barge shipments. The principal hazard associated with these materials, sawdust and wood chips, is oxygen depletion in confined spaces. Since these materials are usually transported domestically in open hopper barges, oxygen depletion is not a significant hazard.

h. One comment recommended that an entry for Sulfur, NA 1350, Hazard Class 9, be added to 49 CFR Table

172.101 to be used for domestic transportation of sulfur.

We agree that this addition would be consistent with the entries for sulfur in 49 CFR Table 172.101. The entry for sulfur that is assigned to NA 1350 may be used only for domestic transportation. The proposed entry for Sulfur UN 1350, Hazard Class 4.1, has been retained for international transportation. The footnotes and special requirements of both entries are the same.

*7. Section 148.12.*

a. This was one of the most controversial provisions of the 1994 NPRM. Seventeen comments objected to this provision on the grounds that it would create a monopoly by naming the National Cargo Bureau, Inc. (NCB), as the exclusive agency for assisting the Coast Guard in administering Part 148. The comments requested that we authorize other competent entities to assist in the administration of these regulations.

Since 1952, the Coast Guard's hazardous materials regulations (HMRs) have contained a provision recognizing NCB. As proposed in 1994, § 148.12 (to replace existing § 148.01–13) granted no monopoly to the NCB, did not require that its services be used, and did not prohibit carriers from employing other surveyors. In this proposed rule, we have retained this section with only minor revisions.

b. One comment noted that § 148.12 implies mandatory Coast Guard inspection of each barge, creating a delay that would have an adverse economic impact.

This is not the case. Proposed § 148.12 in no way mandates inspection of every barge. We have the authority to inspect barges or other vessels to ensure compliance with the regulations, but in practice we do not carry out inspections of 100 percent of the affected vessels. The employment of NCB or any recognized marine surveying organization is voluntary on the part of a vessel operator.

8. *Section 148.55.* One comment noted that proposed paragraph (b) of this section, by authorizing compliance with international requirements in lieu of compliance with Part 148, may preclude some other regulations in Part 148.

As the rule was proposed in the 1994 NPRM, this would have been true. However, it was not the Coast Guard's intent that this provision should obviate the requirements concerning environmentally hazardous substances or zinc ashes. In this proposed rule, we have revised paragraph (b) of this section to require that these

commodities must comply with Part 148 in addition to the IMSBC Code. We are not aware of any other provisions in this rulemaking that are significantly more stringent than the IMSBC Code.

*9. Section 148.60.*

a. One comment recommended that shipping papers include the shipper's and transporter's Hazardous Materials Registration Number.

Under PHMSA regulations at 49 CFR part 107, subpart G, registration is required only for shippers and transporters of certain packaged hazardous materials. Registration is not required for shippers or transporters of bulk materials, including solid materials, liquid chemicals, and compressed gases. Therefore, not all shippers and transporters of bulk solid materials will have Hazardous Materials Registration Numbers.

b. One comment stated that the proposed regulation provided inadequate protection regarding shipment by barge. Because barges do not have masters, there is no one to hold responsible for accepting the commodity.

We point to § 148.2, proposed in this rulemaking, which places the duty to comply with these regulations on "each master of a vessel, person in charge of a barge, owner, operator, charterer, or agent." We propose to revise the definition of "master" in § 148.3 to indicate that the person in charge of a barge may perform the functions of a master for the purposes of this proposed rule. We also propose to add the definition of "person in charge of a barge" to § 148.3.

c. One comment requested that the Coast Guard define the format or document to be used for notification of the master.

We do not intend to impose a format for communications between shipper and carrier. A single format cannot take into account all forms of communication between all types of shippers and carriers. Documentation should be in a form acceptable to both parties.

d. One comment suggested that it may be good practice to have a material safety data sheet (MSDS) address some portions of proposed § 148.60.

We agree with the comment, but point out that proposed § 148.61 already allows hazardous materials information to be provided in the form of an MSDS.

e. One comment observed that, as proposed in the 1994 NPRM, § 148.60(d) negated the requirement for shipping papers for shipments of PDM, including coal.

In this proposed rule, we have resolved this issue by removing

paragraph (d) of § 148.60. Because of the proposed applicability provisions at § 148.1, shipping papers would be required for all shipments of hazardous materials and PDM by cargo vessel, and by unmanned barge if the barge is on an international voyage. Shipping papers are not required for PDM when transported by barge in domestic transportation.

f. One comment stated that the shipping paper requirements for PDM in the 1994 proposal were not clear; this comment proposed that the requirement for shipper advice be dropped.

Shippers' advice to the master is essential for many materials. The shipper has the most knowledge of the characteristics and hazards of the material and therefore can provide the best advice for shipping. This information most commonly is conveyed through shipping papers and DCMs. Under SOLAS, shipping papers and a DCM are required for all hazardous cargoes. Therefore, in this proposed rule, we removed the exception for PDM in international commerce. Because of the proposed revision to the applicability provisions at § 148.1, neither shipping papers nor a DCM are needed for shipments of PDM by unmanned barge in domestic transportation.

10. *Section 148.62.* Two comments did not believe safety would be meaningfully enhanced by a requirement to transfer and maintain aboard an unmanned barge written information on the hazards of these cargoes.

The proposed regulations require that the shipping paper and emergency response information be kept on the tug or towing vessel, or, in the case of a moored barge, in a readily retrievable location. The purpose of this requirement includes the safety of first responders. If an incident should occur on board the barge, it is essential that personnel responding can obtain emergency response information. If the shipper or the master of a vessel or person in charge is not available, this may be the only source of information on the cargo.

11. *Section 148.70.*

a. One comment requested that barges be exempt from the requirement for a DCM.

Under the revised applicability provisions of this proposed rule, barges are exempt from DCM requirements unless they are on an international voyage. On international voyages, barges carrying Class 4 through 9 hazardous materials in bulk must comply with SOLAS and therefore must have a DCM.

b. Another comment questioned whether a DCM is required for materials classed as PDM.

The answer is no. A DCM is required only when a cargo vessel (or a barge on an international voyage) transports bulk materials of Hazard Classes 4 through 9.

c. One comment recommended that a DCM be required for unmanned barges.

We partially agree. Under SOLAS, an unmanned barge carrying bulk hazardous materials other than PDM on an international voyage must have a DCM on board. For barges in domestic transportation, however, the information required to be on the DCM is either not applicable or is redundant to information presented on the shipping paper. The shipping paper required on board the towing vessel or on the barge under proposed § 148.60 provides sufficient information.

12. *Section 148.80.*

a. One comment asked whether the definition of "responsible person" included members of a ship's crew designated by the master or his deputy and noted that, if so, no changes in current practices are implied.

This definition as referenced by the comment is the intended definition of "responsible person." The responsible person must be a person empowered by the master of a vessel or the owner or operator of a barge to make all decisions relating to his or her specific task and must have the necessary knowledge and experience for that purpose. We have added this definition of "responsible person" to proposed § 148.3.

b. Another comment asked whether these regulations would require either the vessel or the shipper to provide a "responsible person" to supervise the loading.

The answer is yes. The proposed rule requires that a responsible person be assigned by either the master of the vessel or the owner or operator of a barge.

13. *Section 148.90.*

a. Eighteen comments questioned the need for holds to be thoroughly cleaned of the previous cargo when the same cargo is to be loaded again.

We believe that the 1994 NPRM was ambiguously worded with regard to the cleaning of cargo holds. The current proposed rule clarifies that thorough cleaning is required only when the previous cargo is incompatible with the cargo being loaded. Compatibility is determined by reference to the stowage and segregation requirements in Subpart D of Part 148.

b. Four comments stated that the requirement that each cargo hold be as dry as practicable was in itself not practical.

The proposed rule clarifies that this requirement applies only to bulk solids that are dangerous when wet or that are subject to liquefaction.

c. Two comments expressed the need for shippers to advise masters of Great Lakes vessels regarding stowage factors and trimming, because of the unique design and operating mode of these vessels. According to the comments, the best course of action is to test every coal cargo for methane regardless of information provided by the shipper.

We agree. The IMSBC Code requires that the atmosphere above the cargo in each hold containing coal be regularly monitored for the concentration of methane, oxygen, and carbon monoxide with procedures outlined in Appendix 1.

d. Another comment recommended that the requirement to provide information on the chemical properties and related hazards of coal and petroleum coke should be omitted.

We disagree. In the interest of safety, the master of the vessel must be fully informed of the nature of the material to be loaded. The regulations, it should be noted, do not stipulate that the chemical properties and related hazards information must be provided for each shipment. For repetitious shipments by a single shipper of a material whose characteristics remain unchanged, this information need only be provided once and retained on file.

14. *Section 148.100.* One comment recommended that recording the details of cargo monitoring and gas testing in a separate dedicated book should be allowed to continue. The ship's log need only make reference to such testing or monitoring.

We agree with the comment and revised proposed § 148.100 requiring that the date and time be recorded in the ship's log. The proposed rule requires only that the detailed information be recorded, and does not specifically require that it be recorded in the ship's log.

15. *Section 148.110.* One comment stated that a cautionary statement referring to 33 CFR part 151 might be appropriate for inclusion in § 148.110.

We agree. Under 33 CFR part 151, operational and maintenance wastes such as cargo residues and deck sweepings are considered "garbage." When on U.S. territorial seas or inland waters, cargo residues and deck sweepings must be retained on the vessel and disposed of as specified in that part; therefore, we included this information in the proposed § 148.110.

16. *Section 148.150.* One comment requested that a provision be added under § 148.150 to read "sulfur must be

segregated as required in § 148.120 for Class 4.1 materials.”

We agree with the comment and made this revision.

17. *Section 148.155.* One comment interpreted this section as requiring separation by one complete cargo compartment between two PDM commodities. They doubted that a vessel would be capable of sailing with an empty intermediate cargo compartment without stressing the vessel.

This comment likely refers to proposed § 148.155(d)(2). The separation provision applies only when the temperature of petroleum coke is 55 °C (131 °F) or higher when loaded. The purpose of this requirement is to prevent contact between a bulkhead of a cargo hold containing hot hazardous material and a cargo in an adjacent cargo hold that is sensitive to heat. If it is necessary to transport petroleum coke in a hold adjacent to other hazardous materials, the solution is to not load hot petroleum coke until its temperature decreases to below 55°C. Alternatively, if possible, nonhazardous cargo could be stowed in the intervening hold.

18. *Section 148.205.*

a. One comment stated that the temperature limitations for ammonium nitrate fertilizer should be ensured by monitoring and controlling temperature at the output from the manufacturing process rather than by temperature probes once the material is loaded.

We agree that the temperature of ammonium nitrate fertilizer or any other bulk commodity is best controlled through the manufacturing process. However, only monitoring immediately before loading would ensure that the temperature of the cargo on the vessel is within safe limits.

b. One comment asked if the detonation test prescribed by The Fertilizer Institute was acceptable as an equivalent test under § 148.205(b).

In this proposed rule this test has not been added to the list of allowable tests because it is no longer being maintained by The Fertilizer Institute. Therefore, the detonation test prescribed by The Fertilizer Institute is not acceptable as an equivalent.

c. One comment stated that § 148.205(c)(1) is a reasonable requirement provided it does not mean that each load offered for shipment has to be tested. According to the comment, test data on file supporting the classification by the manufacturer should be sufficient.

This proposed provision does not imply that testing is required for each shipment as long as the chemical

composition of the material being shipped has not changed.

d. One comment noted that this section is deficient because it refers only to the “master” when the vessel may be a barge.

To clarify the applicability of this and similar provisions, we proposed to revise the definition of “master” in § 148.3 to include the “person in charge of a barge,” and add a definition of “person in charge of a barge” to that section.

e. One comment questioned the prohibition on fuel oil transfer during loading of ammonium nitrate fertilizers. This comment saw no reason why internal fuel transfers should not be permitted.

The purpose of prohibiting bunkering and fuel transfers during the handling of ammonium nitrate and ammonium nitrate fertilizers is to preclude any possibility of forming an explosive mixture through the contamination of the ammonium nitrate. This prohibition does not extend to transfers of fuel on board the vessel through the vessel’s fixed piping system. We have reworded the section to clarify this.

19. *Section 148.225.* One comment recommended that §§ 148.225 and 148.315 address the proper disposal of residue that has been “hosed down” or “washed down with fresh water.” Another similar comment recommended that § 148.315 should address proper disposal of sulfur residue that has been “hosed down” or “washed down with fresh water.”

Although the provision for washing down with fresh water is a direct quotation from the IMSBC Code, we recognize that it conflicts with Annex V of The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and 33 CFR part 151. Instead, in these sections, we propose to refer to 33 CFR parts 151.55 through 151.77.

20. *Section 148.240.*

a. One comment believed there should be some discrimination between supply and exhaust fans in determining which must be “safe for use in an explosive gas atmosphere.” The comment recommended that all existing fans should be “grandfathered.”

We disagree. Both intake and exhaust fans must be explosion-proof for two reasons. First, ventilation fans on board a vessel are often dual purpose, serving as both intake and exhaust. Second, pockets of gas may accumulate within the housings of both intake and exhaust fans during periods of non-use, creating the possibility of explosion.

b. Two comments expressed an objection to any broad-brush statement

classifying all coals as hazardous material.

We support the determination by the IMO that, while some coals are more hazardous than others, all have the potential to be hazardous. We note that the U.S. coal industry was represented on the working group that recommended provisions eventually included in the IMSBC Code.

c. One comment remarked that the requirements for coal were different and less demanding than the current recommendations contained in the BC Code (now the IMSBC Code).

Although phrased differently from the IMSBC Code, the proposed provisions of this chapter concerning coal (not limited to § 148.240) are neither different nor less demanding than those of the IMSBC Code.

d. Another comment proposed that some recognition be shown for the unique construction of the Great Lakes self-unloading vessel.

We accept the fact that Great Lakes vessels may have certain unique features. However, they are exceptions to the general case addressed in these regulations. If owners/operators of Great Lakes vessels cannot comply with this proposed rule, but can provide equivalent safety through alternative means, they may take advantage of the alternative procedures provisions of § 148.5.

e. One comment found § 148.240(a) not specific enough to establish the types of electrical fittings that are required.

We determined that 46 CFR part 111, subpart 111.105, is sufficient in clarity. An item of electrical equipment must be tested or approved in order to comply with IEC 79 series publications. The specific requirements are stated in 111.105–7(a) and (b) and a reference is made to this section in 148.240.

f. Another comment noted that § 148.240(a) did not apply to adjacent spaces because § 148.18(b) recognized that such spaces may have electrical equipment that is not certified safe for use in an explosive gas atmosphere.

This comment is correct. Paragraph § 148.240(a) has been revised so that it refers only to electrical equipment in cargo holds.

g. Fifteen comments expressed very serious objections to the provision that the temperature of coal at the time of loading not exceed 41 °C (105 °F), or 15 °C (27 °F) above the ambient temperature.

We agree with the comments. The temperature requirements in the 1994 NPRM were not consistent with the IMSBC Code and have been removed from this proposed rule.



h. Three comments stated that the wording of the requirement for trimming, *i.e.*, “reasonably level,” was subject to various interpretations. They recommended that the subjective nature of this section be eliminated by incorporating some quantitative factor, such as a maximum height of the peak of the pile expressed as a percentage of the vessel’s beam.

We recognize the subjective nature of this provision but find it to be impractical to impose an arbitrary quantitative standard for “level.” We have therefore removed this language from the proposed rule. The shipper will be responsible for providing trimming information in accordance with the new proposed shipping paper requirements.

i. Two comments observed that § 148.240(c)(1) provided no definition of “sealed”, but advised that self-unloading vessels cannot meet this sort of “sealing” requirement in all cases. The comments noted that a number of obvious exemptions would be necessary.

We find that the concept of “sealed” requires no regulatory definition. The purpose of sealing the accesses and hatches is to prevent the escape of methane from the hold into other spaces on the vessel. This paragraph has been revised to clarify that, because of their design, the unloading gates on self-unloading vessels are not required to be sealed.

j. One comment found the 1994 NPRM unclear as to the meaning of the word “casing,” and assumed that this refers to access trunks.

We agree. “Casing” is the term employed by the IMSBC Code. By common definition, a “casing” is the metal enclosure around a space such as an “access trunk.” To eliminate confusion, the word “casing” has been removed in this proposed rule.

k. One comment noted that there was no reference to the tunnel spaces on self-unloading vessels in the section on coal, and suggested they be included in § 148.240(c)(2).

We have adopted this suggestion in the proposed rule.

l. Three comments inquired as to what specifically are “hot areas” and what is considered adequate ventilation.

We agree that the use of the term “hot areas” in the 1994 NPRM was vague, and we have deleted it from this rulemaking.

In the context of § 148.240(c)(2), adequate ventilation means an air exchange that prevents an accumulation of gas that may be harmful to personnel in working spaces. The ventilation may be natural or mechanical and should be

commensurate with the risk of exposure of the space to harmful gases.

In the context of § 148.240(c)(3), adequate ventilation means surface ventilation as defined in § 148.240(f). Ventilation has been defined in the definition section, § 148.3.

m. One comment stated that paragraph (d) of this section was redundant by virtue of paragraphs (e), (f), and (i).

We do not agree. Paragraph (d) states a general prohibition on ventilation applicable to all shipments of coal.

Paragraph (e) requires the temperature of coal, known to be, or suspected of being, susceptible to self-heating, to be monitored. Paragraph (f) provides an exception to paragraph (d) for coals that generate methane. Paragraph (i) prescribes that the atmosphere in a hold containing a coal described in paragraph (e) must be monitored for carbon monoxide. There is no redundancy between paragraph (d) and any other paragraph or combination of paragraphs.

n. One comment asserted that the requirement to provide characteristics of the cargo is the responsibility of the shipper or his appointed agent, and objected to the reference in the 1994 NPRM to information about the cargo possessed by the terminal operator and/or vessel operator. Another comment noted that the requirement to monitor coal temperatures before loading should be the responsibility of the shipper. Three other comments stated the view that shippers at times may find it difficult or impossible to obtain the required information. These comments stated that shippers should not be liable for information they do not have.

In response to all of these comments, the Coast Guard replies that someone in the transportation chain must accept responsibility for the condition of a material to be loaded aboard a vessel. Logically, the primary responsibility resides with the person who offers the material for shipment. This person is responsible for knowing the specific types of cargoes being shipped and their hazardous characteristics. This responsibility does not absolve the terminal operator, who may have information about cargoes obtained through experience or observation, from an obligation to pass such information on to the master, nor does it absolve the master, who has the final responsibility for the safety of his vessel. This proposed rule clarifies that the master is responsible for monitoring the temperature of the coal.

o. Several comments requested clarification as to what triggers the requirement for ventilation of the cargo space. Three comments stated that the

term “freshly mined” was a subjective judgment and needed to be clarified.

One comment requested clarification of what “history” would trigger the ventilation requirements for coal.

This section has been revised in the proposed rule to emphasize the coal’s potential for emitting methane as the trigger for requiring ventilation of the cargo space.

p. One comment requested that temperature monitoring be waived with respect to coal stored in rail cars before loading.

As amended, the proposed rule does not specifically require monitoring the temperature of coal that is stored in rail cars before it is loaded.

q. One commenter asked if there is a specific standard for electrical equipment and cables in a hold containing coal, to ensure that they are suitable for use in a potentially explosive atmosphere.

Proposed § 148.240(g) specifies that the electrical equipment, and by implication its associated fittings, must comply with 46 CFR 111.105, which applies to installation of electrical equipment in hazardous locations.

r. One comment noted that the meaning of the expression “may not be de-energized” was not clear, and asked whether this statement was prohibitive or permissive.

According to **Federal Register** drafting conventions, the term “may not” or “No person may” always implies a prohibition. However, we have rephrased this paragraph for clarity.

s. Two comments recommended that electrical equipment in adjacent spaces be allowed to meet then-current Coast Guard requirements as long as these spaces are periodically monitored for the presence of explosive gas.

Under 46 CFR 111.105–35, existing electrical equipment in cargo holds containing coal must now be suitable for use in an explosive gas atmosphere. In adjacent spaces, electrical equipment may be suitable for use in nonhazardous atmospheres provided such equipment is de-energized if the concentration of flammable gas in the space reaches a dangerous level. Because this proposed rule introduces no new requirements, there is no need to “grandfather” existing installations.

t. One comment questioned the exception from gas emission monitoring for voyages of 72 hours or less, noting that all research data indicates that methane has the potential to leak from coal immediately and that occurrences of this sort have resulted in several accidents.

This exception was included in the 1994 NPRM to account for vessels

operating on the Great Lakes. The Coast Guard recognized the merit of the comment and removed the exception from this proposed rule.

u. One comment assumed that opening a “booby hatch” or vent pipe would not be construed as “opening the cargo hatches or entering the cargo hold.”

The comment’s assumption is correct.

v. Three comments noted that it had been the Chemical Transportation Advisory Committee (CTAC) Subcommittee’s intent to exempt unmanned barges from all requirements to test the atmosphere above the coal.

The Coast Guard has proposed to exempt unmanned barges that are carrying any PDM, including coal, from the applicability of this part unless the barges are on an international voyage.

w. Two comments noted that, for coal, the procedure in this section for taking pre-loading temperature readings would not always be effective in determining the true status of the stockpile or cargo. Additionally, they questioned the absence of a provision for continuous electronic (infrared) temperature monitoring, a procedure that is available at some export terminals and that has been proven effective and reliable.

We removed the pre-loading temperature limitations for coal. As a means of monitoring the temperature increase for self-heating coal in the cargo hold of a vessel, we believe the procedure outlined in § 148.240(e) is satisfactory. The Coast Guard does not discount continuous electronic (infrared) temperature monitoring but has not had an opportunity to assess its equivalence to the method specified. Anyone wishing to use continuous electronic monitoring may request authorization under § 148.5.

21. *Section 148.245.*

a. Two comments noted that the procedures for loading DRI and metal sulfide concentrates in rain or snow were not addressed. They proposed that the rule include detailed procedures for monitoring rainfall and calculating the resulting moisture content, and provisions for communicating this information with the vessel master and terminal.

The Code of Federal Regulations (CFR) cannot serve as a detailed instruction manual for safe handling and loading of cargoes. It is the shipper’s responsibility to provide DRI to the master of the vessel in an acceptable condition. Section 148.245.3(c) prohibits acceptance for transport of DRI or cold-molded briquettes that are wet or are known to have been wetted. How this condition is

achieved and maintained is left to the shipper’s good judgment.

b. One commenter felt that § 148.250(d), which prohibits the loading of DRI hot-molded briquettes during periods of rain or snow, was overstated.

We do not agree with this comment. This prohibition is a precautionary measure for keeping cargoes as dry as practicable. When DRI hot-molded briquettes are exposed to water, they react, releasing hydrogen that initiates self-heating of the cargo. As seen in several incidents over the past years, this self-heating can ultimately lead to auto ignition of the cargo, causing a fire or an explosion within the hold and endangering the life of the crew.

c. One comment requested a definition of “short international voyage.”

After further review, we have removed this terminology from the proposed rule.

d. Another comment stated that while this section offers protection to radar and RDF scanners on board the vessel transporting DRI, it fails to offer any protection to the crew, adjacent property owners, etc., from the same dust which would damage the radar.

The Coast Guard’s statutory mandate is to protect life and property at sea and to assure preservation of the marine environment. A ship’s navigation systems are vital to such protection. Under this rulemaking and OSHA regulations, crewmembers and other persons engaged in cargo handling operations must wear protective clothing and respiratory devices when handling dusty cargoes. The protection of adjacent property and persons not employed by the terminal or the carrier is under the purview of EPA air pollution regulations or local statutes and is beyond the scope of this project. If cargo is appropriately loaded and shipped, the amount of dust released into the environment should be minimal.

22. *Section 148.265(g).* One comment felt that the requirement to take and record the temperature of fish meal or fish scrap three times a day during a voyage was particularly onerous for unmanned barges.

We agree that taking the temperature three times a day is impractical on an unmanned barge, especially when that barge is part of a multi-barge tow. The proposed rule excludes unmanned barges from the temperature-measurement requirement.

23. *Section 148.270.* One comment found § 148.270(d) misleading and thought that it might exceed Coast Guard authority.

What specifically was “misleading” was not stated. However, this provision does not exceed Coast Guard authority. It merely directs those persons responsible for loading or unloading a vessel to take all reasonable precautions to prevent dispersal of a hazardous substance into the environment, and to report any spill to the National Response Center in accordance with EPA regulations. In the proposed rule, the final sentence has been revised to refer to the “garbage” disposal requirements of 33 CFR part 151.

24. *Section 148.285.*

a. One comment asked the Coast Guard to advise on the format or type of document to be used for notifications to the master of the vessel.

We do not intend to impose a format for communications between shipper and carrier. Documentation should be in a form acceptable to both parties. The language of notification to the master has been removed from this section because that information is already contained in the proposed § 148.60.

b. One comment stated that if the sampling of metal sulfide concentrates is not conducted correctly, and, in fact, is not representative of the entire consignment at the time of shipment, then the test procedures may show the cargo safe to transport when this is not the case.

The statement is correct. We expect the information a shipper provides to the master to be both accurate and detailed.

25. *Section 148.295.* One comment noted that the 1994 NPRM § 148.295 made no mention of the self-heating or spontaneous ignition characteristic of petroleum coke, despite a reference to it in the hazardous or potentially dangerous characteristic column of Table 148.10, footnote 10, found in § 148.11.

This comment is correct. Text has been added to 148.295(g) regarding spontaneous heating of this cargo and the necessity of temperature monitoring during transport.

26. *Section 148.310.*

a. One comment suggested removing seed cake identification numbers UN 1386 and UN 2217 from the rule.

We have not accepted this suggestion. The United Nations Committee of Experts and the IMO recognize seed cake as a material that may self-heat and, if containing an excessive amount of oil, may be spontaneously combustible. Further, when transported in packages, this commodity is regulated as a hazardous material of Class 4.2 in all modes under PHMSA regulations at 49 CFR Chapter I, Subchapter C.

b. One comment recommended that the Coast Guard amend the rule to be consistent with long-established industry standards for seed cake. Two comments proposed that the exemption from Special Permit requirements not be limited to solvent-extracted rapeseed meal, pellets, and soya bean meal, but should be extended to other types of seed cake if they meet the prescribed oil and moisture content levels. A fourth comment requested that the total oil and moisture requirement for cottonseed meal be raised to a maximum of 6 percent.

The criteria for seed cake, UN 1386, are based on the established criteria for classification of hazardous materials as contained in Hazardous Materials Regulations (HMR; 49 CFR Parts 171–180) and the United Nations Recommendations on the Transport of Dangerous Goods. Exemptions that were granted to rapeseed meal, pellets, and soya bean meal were based on testing conducted on a world-wide basis that showed these specific products, with varying moisture content, did not qualify as hazardous materials. The oil and moisture requirement for cottonseed meal could possibly be amended if tests are conducted using approved methods and the results show that it is not dangerous. If the seed cake industry wishes to have certain materials deregulated when transported in bulk, they may petition the Coast Guard following the process in 33 CFR 1.05–20.

27. *Section 148.325.*

a. Two comments requested that sawdust and wood chips not be included in these regulations.

Sawdust and wood chips, which are classed as PDM, would not be regulated when transported domestically in unmanned barges. However, the regulations would continue to apply to sawdust and wood chips transported by cargo vessel in international commerce.

b. One comment requested that the Coast Guard clarify that having hatch covers completely open when loading wood chips would negate the need for self-contained breathing apparatus (SCBA).

No change to the rule is necessary. Under this rule, SCBA is required for entry into confined spaces containing sawdust or wood chips unless the atmosphere in the space has been tested and determined to contain sufficient oxygen to support life. In an emergency when testing is not possible, entry into an unventilated space is permitted only when wearing SCBA. Loading operations are not an emergency. If the cargo hold to be loaded with wood chips has been opened and ventilated,

and has been determined to be safe for human occupancy, there is no reason for a worker engaged in loading operations to have to wear SCBA.

28. *Section 148.15.* Another comment proposed that the Coast Guard establish a fee schedule to issue special permits.

The Coast Guard does not charge a fee for special permits and does not plan to do so.

29. *Section 148.405.* One comment recommended that the Coast Guard recognize hot work practices for individual companies; specifically, approval of hot work by the Chief Engineer.

No change to the rule is needed. Hot work may be authorized by the vessel's master, which by definition includes "an authorized representative of the master." A ship's officer, such as the Chief Engineer, would fall under this definition of master as proposed in § 148.3.

30. *Section 148.407.* Three comments stated that it would be impractical and unnecessary to prohibit smoking anywhere on a vessel at any time.

We agree with the comments. In this proposed rule, smoking is prohibited on the weather deck of the vessel during loading and unloading. At all times while cargo is on board, smoking is prohibited in adjacent spaces and in the vicinity of hatch covers, ventilator outlets, and other accesses to the hold containing the cargo.

31. *Section 148.410.* Two comments questioned the need for a shore-supplied fire main and also the need for fresh water. The ship's supply, they stated, is more reliable, particularly in cold weather.

We agree that the requirement proposed in 1994 exceeds both the IMSBC Code and recommended industry practice. We have removed from this proposed rule the requirement for fresh water from a shore source.

32. *Section 148.415.*

a. One comment noted that there are no requirements for the gas and oxygen analyzers to be calibrated at specified intervals.

In this proposed rule, we have added a provision to §§ 148.415 and 148.85 specifying that the gas analyzing equipment must be calibrated in accordance with the manufacturer's instructions.

b. One comment stated that there was no sustainable justification for exempting unmanned barges from these requirements.

We disagree and believe there is ample reason to exclude unmanned barges from the requirement to have flammable gas analyzers on board. First, the proposed rule does not apply to

barges carrying PDM, except when the barges are on an international voyage. In domestic transportation, these materials are normally carried in open hopper barges, in which gases emitted by the material would be unlikely to reach flammable concentrations. Second, for barges carrying cargoes other than PDM, it would be impractical and expensive to require a gas analyzer and tubes on each barge. An unmanned barge is not likely to have a safe and secure place to stow such delicate and sensitive devices. Finally, there is no reason for the crew of a towing vessel to enter the cargo space of a barge while underway. Apart from the potential danger to personnel working on the deck of a barge in a typical multi-barge tow, it would be difficult, if not impossible, to remove the hatch covers to gain access for entry.

33. *Section 148.430.* One comment agreed with § 148.430 as proposed in the 1994 NPRM, but noted that, in some cases, it may mean providing some additional SCBA units.

In this proposed rule, we have removed § 148.430 and incorporated its provisions into § 148.85. The substance of the observation is correct: At least two SCBA units are required under proposed § 148.85 and vessels may carry more if they deem it is necessary.

34. *Section 148.450.* One comment objected to the inclusion of coal as a cargo subject to liquefaction, because liquefaction as a practical occurrence cannot occur with coal.

This issue was addressed earlier under a comment on the entry for coal in Table 148.10. Liquefaction can occur in a cargo of coal consisting of fine-grained particles. In this proposed rule, this section has been revised to specify the maximum particle size of coal to which the section applies.

*C. Changes Between the 1994 NPRM and This NPRM, Not Prompted by Specific Comments*

1. *Section 148.3.* We added the definition of "threshold limit value" (TLV), and based the definition on that used by the American Conference of Governmental Industrial Hygienists (ACGIH).

2. *Section 148.10.* To conform to recent amendments to the IMSBC Code, we changed the material description "aluminum processing byproducts" to "aluminum smelting byproducts or aluminum remelting byproducts." For the same reason, we added to Table 148.10 the following language under "Characteristics" at the entry for silicomanganese: "With known hazard profile or known to evolve gases. With silicon content of 25 percent or more."

Additionally, we added entries for peat moss and ferrous sulfate to Table 148.10 to conform to recent addition to the IMSBC Code.

3. *Section 148.15.* We propose to set the maximum term of validity for Coast Guard special permits to 4 years. This would reduce the paperwork burden for applicants for Coast Guard special permits, and would reduce the Coast Guard's administrative burden.

4. *Section 148.145.* Paragraphs (b) and (c) of this section, as they appeared in the 1994 NPRM, were not stowage or segregation requirements, which this section addresses. We have transferred these provisions to § 148.300.

5. *Section 148.240.* To reflect a recent decision by the IMO, we revised paragraphs (e), (h), (i), and (j) to permit the monitoring of carbon monoxide emissions as an alternative means of determining rising temperature in a cargo of self-heating coal. Also, we lowered the gas emission threshold at which corrective action must be initiated from 30 percent to 20 percent.

6. *Section 148.242.* This new section contains special carriage and handling requirements for copra, based on the provisions of the IMSBC Code.

7. *Section 148.265.* Coast Guard Special Permit 14–95 authorizes treating fishmeal with a tocopherol (vitamin E) based liquid antioxidant in lieu of the antioxidants specified in the former regulations. Paragraphs (c) and (e) of this section have been revised to include this practice.

8. *Section 148.290.* This new section contains special carriage and handling provisions for peat moss, based on the provisions of the IMSBC Code.

9. *Section 148.300.* On September 28, 1995, the U.S. Department of Transportation Research and Special Programs Administration (now PHMSA) published a rulemaking in Docket HM–169A that made their regulations at Title 49 of the CFR governing the transport of radioactive materials compatible with the regulations of the International Atomic Energy Agency (IAEA). Because 49 CFR 173.403 now contains a definition of “Surface Contaminated Object” (SCO–I), this definition need not appear in Coast Guard regulations. Consequently, the term “Surface Contaminated Object” is defined in § 148.300 by reference to 49 CFR 173.403.

## V. Discussion of Proposed Rule

The proposed rule would expand the list of materials that may be transported in bulk without applying for a special permit and would detail the special handling requirements. The new list aligns the CFR with mandatory

international code, including requirements in Chapter VI and Chapter VII of SOLAS. The proposed rule includes materials already listed in the IMSBC Code and adds materials that have a safe transport history under existing Coast Guard special permits. The proposed rule also eliminates applications and renewals for most special permits now required when carrying materials regulated under this part.

This rulemaking would add 21 new materials to 46 CFR part 148. Some of these materials are covered by the IMSBC Code, some are covered by the HMR (49 CFR chapter I, subchapter C), and some are currently subject to Coast Guard special permits.

### A. Proposed Changes to Part 97

This proposed rule would add a definition of “bulk solid cargo” and revise Subpart 97.12 to clarify that the subpart applies to bulk solid cargoes in general, rather than only to ores and ore concentrates. The new proposed rule also clarifies that this section does not apply to grain, as was the original intent of this part, although this was not specified. Further, existing § 97.12–5, which has not been revised since 1965, references a manual that was the predecessor of the IMSBC Code and is no longer in print. The proposed rule eliminates that reference and refers the reader to Part 148 as a source of information for complying with the requirement to provide guidance on safe loading and stowage to the master.

We have also added new proposed § 97.12–5 on liquefaction in order to bring forward the requirements contained in § 148.450 and apply them to all cargoes that are prone to liquefaction. We also propose to modify § 97.55–1 to apply to any bulk solid cargo to which § 148.435 applies.

In the proposed rule we have updated the authority citation for Part 97 to include 46 U.S.C. 5111 regarding the provision of loading information to the master or individual in charge of the vessel.

### B. Proposed Changes to Part 148

We propose to revise the title of 46 CFR part 148 to read “Carriage of Bulk Solid Materials that Require Special Handling.” We propose to update the authority citation for Part 148 to include 33 U.S.C. 1602 and Executive Order 12234 regarding international regulations, as well as 46 U.S.C. 3306 and 5111 regarding regulation of inspected vessels and provision of loading information to the master or individual in charge of the vessel.

We propose to divide Part 148 into six subparts. Within those subparts, the proposed rule reorganizes and renumbers existing sections and adds new sections. We discuss these changes in detail below.

### 1. Proposed Subpart A—General

The first 12 sections of the revised Part 148 would include general information applicable to the entire Part. We propose to revise the applicability section (formerly § 148.01–1, now proposed § 148.1) to align with the IMSBC Code. Specifically, this change would apply Part 148 to all foreign-flag and U.S.-flag vessels operating in U.S. waters. The proposed regulations would also apply to all classes of vessels that transport bulk solid cargoes, including unmanned barges and barge-carrying vessels. The regulations would not apply to unmanned barges when carrying cargoes classed as PDM in domestic transportation.

We propose to add a new “responsibility and compliance” section at § 148.2, making the vessel master, person in charge of a barge, owner, operator, charterer, or agent responsible for compliance with this part.

We propose to add a new “definitions” section at § 148.3. This section would contain definitions that currently are located throughout Part 148, as well as new definitions that were included for clarity and consistency with the IMSBC Code, including “away from,” “Bulk Cargo Shipping Name,” “compartment,” “confined space,” “domestic voyage,” and “hazard class.” We also propose to revise the definition of “bulk” for clarity and consistency with the IMSBC Code.

We propose to add a new “alternative procedures” section at § 148.5 that outlines the procedures for requesting permission to use alternative procedures, including exemptions to the IMSBC Code, in place of any requirement of this part. We propose to revise the section on permitted cargoes (formerly § 148.01–7, now proposed § 148.10 and Table 148.10) to improve usability and add additional bulk solid cargoes that appear in the IMSBC Code or are authorized under a Coast Guard special permit. In revising the table, the Coast Guard proposes to add 4 additional columns describing: the identification number; a reference to the preferred BCSN, if needed; cargo characteristics; and the applicable CFR sections containing detailed special requirements for transporting that material. These revisions would make it easier to determine the exact

requirements for carriage of each approved material.

In Table 148.10, the entry for "aluminum dross, class PDM" would read "aluminum processing byproducts or aluminum re-melting byproducts, UN 3170, Class 4.3," and the entry for "zinc ashes, dross, residues and skimmings" would read "zinc ashes, UN 1435, Class 4.3." These changes reflect reclassification of the materials by the United Nations Committee of Experts on the Transport of Dangerous Goods. In addition, the revised table would add the following to the list of permitted cargoes, to maintain consistency with the IMSBC Code and current Coast Guard special permits: aluminum ferrosilicon powder; aluminum silicon powder, uncoated, brown coal briquettes; castor beans; coal; DRI (A); DRI (B); environmentally hazardous substances, solid, n.o.s.; ferrous sulfate, fluorospar; iron oxide, spent, or iron sponge, spent; linted cotton seed; magnesia, unslaked; metal sulfide concentrates; peat moss with moisture content of more than 65 percent by weight; pitch prill; pyrites, calcined; seed cake; silicomanganese with silicon content of 25 percent or more; vanadium ore; and wood chips, wood pellets, and wood pulp pellets.

We further propose to add a new section on hazardous or potentially dangerous characteristics at § 148.11. This section would incorporate information currently contained in column 3 of the table of permitted cargoes. The new section would set forth the meaning of the "hazardous or potentially dangerous characteristics" codes given in the revised Table 148.10. This includes code 27, a reference to the Certain Dangerous Cargoes (CDC) regulations found in 33 CFR 160.204, that apply to ammonium nitrate.

Finally, we propose to renumber the existing § 148.01–13, "Assignment and certification," as § 148.12.

## 2. Proposed Subpart B—Special Permits

As proposed, Subpart B would set the guidelines for petitions and use of special permits. The proposed revisions to Subpart A should greatly reduce the need for special permits. However, in the event a person wishes to ship a bulk solid material not listed in Table 148.10, the proposed Subpart B allows that person to petition for authorization from the Coast Guard. The revised process for requesting a special permit remains substantively similar to the existing process, but places more responsibility on the shipper to determine the appropriate conditions of carriage. The proposed Subpart B also clarifies who must apply for a special permit, what

information is required to obtain a special permit, what activities are covered by a special permit, how long a special permit remains valid, and how to obtain copies of special permits. These proposed sections are more detailed than the current regulations, and are designed to resolve recurring misunderstandings concerning the applicability of the special permit. In addition, requiring applicants to submit more detailed information about the material carried would greatly decrease the amount of research time needed by the Coast Guard when processing requests for special permits.

Included within the proposed Subpart B is a revision of existing § 148.01–11 designed to simplify the standard conditions contained in special permits, and to renumber it as §§ 148.15 through 148.30. In addition, the Coast Guard proposes to remove the current § 148.01–11(b)(1) because it describes requirements imposed by special permits.

## 3. Proposed Subpart C—Minimum Transportation Requirements

As proposed, Subpart C would outline minimum transportation requirements for cargoes subject to this chapter, including temperature readings, shipping paper requirements, emergency response information, DCMs, preparation and supervision of cargo transfers, confined space entry and equipment, preparations for loading, procedures after unloading, log book entries, and incident reports.

The Coast Guard proposes to clarify the proper conduct of temperature readings (formerly § 148.03–7, now proposed § 148.51), and to require log book entries (proposed § 148.90) to record each temperature measurement and each required test for toxic or flammable gases.

The Coast Guard also proposes to revise shipping paper requirements (formerly § 148.02–1, now § 148.60) to align with the IMSBC Code while requiring the shipping papers be provided in English. With regard to emergency response information, the Coast Guard proposes new § 148.61 requiring that the shipper of a material listed in Table 148.10 provide the master or his representative with appropriate emergency response information, including preliminary first aid measures and emergency procedures to be carried out in the event of an incident or fire involving the cargo. Provision of an MSDS would satisfy this requirement.

With regard to DCMs (formerly § 148.02–3, now proposed §§ 148.70 through 148.72), the Coast Guard

proposes to revise the requirements for carriage and contents of the DCM. As proposed, the DCM requirements would not apply to unmanned barges not on international voyages.

With regard to confined space entry and equipment, the Coast Guard proposes new § 148.85, which would require that vessels, with the exception of unmanned barges, that carry a material listed in Table 148.10 also carry equipment capable of measuring atmospheric oxygen and at least two approved SCBA that each have at least a 30-minute air supply. Proposed § 148.86 would prohibit entry into a confined space unless the space has been tested to ensure there is sufficient oxygen to support life; in case of emergency, a person may enter a confined space without testing it if that person is wearing a SCBA, suitable protective clothing as necessary, and a wire rope safety line tended by a trained person outside the space, and if the entry is supervised by a responsible person.

With regard to procedures to be followed after unloading, the Coast Guard proposes to renumber existing § 148.03–13 as § 148.110 and revise it to require retention and proper disposal of cargo-associated wastes, cargo residue, and deck sweepings when in U.S. territorial seas or inland waters.

In addition, the Coast Guard proposes to add new § 148.55 "International Shipments," which would enable the use of the IMSBC Code as an alternate method of compliance with Part 148, as long as the bulk solid material being transported is subject to the requirements of the IMSBC Code. However, transport of zinc ashes must comply with Part 148 because zinc ashes pose environmental hazards that would not otherwise be addressed. In addition, the proposed § 148.55 would include new paragraphs (b)(3) and (b)(4) to require Coast Guard approval of any exemption granted by another government before reliance on that exemption for compliance with Part 148. Finally, § 148.55 would make the person importing a bulk solid responsible for ensuring the foreign shipper is aware of U.S. requirements.

## 4. Proposed Subpart D—Stowage and Segregation

Proposed Subpart D would set stowage and segregation requirements for cargoes. These proposed requirements are in addition to the minimum requirements for all materials and the general requirements for their respective hazard classes contained in Subpart A. The Coast Guard proposes to require segregation of cargoes from

incompatible materials as shown in new Tables 148.120A and B. These tables present the requirements for, respectively, segregating incompatible bulk solid cargoes, and segregating bulk solid cargoes from incompatible packaged cargoes. The segregation requirements set out in Tables 148.120A and B are based on a rational approach established by the IMO, and are identical to the IMSBC Code. The Coast Guard proposes additional stowage and segregation requirements, detailed by class, in the remainder of Subpart D.

5. Proposed Subpart E—Special Requirements for Certain Materials

Proposed Subpart E would set forth special requirements for certain hazardous materials, including ammonium nitrate, DRI, seed cake, and zinc ashes. For clarity, the requirements are presented in tabular form at new proposed Table 148.155. Many of the requirements are drawn from the IMSBC Code, or are required already under applicable special permits. The addition of Table 148.155 will reduce the number of special permits issued and harmonize these regulations with the IMSBC Code.

In addition to listing special requirements for certain hazardous materials, this subpart proposes requirements for bulk shipment of hazardous substances as defined by PHMSA regulations at 49 CFR 171.8, which in turn are based on Environmental Protection Agency (EPA) regulations implementing the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA classifies materials as hazardous substances based on the material's potential to endanger public health or welfare, or the environment, if the material is accidentally released. Materials classified as hazardous substances under 49 CFR 172.101, Table 1 to Appendix A, previously were carried only pursuant to special permits on a case-by-case basis. This section would not relieve the shipper or the master from any of the reporting requirements set forth in 40 CFR part 302, but would set out minimum requirements for the safe carriage of solid hazardous substances in bulk.

Within Subpart E, the Coast Guard proposes to revise current § 148.04–13 so that a vessel may not leave port unless the Captain of the Port (COTP) is satisfied that the temperature of ferrous metal is within the limits set by the applicable provisions of this section. The current regulation merely specifies that the COTP must be notified if the temperature exceeds those limits.

In the specific context of petroleum coke, the Coast Guard proposes to combine two existing sections (§§ 148.04–15 and 148.04–17) into one section at § 148.295. The proposed requirements at new § 148.295 align with the IMSBC Code and already are required under applicable special permits.

With regard to radioactive materials, the Coast Guard proposes to revise the current § 148.04–1 as § 148.300 and align it with the IMSBC Code, which has re-defined low specific activity (LSA) radioactive materials and added a new entry for SCO-I. As a result, the proposed regulations would apply to surface contaminated objects.

In the specific context of seed cake, we have proposed to exempt from this regulation citrus pulp pellets containing not more than 2.5 percent oil and a maximum of 14 percent oil and moisture combined. Our decision was based on extensive testing at various moisture and oil levels from several countries currently transporting the product. It was found that within these limits, the product should not be considered a hazardous material.

Although the Coast Guard intends to harmonize U.S. regulations with the IMSBC Code, the proposed § 148.330, which applies to zinc ashes, zinc dross, zinc residues, and zinc skimmings in bulk, would differ significantly from the IMSBC Code. As proposed, § 148.330 requires COTP notification in advance of any cargo transfer operations involving these cargoes. The provisions of this section are based on two Coast Guard special permits, SP 8–83 and SP 4–84, which we developed as the result of incidents involving fires or explosions in cargoes of zinc skimmings, including at least one with loss of life. The intent of this section would be to reduce the possibility of generating hydrogen gas through the reaction of seawater and zinc. Therefore, the aging, storage, and temperature requirements in this proposed section exceed those in the IMSBC Code. Both the IMSBC Code and the proposed regulations require mechanical ventilation, explosion-proof fans, and installed thermocouples for temperature gauging in the cargo hold.

6. Proposed Subpart F—Additional Special Requirements

Proposed column 7 of Table 148.10, “Special Requirements,” refers readers to other sections containing additional requirements. Many of those sections are contained in proposed Subpart F, which would set forth requirements for safety equipment and procedures when handling certain cargoes. The types of

special requirements that may apply to certain cargoes include: prohibition on sources of ignition including, in some cases, smoking or electrical circuits; a requirement that fire hoses be available at each hatch through which a covered material is being loaded; requirements for toxic gas and flammable gas analyzers and testing; stowage precautions; and special precautions for cargoes subject to liquefaction.

With regard to cargoes subject to liquefaction, the Coast Guard's proposed rule results from specific experience. On April 11, 1991, off the California coast, a foreign-flag vessel that had loaded a bulk solid material in a U.S. port developed a severe list when the cargo shifted. Fortunately, this vessel was able to return to port and off-load. The Coast Guard investigation determined that the cargo shifted because its moisture content exceeded the safe Transportable Moisture Limit (TML). This condition caused the material to behave like a liquid. Because of this marine casualty and others of a similar nature, the Coast Guard proposes to add new § 148.450 to prescribe requirements for transporting bulk solids that are subject to liquefaction. These proposed rules are adapted from the IMSBC Code and only apply to calcined pyrites, fluorospar, fine particle coal, metal sulfide concentrates, and peat moss, as indicated in Table 148.10, and to other cargoes that exhibit the potential for liquefaction as indicated by information provided to the master in accordance with 97.12–3. The proposed rules would not apply to shipments by unmanned barges or cargoes of coal that have an average particle size of 10 mm (0.394 in) or greater. The moisture content and TML may be determined using test procedures in Appendix 2 of the IMSBC Code.

C. Distribution Table for Part 148

The Coast Guard proposes to replace existing Part 148 with a completely revised and renumbered Part 148. The following distribution table shows which sections of the proposed rule address the substance of each existing section.

Former section	Replaced by section:
148.01–1 .....	1 148.1, .2, .3.
148.01–7 .....	148.10.
148.01–9 .....	148.15, .20, .21.
148.01–11 .....	148.25, .26.
148.01–13 .....	148.12.
148.01–15 .....	148.9.
148.02–1 .....	148.60, .61, .62.
148.02–3 .....	148.70, .71, .72.
148.02–5 .....	148.115.
148.03–1 .....	148.50.
148.03–5 .....	148.80.

Former section	Replaced by section:
148.03-7 .....	148.100.
148.03-11 .....	Subpart D.
148.03-13 .....	148.110.
148.04-1 .....	148.300.
148.04-9 .....	148.265.
148.04-13 .....	148.260.
148.04-15 .....	148.295.
148.04-17 .....	148.295.
148.04-19 .....	148.320.
148.04-20 .....	148.315.
148.04-21 .....	148.130(a)(4) and (c).
148.04-23 .....	148.230.

**VI. Incorporation by Reference**

Material proposed for incorporation by reference appears in § 148.8 of the proposed rule. You may inspect this material at U.S. Coast Guard Headquarters where indicated under **ADDRESSES**. Copies of the material are available from the sources listed in § 148.8.

Before publishing a binding rule, we will submit this material to the Director of the Federal Register for approval of the incorporation by reference.

**VII. Regulatory Analyses**

We developed this proposed rule after considering numerous statutes and executive orders related to rulemaking. Below we summarize our analysis based on 13 of these statutes or executive orders.

*A. Regulatory Planning and Review*

This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, 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 (OMB) has not reviewed it under that Order.

A combined “Preliminary Regulatory Assessment and Initial Regulatory Flexibility Analysis” report discussing the impact of this proposed rule is available in the docket where indicated under **ADDRESSES**. A summary of the report follows:

The Coast Guard proposes to harmonize its regulations with recent

IMO amendments to Chapter VI and Chapter VII of SOLAS that make the IMSBC Code mandatory for operations involving handling and carriage of solid bulk cargoes by vessel. The amendments require that all vessels subject to SOLAS that carry bulk solid cargoes other than grain to comply with the IMSBC Code. This proposed rule also would amend the Coast Guard regulations governing the carriage of solid hazardous materials in bulk to allow use of the IMSBC as an equivalent form of compliance. Proposed changes to the Coast Guard regulations would also expand the list of solid hazardous materials authorized for bulk transportation by vessel and include special handling procedures based on the IMSBC Code and existing special permits. These proposed changes would reduce the need for the current special permits required for the carriage of certain solid hazardous materials in bulk and result in a cost savings to industry.

The IMSBC Code facilitates safe stowage and shipment of solid bulk cargoes. It provides information on the dangers associated with shipping certain types of solid bulk cargoes and instructions on procedures for handling said cargoes. The IMSBC Code will be mandatory under the amendments to the SOLAS Convention as of January 1, 2011.

**Affected Population**

Based on information from the Coast Guard’s Marine Information for Safety and Law Enforcement (MISLE) data system, we estimate the proposed rule would affect approximately 115 vessels, consisting of 75 U.S. vessels in coastwise service and 40 U.S. vessels operating under SOLAS that ship hazardous solid cargoes in bulk.

**Costs**

We estimate the proposed rule would result in additional equipment, training, and operating costs to industry. Under the provisions of this proposed rule, each vessel would be required to have onboard non-sparking fans, an oxygen meter, a carbon monoxide meter, a

temperature probe, two SCBA, goggles and a dust mask, and a multi-gas detector. We estimate that industry would incur equipment costs during the implementation period (Year 1) of \$2.7 million undiscounted. We also estimate there will be annual recurring costs due to equipment maintenance and replacement (see the Preliminary Regulatory Analysis report available in the docket for additional details).

The use of the equipment described above would require additional training. We estimate industry would incur initial training costs in the first year of \$33,900 and annual recurring training costs due to labor turnover of about \$6,800 each year thereafter (estimates undiscounted). Operating costs would consist of testing, recording keeping, and vessel preparation. The equipment described above would be used to periodically test the temperature and atmospheric conditions of certain cargoes. All tests and readings must be recorded, and the date and time of testing recorded in the vessel’s log book. We estimate industry would incur an annual recurring operating cost of \$7.4 million undiscounted.

**Cost Savings**

This proposed rule would also result in cost savings to certain vessels, as preparation of permit renewals will no longer be needed. We estimate this regulation would reduce the need for ten permit requests per year. Based on information provided in the OMB-approved Information Collection Request (Carriage of Bulk Solid Materials Requiring Special Handling: 1625-0025), annual cost savings for both industry and government are estimated at \$15,390 undiscounted.

Table 1 below provides the net costs (adjusted for savings) of this proposed rule. We estimate the undiscounted first-year cost of the rulemaking to be about \$10.1 million. Over a 10-year period, the total present value costs of the proposed rule would be \$57.2 million at a 7 percent discount rate and \$69.3 million at a 3 percent discount rate.

**TABLE 1—TOTAL 10-YEAR COSTS**  
[2009 dollars in millions]

Year	Undiscounted costs	Present value discounted costs	
		7%	3%
1 .....	10.1	9.5	9.8
2 .....	7.5	6.5	7.0
3 .....	7.6	6.2	7.0
4 .....	7.5	5.7	6.7
5 .....	9.1	6.5	7.9

TABLE 1—TOTAL 10-YEAR COSTS—Continued  
[2009 dollars in millions]

Year	Undiscounted costs	Present value discounted costs	
		7%	3%
6	7.5	5.0	6.3
7	7.6	4.7	6.2
8	7.5	4.4	5.9
9	7.6	4.1	5.8
10	9.0	4.6	6.7
Total	81.0	57.2	69.3

**Note:** Totals include cost savings.

**Benefits**

In this rulemaking, the Coast Guard anticipates that benefits would include a reduction in the risks associated with off-gassing and self-heating cargoes. These proposed standards are comprehensive safety requirements that would align with international regulations (the IMSBC Code), and are intended to increase information dissemination regarding the safe handling of hazardous cargoes.

These safety standards would extend to all U.S.-flagged vessels carrying hazardous bulk solid cargoes. A lack of safe handling of hazardous cargoes, such as coal or wood, can cause combustion of cargoes and the release of gases that could result in the loss of life, injuries, and property damage, among others. The proposed rule would also improve the efficiency of government by reducing the administrative costs associated with special permit applications.

*B. Small Entities*

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered whether this proposed rule would 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.

A combined “Preliminary Regulatory Assessment and Initial Regulatory Flexibility Analysis” report discussing the impact of this proposed rule on small entities is available in the docket where indicated under the “Public Participation and Request for Comments” section of this preamble. A summary of this report follows:

For this proposed rule, we reviewed size and ownership data of affected entities by using the Coast Guard’s

MISLE database and public and proprietary data sources for company revenue and employee size data. We determined that 86 entities own the 115 vessels that would be impacted by this regulation. We found revenue and employment information on 33 of the 86 entities. We found that all affected entities would be businesses. Among these, eight would be considered small entities under the Small Business Administration (SBA) standard. We take a conservative approach by assuming vessels listed as “unspecified” and those with no available information are small (of which there are 52). Therefore, we estimate that 70 percent of the entities meet the SBA standards of a small entity.

Using the highest single year cost (Year 1) in the Total 10-Year Costs table above, we estimate that 75 percent of the small entities would have an annual cost impact of greater than or equal to 3 percent of annual revenue.

If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that the proposed regulation will have a significant economic impact on it, please submit a comment to the Docket Management Facility at the address under **ADDRESSES**. In your comment, explain why you think it qualifies and how and to what degree this proposed rule will economically affect it.

*C. Assistance for Small Entities*

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule so that they can better evaluate its effects on them and participate in the rule. If the proposed rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please contact Richard Bornhorst at the telephone number or e-

mail address indicated under the **FOR FURTHER INFORMATION CONTACT** section of this notice. The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce or otherwise determine compliance with Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency’s responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247).

*D. Collection of Information*

This proposed rule would revise an existing collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). As defined in 5 CFR 1320.3(c), “collection of information” comprises reporting, recordkeeping, monitoring, posting, labeling, and other similar actions. The title and description of the information collection, a description of those who must collect the information, and an estimate of the change in annual burden follow. The estimated change covers the time for preparing or renewing permit requests for hazardous solid bulk cargoes.

Under the conditions of the proposed rule, vessels and barge companies would no longer submit special permit renewal requests to the U.S. Coast Guard. Handling requirements related to previously permitted cargoes would be part of 46 CFR part 148. Eliminating these permits would reduce the burden associated with 1625–0025 by reducing the number of respondents, responses, and burden hours associated with permits requests.

*Title:* Carriage of Bulk Solid Materials Requiring Special Handling.



OMB Control Number: 1625–0025.

*Summary of the Collection of*

*Information:* The U.S. Coast Guard administers and enforces the law, regulations, and international conventions for the safe transportation and stowage of hazardous materials, including bulk solids. Consequently, the Coast Guard is authorized to issue special permits for the handling of hazardous solid bulk cargo as part of its missions to ensure maritime safety and facilitate U.S. commerce. In addition to special permits, this collection of information also authorizes the preparation and display of shipping papers and cargo manifests. However, the proposed rule will change only the burden estimates associated with special permits.

*Need for Information:* The Special Permits allow the Coast Guard to control the conditions under which shipments of hazardous materials can be made, while giving the shipping industry a greater amount of flexibility than would be afforded without the Special Permit provision. If the required information were not submitted, the Coast Guard would be unable to issue Special Permits with adequate precautions for shipping the cargo, and thus could not permit shipment.

*Proposed Use of Information:* The Coast Guard uses this information to make a well-informed determination as to the severity of the hazard posed by the material in question. This information allows the Coast Guard to set specific guidelines for safe carriage or, if determined that a material presents too great a hazard, to deny permission for shipping the material.

*Description of the Respondents:* The respondents are owners and operators of bulk carrier vessels and barges carrying hazardous solid cargo.

*Number of Respondents:* The existing OMB-approved number of respondents for this collection, including permit requests, shipping papers, and cargo manifest, is 583. We estimate the number of respondents will decrease by seven as the proposed rule eliminates the need for all but one special permit. The total number of respondents would be 576.

*Number of Responses:* The existing OMB-approved number of responses is 771. The proposed rule would decrease that number by 10. The total number of responses would be 761 per year as a result of a decrease in special permit requests.

*Frequency of Response:* The proposed regulation will not alter the frequency of response for permits that remain active. Since this regulation does not impact shipping papers or cargo manifests,

frequency of responses for those items remain unchanged.

*Burden of Response:* The estimated burden for preparation of a permit request remains at 15 hours per permit.

*Estimate of Total Annual Burden:* This regulation will eliminate the need for all but one of the special permits associated with this collection of information. Therefore, the annual burden associated with special permits will decline from 165 hours to 15 hours. The total burden for the collection of information, including cargo manifests and shipping papers, decreases from 895 hours to 745 hours per year.

*Reason for Change:* The decrease in burden is the result of a program change that eliminates the need for most of the special permits in this collection of information.

As required by the Paperwork Reduction Act of 1995 (44 USC 3507(d)), we have submitted a copy of this proposed rule to the OMB for its review of the collection of information.

We ask for public comment on the proposed collection of information to help us determine how useful the information is; whether it can help us perform our functions better; whether it is readily available elsewhere; how accurate our estimate of the burden of collection is; how valid our methods for determining burden are; how we can improve the quality, usefulness, and clarity of the information; and how we can minimize the burden of collection.

If you submit comments on the collection of information, submit them both to OMB and to the Docket Management Facility where indicated under **ADDRESSES**, by the date under **DATES**.

You need not respond to a collection of information unless it displays a currently valid control number from OMB. Before the requirements for this collection of information become effective, we will publish a notice in the **Federal Register** of OMB's decision to approve, modify, or disapprove the collection.

#### *E. Federalism*

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt state law or impose a substantial direct cost of compliance on them.

It is well settled that States may not regulate in categories reserved for regulation by the Coast Guard. It is also well settled, now, that all of the categories covered in 46 U.S.C. 3306, 3703, 7101, and 8101 (design, construction, alteration, repair,

maintenance, operation, equipping, personnel qualification, and manning of vessels), as well as the reporting of casualties and any other category in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, are within the field foreclosed from regulation by the States. (See the decision of the Supreme Court in the consolidated cases of *United States v. Locke* and *Intertanko v. Locke*, 529 U.S. 89 (Mar. 6, 2000)).

This proposed rule includes requirements under which certain solid materials requiring special handling may be transported in bulk by vessel. The revised regulations apply to all domestic and foreign vessels in the navigable waters of the United States that transport bulk solid materials requiring special handling. The authority to establish such regulations for vessels operating in the navigable waters of the United States has been committed to the Coast Guard by Federal statutes. Furthermore, since vessels tend to move from port to port in the national and international marketplace, the safety standards included in this rule are of national scope to avoid burdensome variances. Therefore, the Coast Guard intends this rule to preempt state action addressing the same subject matter.

Because the states may not regulate within this category, preemption considerations set forth in Executive Order 13132 are not applicable.

#### *F. Unfunded Mandates Reform Act*

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any 1 year. Though this proposed rule would not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

#### *G. Taking of Private Property*

This proposed rule would not cause a taking of private property or otherwise have taking implications under Executive Order 12630, Government Actions and Interference with Constitutionally Protected Property Rights.

#### *H. Civil Justice Reform*

This proposed rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation,

eliminate ambiguity, and reduce burden.

#### *I. Protection of Children*

We have analyzed this proposed rule under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

#### *J. Indian Tribal Governments*

This proposed rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

#### *K. Energy Effects*

We have analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a "significant energy action" under that order because it is not a "significant regulatory action" under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The Administrator of the Office of Information and Regulatory Affairs has not designated it as a significant energy action. Therefore, it does not require a Statement of Energy Effects under Executive Order 13211.

#### *L. Technical Standards*

The National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through the Office of Management and Budget, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This proposed rule incorporates by reference the IMSBC Code, which was developed by the IMO as a voluntary consensus standard. The proposed

sections that reference this voluntary consensus standard and the locations where this standard is available are listed in the proposed 46 CFR 148.8.

#### *M. Environment*

We have analyzed this proposed rule under Department of Homeland Security Directive 023-01 and Commandant Instruction M16475.ID, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321-4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. Therefore, this rule is categorically excluded under section 2.B.2. Figure 2-1, paragraphs 34(c), (d), and (e), of the Instruction, and neither an environmental assessment nor an environmental impact statement is required. This rule affects crew training, inspection and equipping of vessels, equipment approval and carriage requirements. A preliminary "Environmental Analysis Check List" supporting this determination is available in the docket where indicated under the "Public Participation and Request for Comments" section of this preamble. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

#### **List of Subjects**

##### *46 CFR Part 97*

Cargo vessels, Marine safety, Navigation (water), and Reporting and recordkeeping requirements.

##### *46 CFR Part 148*

Cargo vessels, Hazardous materials transportation, and Marine safety.

For the reasons discussed in the preamble, the Coast Guard proposes to amend 46 CFR parts 97 and 148 as follows:

#### **PART 97—OPERATIONS**

1. The authority citation for Part 97 is revised to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3306, 5111, 6101; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757; 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

2. Revise Subpart 97.12, consisting of §§ 97.12-1 through 97.12-5, to read as follows:

##### **Subpart 97.12—Bulk Solid Cargoes**

Sec.

- 97.12-1 Definition of a bulk solid cargo.
- 97.12-3 Guidance for the master.
- 97.12-5 Bulk solid cargoes that may liquefy.

##### **§ 97.12-1 Definition of a bulk solid cargo.**

- (a) A bulk solid cargo—
  - (1) Consists of particles, granules, or larger pieces of material generally uniform in composition;
  - (2) Is not grain; and
  - (3) Is loaded directly into a vessel's cargo space with no intermediate form of containment.

(b) Additional requirements for bulk solid materials needing special handling are contained in Part 148 of this chapter.

##### **§ 97.12-3 Guidance for the master.**

(a) The owner or operator of a vessel must provide the master with safe loading and stowage information for each bulk solid cargo that vessel will carry.

(b) The shipper of a bulk solid cargo, as defined in § 148.3 of this chapter, must provide the master of a vessel with information regarding the nature of the cargo in advance of loading operations. Additional requirements in § 148.60 of this chapter may also apply.

##### **§ 97.12-5 Bulk solid cargoes that may liquefy.**

If the information provided in § 97.12-3(a) or (b) indicates that the bulk solid cargo to be carried is prone to liquefy during carriage, due to small particle sizes and moisture content, then the requirements contained in § 148.450 of this chapter apply.

3. Revise § 97.55-1 to read as follows:

##### **§ 97.55-1 Master's responsibility.**

Before loading bulk grain or any bulk solid cargo to which § 148.435 of this chapter applies, the master shall have the lighting circuits to cargo compartments in which the grain or bulk solid cargo is to be loaded de-energized at the distribution panel or panel board. He shall thereafter have periodic inspections made of the panel or panel board as frequently as necessary to ascertain that the affected circuits remain de-energized while this bulk cargo remains within the vessel.

4. Revise Part 148 to read as follows:

#### **PART 148—CARRIAGE OF BULK SOLID MATERIALS THAT REQUIRE SPECIAL HANDLING**

Sec.

##### **Subpart A—General**

- 148.1 Purpose and applicability.
- 148.2 Responsibility and compliance.
- 148.3 Definitions.
- 148.5 Alternative procedures.
- 148.7 OMB control numbers assigned under the Paperwork Reduction Act.

- 148.8 Incorporation by reference.
- 148.9 Right of appeal.
- 148.10 Permitted materials.
- 148.11 Hazardous or potentially dangerous characteristics
- 148.12 Assignment and certification.

#### Subpart B—Special Permits

- 148.15 Petition for a special permit.
- 148.20 Deadlines for submission of petition and related requests.
- 148.21 Necessary information.
- 148.25 Activities covered by a special permit.
- 148.26 Standard conditions for special permits.
- 148.30 Records of special permits issued.

#### Subpart C—Minimum Transportation Requirements

- 148.50 Cargoes subject to this subpart.
- 148.51 Temperature readings.
- 148.55 International shipments.
- 148.60 Shipping papers.
- 148.61 Emergency response information.
- 148.62 Location of shipping papers and emergency response information.
- 148.70 Dangerous cargo manifest; general.
- 148.71 Information included in the dangerous cargo manifest.
- 148.72 Dangerous cargo manifest; exceptions.
- 148.80 Supervision of cargo transfer.
- 148.85 Required equipment for confined spaces.
- 148.86 Confined space entry.
- 148.90 Preparations before loading.
- 148.100 Log book entries.
- 148.110 Procedures followed after unloading.
- 148.115 Report of incidents.

#### Subpart D—Stowage and Segregation

- 148.120 Stowage and segregation requirements.
- 148.125 Stowage and segregation for materials of Class 4.1.
- 148.130 Stowage and segregation for materials of Class 4.2.
- 148.135 Stowage and segregation for materials of Class 4.3.
- 148.140 Stowage and segregation for materials of Class 5.1.
- 148.145 Stowage and segregation for materials of Class 7.
- 148.150 Stowage and segregation for materials of Class 9.
- 148.155 Stowage and segregation for potentially dangerous materials.

#### Subpart E—Special Requirements for Certain Materials

- 148.200 Purpose.
- 148.205 Ammonium nitrate and ammonium nitrate fertilizers.
- 148.220 Ammonium nitrate-phosphate fertilizers.
- 148.225 Calcined pyrites (pyritic ash, fly ash).
- 148.227 Calcium nitrate fertilizers.
- 148.230 Calcium oxide (lime, unslaked).
- 148.235 Castor beans.
- 148.240 Coal.
- 148.242 Copra.
- 148.245 Direct reduced iron (DRI); lumps, pellets, and cold-molded briquettes.

- 148.250 Direct reduced iron (DRI); hot-molded briquettes.
- 148.255 Ferrosilicon, aluminum ferrosilicon, and aluminum silicon containing more than 30% but less than 90% silicon.
- 148.260 Ferrous metal.
- 148.265 Fish meal or fish scrap.
- 148.270 Hazardous substances.
- 148.275 Iron oxide, spent; iron sponge, spent.
- 148.280 Magnesia, unslaked (lightburned magnesia, calcined magnesite, caustic calcined magnesite).
- 148.285 Metal sulfide concentrates.
- 148.290 Peat moss.
- 148.295 Petroleum coke, calcined or uncalcined, at 55 °C (131 °F) or above.
- 148.300 Radioactive materials.
- 148.310 Seed cake.
- 148.315 Sulfur.
- 148.320 Tankage; garbage tankage; rough ammonia tankage; or tankage fertilizer.
- 148.325 Wood chips; wood pellets; wood pulp pellets.
- 148.330 Zinc ashes; zinc dross; zinc residues; zinc skimmings.

#### Subpart F—Additional Special Requirements

- 148.400 Applicability.
- 148.405 Sources of ignition.
- 148.407 Smoking.
- 148.410 Fire hoses.
- 148.415 Toxic gas analyzers.
- 148.420 Flammable gas analyzers.
- 148.435 Electrical circuits in cargo holds.
- 148.445 Adjacent spaces.
- 148.450 Cargoes subject to liquefaction.

**Authority:** 33 U.S.C. 1602; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 46 U.S.C. 3306, 5111; 49 U.S.C. 5103; Department of Homeland Security Delegation No. 0170.1.

#### Subpart A—General

##### § 148.1 Purpose and applicability.

(a) This part prescribes special handling procedures for certain solid materials that present hazards when transported in bulk by vessel.

(b) Except as noted in paragraph (c) of this section, this part applies to all domestic and foreign vessels in the navigable waters of the U.S that transport bulk solid materials requiring special handling.

(c) This part does not apply to an unmanned barge on a domestic voyage carrying a Potentially Dangerous Material (PDM) found in Table 148.10 of this part. All barges on international voyages must follow the requirements for PDM.

(d) The regulations in this part have preemptive impact over State law on the same subject. The Coast Guard has determined, after considering the factors developed by the Supreme Court in *U.S. v. Locke*, 529 U.S. 89 (2000), that in directing the Secretary to regulate the safe transportation of hazardous

material and the safety of individuals and property on board vessels subject to inspection, as well as the provision of loading information, Congress intended to preempt the field of safety standards for solid materials requiring special handling when transported in bulk on vessels.

##### § 148.2 Responsibility and compliance.

Each master of a vessel, person in charge of a barge, owner, operator, shipper, charterer, or agent must ensure compliance with this part. These persons are also responsible for communicating requirements to every person performing any function covered by this part.

##### § 148.3 Definitions.

As used in this part—

*A-60 class division* means a division as defined in § 32.57-5 of this chapter.

*Adjacent space* means any enclosed space on a vessel, such as a cargo hold, cargo compartment, accommodation space, working space, storeroom, passageway, or tunnel, that shares a common bulkhead or deck with a hatch, door, scuttle, cable fitting or other penetration, with a cargo hold or compartment containing a material listed in Table 148.10 of this part.

*Away from* means a horizontal separation of at least 3 meters (10 feet) projected vertically is maintained between incompatible materials carried in the same hold or on deck.

*Bulk* applies to any solid material, consisting of a combination of particles, granules, or any larger pieces of material generally uniform in composition, that is loaded directly into the cargo spaces of a vessel without any intermediate form of containment.

*Bulk Cargo Shipping Name* or *BCSN* identifies a bulk solid material during transport by sea. When a cargo is listed in this Part, the BCSN of the cargo is identified by Roman type and is listed in Column 1 of Table 148.10 of this part. When the cargo is a hazardous material, as defined in 49 CFR part 173, the proper shipping name of that material is the BCSN.

*Cold-molded briquettes* are briquettes of direct reduced iron (DRI) that have been molded at a temperature of under 650 °C (1202 °F) or that have a density of under 5.0 g/cm<sup>3</sup>.

*Commandant (CG-5223)* means the Chief, Hazardous Materials Standards Division of the Office of Operating and Environmental Standards, United States Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126. CG-5223 can be contacted at 202-372-1420 or [Hazmat@comdt.uscg.mil](mailto:Hazmat@comdt.uscg.mil).

*Compartment* means any space on a vessel that is enclosed by the vessel's decks and its sides or permanent steel bulkheads.

*Competent authority* means a national agency responsible under its national law for the control or regulation of a

particular aspect of the transportation of hazardous materials.

*Confined space* means a cargo hold containing a material listed in Table 148.10 of this part or an adjacent space not designed for human occupancy.

*Domestic voyage* means transportation between places within the United States other than through a foreign country.

*Hazard class* means the category of hazard assigned to a material under this part and 49 CFR parts 171 through 173.

HAZARD CLASS DEFINITIONS—HAZARD CLASSES USED IN THIS PART ARE DEFINED IN THE FOLLOWING SECTIONS OF TITLE 49

Class No.	Division No. (if any)	Description	Reference (49 CFR)
1	1.1, 1.2, 1.3, 1.4, 1.5, 1.6	Explosives	§ 173.50.
2	2.1, 2.2, 2.3	Flammable Gas, Non-Flammable Compressed Gas, Poisonous Gas	§ 173.115.
3		Flammable and Combustible Liquid	§ 173.120.
4	4.1, 4.2, 4.3	Flammable Solid, Spontaneously Combustible Material, Dangerous When Wet Material	§ 173.124.
5	5.1	Oxidizer	§ 173.127.
5	5.2	Organic Peroxide	§ 173.128.
6	6.1	Poisonous Materials	§ 173.132.
6	6.2	Infectious Substance	§ 173.134.
7		Radioactive Material	§ 173.403.
8		Corrosive Material	§ 173.136.
9		Miscellaneous Hazardous Material	§ 173.140.

*Hazardous substance* is a hazardous substance as defined in 49 CFR 171.8.

*Hold* means a compartment below deck that is used exclusively for the stowage of cargo.

*Hot-molded briquettes* are briquettes of DRI that have been molded at a temperature of 650 °C (1202 °F) or higher, and that have a density of 5.0 g/cm<sup>3</sup> (312 lb/ft<sup>3</sup>) or greater.

*IMSBC Code* means the English version of the "International Maritime Solid Bulk Cargoes Code" published by the International Maritime Organization (incorporated by reference, see § 148.8).

*Incompatible materials* means two materials whose stowage together may result in undue hazards in the case of leakage, spillage, or other accident.

*International voyage* means voyages—

(1) Between any place in the United States and any place in a foreign country;

(2) Between places in the United States through a foreign country; or

(3) Between places in one or more foreign countries through the United States.

*Lower flammability limit* or *LFL* means the lowest concentration of a material or gas that will propagate a flame. The LFL is usually expressed as a percent by volume of a material or gas in air.

*Master* means the officer having command of a vessel. The functions assigned to the master in this part may also be performed by a representative of the master or by a person in charge of a barge.

*Material safety data sheet* or *MSDS* is as defined in 29 CFR 1910.1200.

*Person in charge of a barge* means an individual designated by the owner or operator of a barge to have charge of the barge.

*Potentially dangerous material* or *PDM* means a material that does not fall into a particular hazard class but can present a danger when carried in bulk aboard a vessel. The dangers often result from the material's tendency to self-heat or cause oxygen depletion. Materials that present a potential danger due solely to their tendency to shift in the cargo hold are not PDMs. For international shipments prepared in accordance with the IMSBC Code (incorporated by reference, see § 148.8), equivalent terminology to PDM is Material Hazardous only in Bulk (MHB).

*Readily combustible material* means a material that may not be a hazardous material but that can easily ignite and support combustion. Examples are wood, straw, vegetable fibers, and products made from these materials, and coal lubricants and oils. The term does not include packaging material or dunnage.

*Reportable quantity* or *RQ* means the quantity of a hazardous substance spilled or released that requires a report to the National Response Center. The specific RQs for each hazardous substance are available in 49 CFR 172.101, Appendix A.

*Responsible person* means a knowledgeable person who the master of a vessel or owner or operator of a barge makes responsible for all decisions relating to his or her specific task.

*Seed cake* means the residue remaining after vegetable oil has been

extracted by a solvent or mechanical process from oil-bearing seeds, such as coconuts, cotton seed, peanuts, and linseed.

*Shipper* means any person by whom, or in whose name, or on whose behalf, a contract of carriage of goods by sea has been concluded with a carrier; or any person by whom or in whose name, or on whose behalf, the goods are actually delivered to the carrier in relation to the contract of carriage by sea.

*Shipping paper* means a shipping order, bill of lading, manifest, or other shipping document serving a similar purpose.

*Stowage factor* means the volume in cubic meters of 1,000 kilograms (0.984 long tons) of a bulk solid material.

*Threshold limit value* or *TLV* means the time-weighted average concentration of a material that the average worker can be exposed to over a normal eight-hour working day, day after day, without adverse effect. This is a trademark term of the American Conference of Governmental Industrial Hygienists (ACGIH).

*Transported* includes the various operations associated with cargo transportation, such as loading, off-loading, handling, stowing, carrying, and conveying.

*Trimming* means any leveling of a cargo within a cargo hold or compartment, either partial or total.

*Tripartite agreement* means an agreement between the national administrations of the port of loading, the port of discharge, and the flag state of the vessel, on the conditions of carriage of a cargo.

*Ventilation* means exchange of air from outside to inside a cargo space and includes the following types:

(1) *Continuous ventilation* means ventilation that is operating at all times. Continuous ventilation may be either natural or mechanical;

(2) *Mechanical ventilation* means power-generated ventilation;

(3) *Natural ventilation* means ventilation that is not power-generated; and

(4) *Surface ventilation* means ventilation of the space above the cargo. Surface ventilation may be either natural or mechanical.

*Vessel* means a cargo ship or barge.

**§ 148.5 Alternative procedures.**

(a) The Commandant (CG-5223) may authorize the use of an alternative procedure, including exemptions to the IMSBC Code (incorporated by reference, see § 148.8), in place of any requirement of this part if it is demonstrated to the satisfaction of the Coast Guard that the requirement is impracticable or unnecessary and that an equivalent level of safety can be maintained.

(b) Each request for authorization of an alternative procedure must—

- (1) Be in writing;
- (2) Name the requirement for which the alternative is requested; and
- (3) Contain a detailed explanation of—
  - (i) Why the requirement is impractical or unnecessary; and
  - (ii) How an equivalent level of safety will be maintained.

**§ 148.7 OMB control numbers assigned under the Paperwork Reduction Act.**

The information collection requirements in this part are approved by the Office of Management and Budget, and assigned OMB control number 1625-0025.

**§ 148.8 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at

the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to [http://www.archives.gov/federal-register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal-register/code_of_federal_regulations/ibr_locations.html). Also, it is available for inspection at the U.S. Coast Guard Hazardous Materials Standards Division (CG-5223), 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126, and is available from the sources listed below.

(b) International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom, +44 (0)20 7735 7611, <http://www.imo.org>.

(1) International Maritime Solid Bulk Cargoes Code (IMSBC Code) 2009 English edition, incorporation by reference approved for §§ 148.3; 148.5; 148.15; 148.55; 148.205; 148.220; 148.240; 148.450.

(2) [Reserved]

(c) United Nations Publications, Sales Office and Bookshop, Bureau E4, CH-1211 Geneva 10, Switzerland, (800) 253-9646, <http://unp.un.org>.

(1) UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fifth revised edition (2009), incorporation by reference approved for §§ 148.205, 148.220.

(2) [Reserved]

**§ 148.9 Right of appeal.**

Any person directly affected by enforcement of this part by or on behalf of the Coast Guard may appeal the decision or action under Subpart 1.03 of this chapter.

**§ 148.10 Permitted materials.**

(a) A material listed in Table 148.10 of this section may be transported as a bulk solid cargo on a vessel if it is carried according to this part. A material that is not listed in Table 148.10 of this section, but which is hazardous or a potentially dangerous material (PDM), requires a Special Permit under § 148.15 to be transported on the navigable waters of the United States.

(b) For each listed material, Table 148.10 identifies the hazard class and gives the BCSN or directs the user to the preferred BCSN. In addition, the table lists specific hazardous or potentially dangerous characteristics associated

with each material and specifies or references detailed special requirements in this part pertaining to the stowage or transport of specific bulk solid materials. The column descriptions for Table 148.10 are defined as follows:

(1) *Column 1: Bulk Solid Material Descriptions and Bulk Cargo Shipping Names (BCSN)*. Column 1 lists the bulk solid material descriptions and the BCSNs of materials designated as hazardous or PDM. BCSNs are limited to those shown in Roman type. Trade names and additional descriptive text are shown in italics.

(2) *Column 2: I.D. Number*. Column 2 lists the identification number assigned to each BCSN associated with a hazardous material. Those preceded by the letters “UN” are associated with BCSNs considered appropriate for international voyages as well as domestic voyages. Those preceded by the letters “NA” are associated with BCSNs not recognized for international voyages, except to and from Canada.

(3) *Column 3: Hazard Class or Division*. Column 3 designates the hazard class or division, or PDM, as appropriate, corresponding to each BCSN.

(4) *Column 4: References*. Column 4 refers the user to the preferred BCSN corresponding to bulk solid material descriptions listed in Column 1.

(5) *Column 5: Hazardous or Potentially Dangerous Characteristics*. Column 5 specifies codes for hazardous or potentially dangerous characteristics applicable to specific hazardous materials or PDMs. Refer to § 148.11 for the meaning of each code.

(6) *Column 6: Other Characteristics*. Column 6 contains other pertinent characteristics applicable to specific bulk solid materials listed in Column 1.

(7) *Column 7: Special Requirements*. Column 7 specifies the applicable sections of Part 148 of this chapter that contain detailed special requirements pertaining to stowage and/or transportation of specific bulk solid materials in this part. This column is completed in a manner which indicates that “§ 148.” precedes the designated numerical entry.

(c) The following requirements apply to combinations of bulk solids carried at the same time and in the same compartment or hold:

Combinations of bulk solid materials	Requirements
(1) Material listed in Table 148.10 carried with any other non-hazardous bulk solid material.	Requirements specified in Table 148.10 for the listed material.
(2) Material carried under Special Permit with any non-hazardous bulk solid material.	Requirements specified in the Special Permit.
(3) Two or more materials listed in Table 148.10 .....	Must apply for a Special Permit.

(d) An owner, agent, master, operator, or person in charge of a vessel or barge carrying materials listed in Table 148.10 of this section must follow the requirements contained in 46 CFR part 4 for providing notice and reporting of marine casualties and retaining voyage records.

TABLE 148.10—BULK SOLID HAZARDOUS MATERIALS TABLE

Bulk solid material descriptions and bulk cargo shipping names (1)	I.D. number (2)	Hazard class or division (3)	References (4)	Hazardous or potentially dangerous characteristics (see § 148.11) (5)	Other characteristics (6)	Special requirements (§ 148.***) (7)
Aluminum Ferrosilicon Powder.	UN1395	4.3, 6.1		2, 3	Fine powder or briquettes.	135, 255, 405(b), 407, 415(a) & (e), 420(b), 445
Aluminum Nitrate	UN1438	5.1		4	Colorless or white crystals.	140
Aluminum Silicon Powder, Uncoated.	UN1398	4.3		2, 3		135, 255, 405(b), 407, 415(a) & (e), 420(b), 445
Aluminum Smelting By-products or Aluminum Re-melting Byproducts.	UN3170	4.3		1, 2, 3	Includes aluminum dross, residues, spent cathodes, spent potliner, and skimmings.	135, 405(b), 420(b), 445
Ammonium Nitrate	UN1942	5.1		5, 27		140, 205, 405(a), 407, 410
Ammonium Nitrate Based Fertilizer.	UN2067	5.1		5, 27		140, 205, 405(a), 407, 410
Ammonium Nitrate Based Fertilizer.	UN2071	9		6	Nitrogen, Phosphate, or Potash.	140, 220, 405(a), 407
Barium Nitrate	UN1466	5.1, 6.1		4, 7		140
Brown Coal Briquettes		PDM		11, 12, 14, 25		155, 240, 405(b), 407, 415(b), 420(a), 445
Calcium fluoride			See Fluorosp-ar.			
Calcium Nitrate	UN1454	5.1		4	White crystals or powder.	140, 227
Calcium Oxide			See Lime, Unslaked.			
Castor Beans	UN2969	9		10	Whole beans	150, 235
Charcoal		PDM		1, 11, 12	Screenings, briquettes	155
Chili Saltpeter			See Sodium Nitrate.			
Chilean Natural Nitrate			See Sodium Nitrate.			
Coal		PDM		11, 12, 13, 14, 25		155, 240, 405(b), 407, 415(b), 420(a) & (c), 445, 450
Copra	UN1363	4.2		11, 12	Dry	130, 242
Direct reduced iron (A) with not more than 5% fines.		PDM		1, 2, 12	Hot-molded briquettes	155, 250, 420(b)
Direct reduced iron (B) with not more than 5% fines.		PDM		1, 2, 12	Lumps, pellets, and cold-molded briquettes.	155, 245, 405(b), 407, 420(b), 445
Environmentally Hazardous Substances, Solid, n.o.s..	UN3077	9	Hazardous substances listed in 40 CFR part 302.	15		150, 270
Ferrophosphorous		PDM		2, 3	Including briquettes	155, 415(e), 445
Ferrosilicon with 30–90% silicon.	UN1408	4.3, 6.1		2, 3		135, 255, 405(b), 407, 415(a) & (e), 420(b), 445
Ferrosilicon with 25%–30% silicon or 90% or more silicon.		PDM				155, 255, 405(b), 407, 415 (a) & (e), 420(b), 445

TABLE 148.10—BULK SOLID HAZARDOUS MATERIALS TABLE—Continued

Bulk solid material descriptions and bulk cargo shipping names (1)	I.D. number (2)	Hazard class or division (3)	References (4)	Hazardous or potentially dangerous characteristics (see § 148.11) (5)	Other characteristics (6)	Special requirements (§ 148.***) (7)
<i>Ferrous Sulfate</i> .....	.....	.....	See Environmentally Hazardous Substances, Solid, n.o.s.			
Ferrous Metal Borings, Shavings, Turnings, or Cuttings.	UN2793 .....	4.2 .....	.....	11, 12 .....	.....	130, 260
Fish Meal Stabilized or Fish Scrap, Stabilized.	UN2216 .....	9 .....	.....	11, 12 .....	Ground and pelletized (mixture), anti-oxidant treated.	150, 265
Fluorospar .....	.....	PDM .....	.....	8, 24 .....	.....	155, 440(a), 450
<i>Garbage Tankage</i> .....	.....	.....	See Tankage.			
Iron Oxide, Spent or Iron Sponge, Spent. <i>Iron Swarf</i> .....	UN1376 .....	4.2 .....	.....	3, 11, 12, 14 .....	.....	130, 275, 415(c), (d) & (f), 445
.....	.....	.....	See Ferrous Metal Borings, Shavings, Turnings, or Cuttings.			
Lead Nitrate .....	UN1469 .....	5.1, 6.1 .....	.....	4, 7, 22, 26 .....	.....	140, 270
<i>Lignite</i> .....	.....	.....	See Brown Coal Briquettes.			
Lime, Unslaked .....	.....	PDM .....	.....	1 .....	.....	155, 230
Linted Cotton Seed containing not more than 9% moisture and not more than 20.5% oil.	.....	PDM .....	.....	11, 12 .....	.....	155
Magnesia, Unslaked .....	.....	PDM .....	.....	1 .....	Lightburned magnesia, calcined magnesite.	155, 280
Magnesium Nitrate .....	UN1474 .....	5.1 .....	.....	4 .....	.....	140
Metal Sulfide Concentrates.	.....	PDM .....	.....	8, 11, 12, 22, 24 .....	Solid, finely divided sulfide concentrates of copper, iron, lead, nickel, zinc, or other metalliferous ores.	155, 285, 450
Peat Moss with moisture content of more than 65% by weight.	.....	PDM .....	.....	8, 12, 13, 14, 24 .....	Fine to coarse fibrous structure.	155, 290, 450
<i>Pencil Pitch</i> .....	.....	.....	See Pitch Prill.			
Petroleum Coke calcined or uncalcined at >55°C (131°F).	.....	PDM .....	.....	11 .....	.....	155, 295
Pitch Prill .....	.....	PDM .....	.....	14, 16 .....	.....	155
Potassium Nitrate .....	UN1486 .....	5.1 .....	.....	4 .....	.....	140
<i>Prilled Coal Tar</i> .....	.....	.....	See Pitch Prill.			
Pyrites, Calcined .....	.....	PDM .....	.....	8, 9, 24 .....	Fly ash .....	155, 225, 450
<i>Pyritic ash</i> .....	.....	.....	See Pyrites, Calcined.			
<i>Quicklime</i> .....	.....	.....	See Lime, Unslaked.			
Radioactive Material .....	UN2912 .....	7 .....	.....	17 .....	Low specific activity .....	145, 300
Radioactive Material .....	UN2913 .....	7 .....	.....	17 .....	Surface contaminated objects.	145, 300

TABLE 148.10—BULK SOLID HAZARDOUS MATERIALS TABLE—Continued

Bulk solid material descriptions and bulk cargo shipping names (1)	I.D. number (2)	Hazard class or division (3)	References (4)	Hazardous or potentially dangerous characteristics (see § 148.11) (5)	Other characteristics (6)	Special requirements (§ 148.***) (7)
<i>Rough Ammonia Tankage.</i> Saltpeter	.....	.....	See Tankage. See Potassium Nitrate.			
Sawdust	.....	PDM	.....	12, 18	.....	155, 405(a), 407
Seed Cake	UN1386	4.2	.....	12, 19	Mechanically expelled or solvent extractions.	130, 310
Seed Cake	UN2217	4.2	.....	12, 19	Solvent extractions	130, 310
Silicomanganese with silicon content of 25% or more.	.....	PDM	.....	2, 3, 12	With known hazard profile or known to evolve gases.	155, 405(b), 407, 415(a) & (d), 420(b), 445
Sodium Nitrate	UN1498	5.1	.....	4	.....	140
Sodium Nitrate and Potassium Nitrate Mixture.	UN1499	5.1	.....	4	Mixtures prepared as fertilizer.	140
<i>Steel Swarf</i>	.....	.....	See Ferrous Metal Borings, Shavings, Turnings, or Cuttings.			
Sulfur	UN1350	4.1	.....	14, 20	Lumps or coarse-grained powder.	125, 315, 405(a), 407, 435
Sulfur	NA1350	9	.....	14, 20	Not subject to the requirements of this subchapter when formed into specific shapes (i.e., prills, granules, pellets, pastiles, or flakes).	125, 315, 405(a), 407, 435
Tankage	.....	PDM	.....	11	.....	155, 320
<i>Tankage Fertilizer</i>	.....	.....	See Tankage.			
Vanadium Ore	.....	PDM	.....	21	.....	155
Wood chips, Wood Pellets, Wood Pulp Pellets.	.....	PDM	.....	12	.....	155, 325
Zinc Ashes	UN1435	4.3	.....	2, 3, 23	Includes zinc dross, residues, and skimmings.	135, 330, 405(b), 407, 420(b), 435, 445

**§ 148.11 Hazardous or potentially dangerous characteristics.**

the meaning of that code is set forth in this section.

(a) General. When Column 5 refers to a code for a hazardous material or PDM,

(b) Table of Hazardous or Potentially Dangerous Characteristics.

Code	Hazardous or potentially dangerous characteristic
1	Contact with water may cause heating.
2	Contact with water may cause evolution of flammable gases, which may form explosive mixtures with air.
3	Contact with water may cause evolution of toxic gases.
4	If involved in a fire, will greatly intensify the burning of combustible materials.
5	A major fire aboard a vessel carrying this material may involve a risk of explosion in the event of contamination (e.g., by a fuel oil) or strong confinement. If heated strongly will decompose, giving off toxic gases that support combustion.
6	These mixtures may be subject to self-sustaining decomposition if heated. Decomposition, once initiated, may spread throughout the remainder, producing gases that are toxic.
7	Toxic if swallowed and by dust inhalation.
8	Harmful and irritating by dust inhalation.
9	Highly corrosive to steel.
10	Powerful allergen. Toxic by ingestion. Skin contact or inhalation of dust may cause severe irritation of skin, eyes, and mucous membranes in some people.



Code	Hazardous or potentially dangerous characteristic
11 .....	May be susceptible to spontaneous heating and ignition.
12 .....	Liable to cause oxygen depletion in the cargo space.
13 .....	Liable to emit methane gas which can form explosive mixtures with air.
14 .....	Dust forms explosive mixtures with air.
15 .....	May present substantial danger to the public health or welfare or the environment when released into the environment. Skin contact and dust inhalation should be avoided.
16 .....	Combustible. Burns with dense black smoke. Dust may cause skin and eye irritation.
17 .....	Radiation hazard from dust inhalation and contact with mucous membranes.
18 .....	Susceptible to fire from sparks and open flames.
19 .....	May self-heat slowly and, if wet or containing an excessive proportion of unoxidized oil, ignite spontaneously.
20 .....	Fire may produce irritating or poisonous gases.
21 .....	Dust may contain toxic constituents.
22 .....	Lead nitrate and lead sulfide are hazardous substances; see code 15 of this table and § 148.270.
23 .....	Hazardous substance when consisting of pieces having a diameter less than 100 micrometers (0.004 in.); see code 15 of this table and § 148.270.
24 .....	Cargo subject to liquefaction.
25 .....	Subject to liquefaction if average particle size of cargo is less than 10mm (.394 in.).
26 .....	This entry is considered a Marine Pollutant in accordance with 49 CFR 172.101 Appendix B.
27 .....	This entry is considered a certain dangerous cargo in accordance with 33 CFR 160.204.

#### § 148.12 Assignment and certification.

(a) The National Cargo Bureau is authorized to assist the Coast Guard in administering the provisions of this part by—

- (1) Inspecting vessels for suitability for loading solid materials in bulk;
- (2) Examining stowage of solid materials loaded in bulk on board vessels;
- (3) Making recommendations on stowage requirements applicable to the transportation of solid materials in bulk; and

(4) Issuing certificates of loading that verify stowage of the solid material in bulk meets requirements of this part.

(b) Certificates of loading from the National Cargo Bureau are accepted as evidence of compliance with bulk solid transport regulations.

#### Subpart B—Special Permits

##### § 148.15 Petition for a special permit.

(a) Each shipper who wishes to ship a bulk solid material not listed in Table 148.10 of this part must determine whether the material meets the definition of any hazard class, or the definition of a PDM, as those terms are defined in § 148.3.

(b) If the material meets any of the definitions described in paragraph (a), the shipper then must submit a petition in writing to the Commandant (CG–5223) for authorization to ship any hazardous material or PDM not listed in Table 148.10 of this part.

(c) If the Commandant (CG–5223) approves a petition for authorization, the Commandant (CG–5223) issues the petitioner a Coast Guard special permit. The permit allows the material to be transported in bulk by vessel and outlines requirements for this transport.

(d) A tripartite agreement developed in conjunction with the United States

and in accordance with the IMSBC Code (incorporated by reference, see § 148.8) may be used in lieu of a special permit.

##### § 148.20 Deadlines for submission of petition and related requests.

(a) A petition for a special permit must be submitted at least 45 days before the requested effective date. Requests for extension or renewal of an existing special permit must be submitted 20 days before the date of expiration.

(b) Requests for extension or renewal must include the information required under § 148.21(a), (f), and (g).

##### § 148.21 Necessary information.

Each petition for a special permit must contain at least the following:

(a) A description of the material, including, if a hazardous material—

- (1) The proper shipping name from the table in 49 CFR 172.101;
- (2) The hazard class and division of the material; and
- (3) The identification number of the material.

(b) A material safety data sheet (MSDS) for the material or—

- (1) The chemical name and any trade names or common names of the material;
- (2) The composition of the material, including the weight percent of each constituent;
- (3) Physical data, including color, odor, appearance, melting point, and solubility;
- (4) Fire and explosion data, including auto-ignition temperature, any unusual fire or explosion hazards, and any special fire fighting procedures;
- (5) Health hazards, including any dust inhalation hazards and any chronic health effects;

(6) The threshold limit value (TLV) of the material or its major constituents, if available, and any relevant toxicity data;

(7) Reactivity data, including any hazardous decomposition products and any incompatible materials; and

(8) Special protection information, including ventilation requirements and personal protection equipment required.

(c) Other potentially dangerous characteristics of the material not covered by paragraph (b) of this section, including—

- (1) Self-heating;
- (2) Depletion of oxygen in the cargo space;
- (3) Dust explosion; and
- (4) Liquefaction.

(d) A detailed description of the proposed transportation operation, including—

- (1) The type of vessel proposed for water movements;
- (2) The expected loading and discharge ports, if known;
- (3) Procedures to be used for loading and unloading the material;
- (4) Precautions to be taken when handling the material; and
- (5) The expected temperature of the material at the time it will be loaded on the vessel.

(e) Test results (if required under Subpart E of this part).

(f) Previous approvals or permits.

(g) Any relevant shipping or accident experience (or any other relevant transportation history by any mode of transport).

##### § 148.25 Activities covered by a special permit.

(a) Each special permit covers any shipment of the permitted material by the shipper and also covers for each shipment—

- (1) Each transfer operation;

(2) Each vessel involved in the shipment; and

(3) Each individual involved in any cargo handling operation.

(b) Each special permit is valid for a period determined by the Commandant (CG-5223) and specified in the special permit. The period will not exceed 4 years and is subject to suspension or revocation before its expiration date.

#### **§ 148.26 Standard conditions for special permits.**

(a) Each special permit holder must comply with all the requirements of this part unless specifically exempted by the terms of the special permit.

(b) Each special permit holder must provide a copy of the special permit and the information required in § 148.90 to the master or person in charge of each vessel carrying the material.

(c) The master of a vessel transporting a special permit material must ensure that a copy of the special permit is on board the vessel. The special permit must be kept with the dangerous cargo manifest if such a manifest is required by § 148.70.

(d) The person in charge of a barge transporting any special permit material must ensure that a copy of the special permit is on board the tug or towing vessel. When the barge is moored, the special permit must be kept on the barge with the shipping papers as prescribed in § 148.62.

#### **§ 148.30 Records of special permits issued.**

A list of all special permits issued, and copies of each, are available from the Commandant (CG-5223).

### **Subpart C—Minimum Transportation Requirements**

#### **§ 148.50 Cargoes subject to this subpart.**

The regulations in this subpart apply to each bulk shipment of—

(a) A material listed in Table 148.10 of this part; and

(b) Any solid material shipped under the terms of a Coast Guard special permit.

#### **§ 148.51 Temperature readings.**

When Subpart D of this part sets a temperature limit for loading or transporting a material, apply the following rules:

(a) The temperature of the material must be measured 20 to 36 centimeters (8 to 14 inches) below the surface at 3 meter (10 foot) intervals over the length and width of the stockpile or cargo hold.

(b) The temperature must be measured at every spot in the stockpile or cargo hold that shows evidence of heating.

(c) Before loading or transporting the material, all temperatures measured must be below the temperature limit set in Subpart D of this part.

#### **§ 148.55 International shipments.**

(a) Importer's responsibility. Each person importing any bulk solid material requiring special handling into the United States must provide the shipper and the forwarding agent at the place of entry into the United States with timely and complete information as to the requirements of this part that will apply to the shipment of the material within the United States.

(b) IMSBC Code. Notwithstanding the provisions of this part, a bulk solid material that is classed, described, stowed, and segregated in accordance with the IMSBC Code (incorporated by reference, *see* § 148.8), and otherwise conforms to the requirements of this section, may be offered and accepted for transportation and transported within the United States. The following conditions and limitations apply:

(1) A bulk solid material that is listed in Table 148.10 of this part, but is not subject to the requirements of the IMSBC Code, may not be transported under the provisions of this section and is subject to the requirements of this part. Examples of such materials include environmentally hazardous substances, solid, n.o.s.

(2) Zinc Ashes must conform to the requirements found in § 148.330.

(3) Exemptions granted by other competent authorities in accordance with the IMSBC Code must be approved by the Commandant (CG-5223) in accordance with § 148.5.

(4) Tripartite agreements granted by other competent authorities in accordance with the IMSBC Code must be authorized for use in the United States by the Commandant (CG-5223).

#### **§ 148.60 Shipping papers.**

The shipper of a material listed in Table 148.10 of this part must provide the master or his representative with appropriate information on the cargo in the form of a shipping paper, in English, prior to loading. Information on the shipping paper must include the following:

(a) The appropriate BCSN. Secondary names may be used in addition to the BCSN;

(b) The identification number, if applicable;

(c) The hazard class of the material as listed in Table 148.10 of this part or on the Special Permit for the material;

(d) The total quantity of the material to be transported;

(e) The stowage factor;

(f) The need for trimming and the trimming procedures, as necessary;

(g) The likelihood of shifting, including angle of repose, if applicable;

(h) A certificate on the moisture content of the cargo and its transportable moisture limit for cargoes that are subject to liquefaction;

(i) Likelihood of formation of a wet base;

(j) Toxic or flammable gases that may be generated by the cargo, if applicable;

(k) Flammability, toxicity, corrosiveness, and propensity to oxygen depletion of the cargo, if applicable;

(l) Self-heating properties of the cargo, if applicable;

(m) Properties on emission of flammable gases in contact with water, if applicable;

(n) Radioactive properties, if applicable;

(o) The name and address of the U.S. shipper (consignor) or, if the shipment originates in a foreign country, the U.S. consignee.

(p) A certification, signed by the shipper, that bears the following statement: "This is to certify that the above named material is properly named, prepared, and otherwise in proper condition for bulk shipment by vessel in accordance with the applicable regulations of the U.S. Coast Guard."

#### **§ 148.61 Emergency response information.**

The shipper of a material listed in Table 148.10 of this part must provide the master or his representative with appropriate emergency response information. This information may be included on the shipping papers or in a separate document such as a material safety data sheet (MSDS). The information must include preliminary first aid measures and emergency procedures to be carried out in the event of an incident or fire involving the cargo.

#### **§ 148.62 Location of shipping papers and emergency response information.**

(a) The shipping paper and emergency response information required by §§ 148.60 and 148.61 must be kept on board the vessel along with the dangerous cargo manifest required by § 148.70. When the shipment is by unmanned barge the shipping papers and emergency response information must be kept on the tug or towing vessel. When an unmanned barge is moored, the shipping paper and emergency response information must be on board the barge in a readily retrievable location.

(b) Any written certification or statement from the shipper to the master of a vessel or to the person in charge of

a barge must be on, or attached to, the shipping paper. See Subparts E and F of this part for required certifications.

**§ 148.70 Dangerous cargo manifest; general.**

(a) Except as provided in paragraph (b) of this section and in § 148.72, each vessel transporting materials listed in Table 148.10 of this part must have a dangerous cargo manifest on board.

(b) This document must be kept in a designated holder on or near the vessel's bridge. When required for an unmanned barge, the document must be on board the tug or towing vessel.

**§ 148.71 Information included in the dangerous cargo manifest.**

The dangerous cargo manifest must include the following:

(a) The name and official number of the vessel. If the vessel has no official number, the international radio call sign must be substituted;

(b) The nationality of the vessel;

(c) The name of the material as listed in Table 148.10 of this part;

(d) The hold or cargo compartment in which the material is being transported;

(e) The quantity of material loaded in each hold or cargo compartment; and

(f) The signature of the master acknowledging that the manifest is correct, and the date of the signature.

**§ 148.72 Dangerous cargo manifest; exceptions.**

(a) No dangerous cargo manifest is required for—

(1) Shipments by unmanned barge, except on an international voyage; and

(2) Shipments of materials designated as potentially dangerous materials in Table 148.10 of this part.

(b) When a dangerous cargo manifest is required for an unmanned barge on an international voyage, § 148.71(d) does not apply, unless the barge has more than one cargo compartment.

**§ 148.80 Supervision of cargo transfer.**

The master must ensure that cargo transfer operations are supervised by a responsible person as defined in § 148.3.

**§ 148.85 Required equipment for confined spaces.**

When transporting a material that is listed in Table 148.10 of this part, each vessel, other than an unmanned barge, must have on board the following:

(a) Equipment capable of measuring atmospheric oxygen. At least two members of the crew must be knowledgeable in the use of the equipment, which must be maintained in a condition ready for use and calibrated according to the manufacturer's instructions.

(b) At least two self-contained, pressure-demand-type, air breathing apparatus approved by the Mine Safety and Health Administration (MSHA) or the National Institute for Occupational Safety and Health (NIOSH), each having at least a 30-minute air supply. Each foreign flag vessel must have on board at least two such apparatus that are approved by the flag state administration. The master must ensure that the breathing apparatus is used only by persons trained in its use.

**§ 148.86 Confined space entry.**

(a) Except in an emergency, no person may enter a confined space unless that space has been tested to ensure there is sufficient oxygen to support life. If the oxygen content is below 19.5 percent, the space must be ventilated and retested before entry.

(b) In an emergency, a confined space may be entered by a trained person wearing self-contained breathing apparatus, suitable protective clothing as necessary, and a wire rope safety line tended by a trained person outside the hold or in an adjacent space. Emergency entry into a confined space must be supervised by a responsible person as defined in § 148.3.

**§ 148.90 Preparations before loading.**

Before loading any material listed in Table 148.10 of this part, in bulk on board a vessel, the following conditions must be met:

(a) If a hold previously has contained any material required under Subpart D of this part to be segregated from the material to be loaded, the hold must be thoroughly cleaned of all residue of the previous cargoes.

(b) If the material to be loaded is Class 4.1, 4.2, or 5.1, then all combustible materials must be removed from the hold. Examples of some combustible materials are residue of previous cargoes, loose debris, and dunnage. Permanent wooden battens or sheathing may remain in the hold unless forbidden by Subpart E of this part.

(c) If the material to be loaded is classified as Class 4.3, or is subject to liquefaction, the hold and associated bilge must be as dry as practicable.

**§ 148.100 Log book entries.**

During the transport in bulk of a material listed in Table 148.10 of this part, the master must keep a record of each temperature measurement and each test for toxic or flammable gases required by this part. The date and time of each measurement and test must be recorded in the vessel's log.

**§ 148.110 Procedures followed after unloading.**

(a) After a material covered by this part has been unloaded from a vessel, each hold or cargo compartment must be thoroughly cleaned of all residue of such material unless the hold is to be reloaded with that same cargo.

(b) When on U.S. territorial seas or inland waters, cargo associated wastes, cargo residue, and deck sweepings must be retained on the vessel and disposed of in accordance with 33 CFR parts 151.51 through 151.77.

**§ 148.115 Report of incidents.**

(a) When a fire or other hazardous condition occurs on a vessel transporting a material covered by this part, the master must notify the nearest COTP as soon as possible and comply with any instructions given.

(b) Any incident or casualty occurring while transporting a material covered by this part must also be reported as required under 49 CFR 171.15, if applicable. A copy of the written report required under 49 CFR 171.16 must also be sent to the Commandant (CG-5223), U.S. Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126, at the earliest practicable moment.

(c) Any release to the environment of a hazardous substance in a quantity equal to or in excess of its reportable quantity (RQ) must be reported immediately to the National Response Center at (800) 424-8802 (toll free) or (202) 267-2675.

**Subpart D—Stowage and Segregation**

**§ 148.120 Stowage and segregation requirements.**

(a) Each material listed in Table 148.10 of this part must be segregated from incompatible materials in accordance with—

(1) The requirements of Tables 148.120A and 148.120B of this section that pertain to the primary or subsidiary hazard class to which the materials belong. Whenever a subsidiary hazard may exist, the most stringent segregation requirement applies; and

(2) Any specific requirements in Subpart D of this part.

(b) Materials that are required to be separated during stowage must not be handled at the same time. Any residue from a material must be removed before a material required to be separated from it is loaded.

(c) Definitions and application of segregation terms:

(1) "Separated from" means located in different cargo compartments or holds when stowed under deck. If the intervening deck is resistant to fire and

liquid, a vertical separation, i.e., in different cargo compartments, is acceptable as equivalent to this segregation.

(2) "Separated by a complete cargo compartment or hold from" means

either a vertical or horizontal separation, for example, by a complete cargo compartment or hold. If the intervening decks are not resistant to fire and liquid, only horizontal separation is acceptable.

(3) "Separated longitudinally by an intervening complete cargo compartment or hold from" means that vertical separation alone does not meet this requirement.

TABLE 148.120A—SEGREGATION BETWEEN INCOMPATIBLE BULK SOLID CARGOES

Bulk solid materials	Class	4.1	4.2	4.3	5.1	6.1	7	8	9/PDM
Flammable solid	4.1	X							
Spontaneously combustible material	4.2		X						
Dangerous when wet material	4.3	3	3	X					
Oxidizer	5.1	3	3	3	X				
Poisonous material	6.1	X	X	X	2	X			
Radioactive material	7	2	2	2	2	2	X		
Corrosive material	8	2	2	2	2	X	X	X	
Miscellaneous hazardous material and potential dangerous material	9/PDM	X	X	X	X	X	2	X	X

Numbers and symbols indicate the following terms as defined in § 148.3 of this part:

2—"Separated from"

3—"Separated by a complete hold or compartment from"

X—No segregation required, except as specified in an applicable section of this subpart or Subpart E of this part.

TABLE 148.120B—SEGREGATION BETWEEN BULK SOLID CARGOES AND INCOMPATIBLE PACKAGED CARGOES

Packaged hazardous material	Bulk solid material								
	Class	4.1	4.2	4.3	5.1	6.1	7	8	9/PDM
Explosives	1.1	4	4	4	4	2	2	4	X
	1.2								
	1.5								
Explosives	1.3	3	3	4	4	2	2	2	X
	1.6								
Explosives	1.4	2	2	2	2	X	2	2	X
Flammable gas	2.1	2	2	1	2	X	2	2	X
Non-flammable compressed gas	2.2	2	2	X	X	X	2	1	X
Poisonous gas	2.3	2	2	X	X	X	2	1	X
Flammable liquid	3	2	2	2	2	X	2	1	X
Flammable solid	4.1	X	1	X	1	X	2	1	X
Spontaneously combustible material	4.2	1	X	1	2	1	2	1	X
Dangerous when wet material	4.3	X	1	X	2	X	2	1	X
Oxidizer	5.1	1	2	2	X	1	1	2	X
Organic peroxide	5.2	2	2	2	2	1	2	2	X
Poisonous material	6.1	X	1	X	1	X	X	X	X
Infectious substance	6.2	3	3	2	3	1	3	3	X
Radioactive material	7	2	2	2	1	X	X	2	X
Corrosive material	8	1	1	1	2	X	2	X	X
Miscellaneous hazardous material	9	X	X	X	X	X	X	X	X

Numbers and symbols indicate the following terms as defined in § 148.3:

1—"Away from"

2—"Separated from"

3—"Separated by a complete hold or compartment from"

4—"Separated longitudinally by an intervening complete compartment or hold from"

X—No segregation required, except as specified in an applicable section of this subpart or Subpart E of this part.

**§ 148.125 Stowage and segregation for materials of Class 4.1.**

(a) Class 4.1 materials listed in Table 148.10 of this part must—

(1) Be kept as cool and dry as practical before loading;

(2) Not be loaded or transferred between vessels during periods of rain or snow;

(3) Be stowed separated from foodstuffs; and

(4) Be stowed clear of sources of heat and ignition and protected from sparks and open flame.

(b) Bulkheads between a hold containing a Class 4.1 material and incompatible materials must have cable and conduit penetrations sealed against the passage of gas and vapor.

**§ 148.130 Stowage and segregation for materials of Class 4.2.**

(a) Class 4.2 materials listed in Table 148.10 of this part must—

(1) Be kept as cool and dry as practical before loading;

(2) Not be loaded or transferred between vessels during periods of rain or snow;

(3) Be stowed clear of sources of heat and ignition and protected from sparks and open flame; and

(4) Except for copra and seed cake, be stowed separate from foodstuffs.

(b) The bulkhead between a hold containing a Class 4.2 material and a hold containing a material not permitted to mix with Class 4.2 materials must have cable and conduit penetrations

sealed against the passage of gas and vapor.

**§ 148.135 Stowage and segregation for materials of Class 4.3.**

(a) Class 4.3 materials listed in Table 148.10 of this part which, in contact with water, emit flammable gases, must—

- (1) Be kept as cool and dry as practical before loading;
- (2) Not be loaded or transferred between vessels during periods of rain or snow;
- (3) Be stowed separate from foodstuffs and all Class 8 liquids; and
- (4) Be stowed in a mechanically ventilated hold. Exhaust gases must not penetrate into accommodation, work or control spaces. Unmanned barges that have adequate natural ventilation need not have mechanical ventilation.

(b) The bulkhead between a hold containing a Class 4.3 material and incompatible materials must have cable and conduit penetrations sealed against the passage of gas and vapor.

(b) The bulkhead between a hold containing a Class 4.3 material and incompatible materials must have cable and conduit penetrations sealed against the passage of gas and vapor.

**§ 148.140 Stowage and segregation for materials of Class 5.1.**

(a) Class 5.1 materials listed in Table 148.10 of this part must—

- (1) Be kept as cool and dry as practical before loading;
- (2) Be stowed away from all sources of heat or ignition; and
- (3) Be stowed separate from foodstuffs and all readily combustible materials.

(b) Special care must be taken to ensure that holds containing Class 5.1 materials are clean and, whenever practical, only noncombustible securing and protecting materials are used.

(c) Class 5.1 materials must be prevented from entering bilges or other cargo holds.

**§ 148.145 Stowage and segregation for materials of Class 7.**

(a) Class 7 material listed in Table 148.10 of this part must be stowed—

- (1) Separate from foodstuffs; and
- (2) In a hold or barge closed or covered to prevent dispersal of the material during transportation.

(b) [Reserved]

**§ 148.150 Stowage and segregation for materials of Class 9.**

(a) A bulk solid cargo of Class 9 material (miscellaneous hazardous material) listed in Table 148.10 of this part must be stowed and segregated as required by this section.

(b) Ammonium nitrate fertilizer of Class 9 must be segregated as required for Class 5.1 materials in §§ 148.120 and 148.140 and must be stowed—

- (1) Separated by a complete hold or compartment from readily combustible materials, chlorates, hypochlorites, nitrites, permanganates, and fibrous materials (e.g., cotton, jute, sisal, etc.);
- (2) Clear of all sources of heat, including insulated piping; and
- (3) Out of direct contact with metal engine-room boundaries.

(c) Castor beans must be stowed separate from foodstuffs and Class 5.1 materials.

(d) Fish meal must be stowed and segregated as required for Class 4.2 materials in §§ 148.120 and 148.130 of this part. In addition, its temperature at loading must not exceed 35 °C (95 °F), or 5 °C (41 °F) above ambient temperature, whichever is higher.

(e) Sulfur must be stowed and segregated as required under §§ 148.120 and 148.125 for a material of Class 4.1.

**§ 148.155 Stowage and segregation for potentially dangerous materials.**

(a) A PDM must be stowed and segregated according to the requirements of this section and Table 148.155 of this section.

(b) When transporting coal—

(1) Coal must be stowed separate from materials of Class/division 1.4 and Classes 2, 3, 4, and 5 in packaged form; and separated from bulk solid materials of Classes 4 and 5.1;

(2) No material of Class 5.1, in either packaged or bulk solid form, may be stowed above or below a cargo of coal; and

(3) Coals must be separated longitudinally by an intervening complete cargo compartment or hold from materials of Class 1 other than Class/division 1.4.

(c) When transporting direct reduced iron (DRI)—

(1) DRI lumps, pellets, or cold-molded briquettes, and DRI hot-molded briquettes, must be separated from materials of Class/division 1.4, Classes 2, 3, 4, 5, Class 8 acids in packaged form, and bulk solid materials of Classes 4 and 5.1; and

(2) No material of Class 1, other than Class/division 1.4, may be transported on the same vessel with DRI.

(d) Petroleum coke, calcined or uncalcined, must be—

(1) Separated longitudinally by an intervening complete cargo compartment or hold from materials of Class/divisions 1.1 and 1.5; and

(2) Separated by a complete cargo compartment or hold from all hazardous materials and other potentially dangerous materials in packaged and bulk solid form.

TABLE 148.155—STOWAGE AND SEGREGATION REQUIREMENTS FOR POTENTIALLY DANGEROUS MATERIAL

Potentially dangerous material	Segregate as for class listed <sup>1</sup>	“Separate from” foodstuffs	Load only under dry weather conditions	Keep dry	Mechanical ventilation required	“Separate from” material listed	Special provisions
Aluminum Smelting By-products or Aluminum Re-melting By-products.	4.3	X	X	X	X	Class 8 liquids.	
Brown Coal Briquettes .....	.....	.....	.....	.....	.....	See paragraph (b) of this section.	See paragraph (b) of this section.
Charcoal .....	4.1	.....	.....	X	.....	Oily materials.	
Coal .....	.....	.....	.....	.....	.....	See paragraph (b) of this section.	See paragraph (b) of this section.
Direct reduced iron (A) .....	.....	.....	.....	.....	.....	See paragraph (c) of this section.	See paragraph (c) of this section.
Direct reduced iron (B) .....	.....	.....	.....	.....	.....	See paragraph (c) of this section.	See paragraph (c) of this section.
Ferrophosphorus .....	4.3	X	X	X	X	Class 8 liquids.	
Ferrosilicon .....	4.3	X	X	X	X	Class 8 liquids.	
Fluorospar .....	.....	X	.....	.....	.....	Class 8 liquids.	
Lime, Unslaked .....	.....	.....	.....	X	.....	All packaged and bulk solid hazardous materials.	

TABLE 148.155—STOWAGE AND SEGREGATION REQUIREMENTS FOR POTENTIALLY DANGEROUS MATERIAL—Continued

Potentially dangerous material	Segregate as for class listed <sup>1</sup>	“Separate from” foodstuffs	Load only under dry weather conditions	Keep dry	Mechanical ventilation required	“Separate from” material listed	Special provisions
Linted Cotton Seed .....	.....	.....	.....	X	.....	All packaged and bulk solid hazardous materials. Class 8 liquids.	See section 148.155(d).
Magnesia, Unslaked .....	.....	.....	.....	.....	.....		
Metal Sulfide Concentrates .....	4.2	X	.....	.....	.....	.....	
Petroleum Coke .....	.....	X	.....	.....	.....		
Pitch Prill .....	4.1	.....	.....	.....	.....	All Class 5.1 and 8 liquids. Class 8 liquids.	
Pyrites, Calcined .....	.....	X	X	X	X		
Sawdust .....	4.1	.....	.....	X	.....		
Silicomanganese .....	4.3	X	X	X	X	.....	
Tankage .....	4.2	X	X	.....	.....		
Vanadium .....	6.1	X	.....	.....	.....		
Wood chips .....	4.1	.....	.....	.....	.....		
Wood pellets .....	4.1	.....	.....	.....	.....		
Wood pulp pellets .....	4.1	.....	.....	.....	.....		

<sup>1</sup> See Tables 148.120A and B.

**Subpart E—Special Requirements for Certain Materials**

**§ 148.200 Purpose.**

This subpart prescribes special requirements for specific materials. These requirements are in addition to the minimum transportation requirements in Subpart C of this part that are applicable to all materials listed in Table 148.10 of this part.

**§ 148.205 Ammonium nitrate and ammonium nitrate fertilizers.**

(a) This section applies to the stowage and transportation in bulk of ammonium nitrate and the following fertilizers composed of uniform, non-segregating mixtures containing ammonium nitrate:

(1) Ammonium nitrate containing added organic matter that is chemically inert towards the ammonium nitrate; containing at least 90 percent ammonium nitrate and a maximum of 0.2 percent of combustible material (including organic material calculated as carbon); or containing less than 90 percent but more than 70 percent of ammonium nitrate and a maximum of 0.4 percent combustible material;

(2) Ammonium nitrate with calcium carbonate and/or dolomite, containing more than 80 percent but less than 90 percent of ammonium nitrate and a maximum of 0.4 percent of total combustible material;

(3) Ammonium nitrate with ammonium sulfate containing more than 45 percent but a maximum of 70 percent of ammonium nitrate and containing a maximum of 0.4 percent of combustible material; and

(4) Nitrogen phosphate or nitrogen/potash type fertilizers or complete nitrogen/phosphate/potash type fertilizers containing more than 70 percent but less than 90 percent of ammonium nitrate and a maximum of 0.4 percent of combustible material.

(b) No material covered by this section may be transported in bulk unless it demonstrates resistance to detonation when tested by one of the following methods:

(1) Appendix 2, Section 5, of the IMSBC Code (incorporated by reference, *see* § 148.8);

(2) Test series 1 and 2 of the Class 1 (explosive) in the UN Manual of Tests and Criteria, Part I (incorporated by reference, *see* § 148.8); or

(3) An equivalent test satisfactory to the Administration of the country of shipment.

(c) Before loading a material covered by this section—

(1) The shipper must give the master of the vessel written certification that the material has met the test requirements of paragraph (b) of this section;

(2) The cargo hold must be inspected for cleanliness and free from readily combustible materials;

(3) Each cargo hatch must be weathertight as defined in § 42.13–10 of this chapter;

(4) The temperature of the material must be less than 55 °C (131 °F); and

(5) Each fuel tank under a cargo hold where the material is stowed must be pressure tested before loading to ensure that there is no leakage of manholes or piping systems leading through the cargo hold.

(d) Bunkering or transferring of fuel to or from the vessel may not be performed during cargo loading and unloading operations involving a material covered by this section.

(e) When a material covered by this section is transported on a cargo vessel—

(1) No other material may be stowed in the same hold with that material;

(2) In addition to the segregation requirements in § 148.140, the material must be separated by a complete cargo compartment or hold from readily combustible materials, chlorates, chlorides, chlorites, hypochlorites, nitrites, permanganates, and fibrous materials; and

(3) The bulkhead between a cargo hold containing a material covered by this section and the engine room must be insulated to “A–60” class division or an equivalent arrangement to the satisfaction of the cognizant Coast Guard Captain of the Port or the Administration of the country of shipment.

**§ 148.220 Ammonium nitrate-phosphate fertilizers.**

(a) This section applies to the stowage and transportation of uniform, nonsegregating mixtures of nitrogen/phosphate or nitrogen/potash type fertilizers, or complete fertilizers of nitrogen/phosphate/potash type containing a maximum of 70 percent of ammonium nitrate and containing a maximum of 0.4 percent total added combustible material or containing a maximum of 45 percent ammonium nitrate with unrestricted combustible material.

(b) A fertilizer mixture described in paragraph (a) of this section is exempt if—

(1) When tested in accordance with the trough test prescribed in Appendix 2, Section 4, of the IMSBC Code or in the UN Manual of Tests and Criteria, Part III, Subsection 38.2 (incorporated by reference, *see* § 148.8), it is found to be free from the risk of self-sustaining decomposition.

(2) [Reserved]

(c) No fertilizer covered by this section may be transported in bulk if, when tested in accordance with the trough test prescribed in Appendix 2, Section 4, of the IMSBC Code or in the UN Manual of Tests and Criteria, Part III, Subsection 38.2 (incorporated by reference, *see* § 148.8), it has a self-sustaining decomposition rate that is greater than 0.25 meters per hour, or is liable to self-heat sufficient to initiate decomposition.

(d) Fertilizers covered by this section must be stowed away from all sources of heat, and out of direct contact with a metal engine compartment boundary.

(e) Bunkering or transferring of fuel may not be performed during loading and unloading of fertilizer covered by this section.

(f) Fertilizer covered by this section must be segregated as prescribed in §§ 148.140 and 148.220(d).

**§ 148.225 Calcined pyrites (pyritic ash, fly ash).**

(a) This part does not apply to the shipment of calcined pyrites that are the residual ash of oil or coal fired power stations.

(b) This section applies to the stowage and transportation of calcined pyrites that are the residual product of sulfuric acid production or elemental metal recovery operations.

(c) Before loading calcined pyrites covered by this section—

(1) The cargo space must be as clean and dry as practical;

(2) The calcined pyrites must be dry; and

(3) Precautions must be taken to prevent the penetration of calcined pyrites into other cargo spaces, bilges, wells, and ceiling boards.

(d) After calcined pyrites covered by this section have been unloaded from a cargo space, the cargo space must be thoroughly cleaned. Cargo residues and sweepings must be disposed of as prescribed in 33 CFR parts 151.55 through 151.77.

**§ 148.227 Calcium nitrate fertilizers.**

This part does not apply to commercial grades of calcium nitrate fertilizers consisting mainly of a double

salt (calcium nitrate and ammonium nitrate) and containing a maximum of 15.5 percent nitrogen and at least 12 percent of water.

**§ 148.230 Calcium oxide (lime, unslaked).**

(a) When transported by barge, unslaked lime (calcium oxide) must be carried in an unmanned, all steel, double-hulled barge equipped with weathertight hatches or covers. The barge must not carry any other cargo while unslaked lime is on board.

(b) The shipping paper requirements in § 148.60 and the dangerous cargo manifest requirements in § 148.70 do not apply to the transportation of unslaked lime under paragraph (a) of this section.

**§ 148.235 Castor beans.**

(a) This part applies only to the stowage and transportation of whole castor beans. Castor meal, castor pomace, and castor flakes may not be shipped in bulk.

(b) Persons handling castor beans must wear dust masks and goggles.

(c) Care must be taken to prevent castor bean dust from entering accommodation, control, or service spaces during cargo transfer operations.

**§ 148.240 Coal.**

(a) The electrical equipment in cargo holds carrying coal must meet the requirements of Subpart 111.105 of this chapter or an equivalent standard approved by the administration of the vessel's flag state.

(b) Before coal is loaded in a cargo hold, the bilges must be as clean and dry as practical. The hold must also be free of any readily combustible material, including the residue of previous cargoes if other than coal.

(c) The master of each vessel carrying coal must ensure that—

(1) All openings to the cargo hold, except for unloading gates on self-unloading vessels, are sealed before loading the coal and, unless the coal is as described in paragraph (f) of this section, the hatches must also be sealed after loading;

(2) As far as practical, gases emitted by the coal do not accumulate in enclosed working spaces such as storerooms, shops, or passageways, and tunnel spaces on self-unloading vessels, and that such spaces are adequately ventilated;

(3) The vessel has adequate ventilation as required by paragraph (f) of this section; and

(4) If the temperature of the coal is to be monitored under paragraph (e)(2)(i) of this section, the vessel has instruments that are capable of

measuring the temperature of the cargo in the range 0°–100 °C (32°–212 °F) without entry into the cargo hold.

(d) A cargo hold containing coal must not be ventilated unless the conditions of paragraph (f) of this section are met, or unless methane is detected under paragraph (h) of this section.

(e) If coal waiting to be loaded has shown a tendency to self-heat, has been handled so that it may likely self-heat, or has been observed to be heating, the master is responsible for monitoring the temperature of the coal at several intervals during these times:

(1) Before loading; and

(2) During the voyage, by—

(i) Measuring the temperature of the coal;

(ii) Measuring the emission of carbon monoxide; or

(iii) Both.

(f) If coal waiting to be loaded has a potential to emit dangerous amounts of methane, for example it is freshly mined, or has a history of emitting dangerous amounts of methane, then:

(1) Surface ventilation, either natural or from fixed or portable nonsparking fans, must be provided; and

(2) The atmosphere above the coal must be monitored for the presence of methane as prescribed in paragraph (h) of this section. The results of this monitoring must be recorded at least twice in every 24-hour period, unless the conditions of paragraph (m) of this section are met.

(g) Electrical equipment and cables in a hold containing a coal described in paragraph (f) of this section must be either suitable for use in an explosive gas atmosphere or de-energized at a point outside the hold. Electrical equipment and cables necessary for continuous safe operations, such as lighting fixtures, must be suitable for use in an explosive gas atmosphere. The master of the vessel must ensure that the affected equipment and cables remain de-energized as long as this coal remains in the hold.

(h) For all coal loaded on a vessel, other than an unmanned barge, the atmosphere above the coal must be routinely tested for the presence of methane, carbon monoxide, and oxygen, following the procedures in the Appendices to the schedules for Coal and Brown Coal Briquettes as contained in the IMSBC Code (incorporated by reference, *see* § 148.8). This testing must be performed in such a way that the cargo hatches are not opened and entry into the hold is not necessary.

(i) When carrying a coal described in paragraph (e) of this section, the atmosphere above the coal must be monitored for the presence of carbon

monoxide as prescribed in paragraph (h) of this section. The results of this monitoring must be recorded at least twice in every 24-hour period, unless the conditions of paragraph (m) of this section are met. If the level of carbon monoxide is increasing rapidly or reaches 20 percent of the lower flammability limit (LFL), the frequency of monitoring must be increased.

(j) When a cargo of coal has a potential to self-heat or has been observed to be heating, the hatches should be closed and sealed and all surface ventilation halted except as necessary to remove any methane that may have accumulated.

(k) If the level of carbon monoxide monitored under paragraph (i) of this section continues to increase rapidly or the temperature of coal carried on board a vessel exceeds 55 °C (131 °F) and is increasing rapidly, the master must notify the nearest Coast Guard Captain of the Port of—

(1) The name, nationality, and position of the vessel;

(2) The most recent temperature, if measured, and levels of carbon monoxide and methane;

(3) The port where the coal was loaded and the destination of the coal;

(4) The last port of call of the vessel and its next port of call; and

(5) What action has been taken.

(l) If the level of methane as monitored under paragraph (h) of this section reaches 20 percent of the LFL or is increasing rapidly, ventilation of the cargo hold, under paragraph (f) of this section, must be initiated. If this ventilation is provided by opening the cargo hatches, care must be taken to avoid generating sparks.

(m) The frequency of monitoring required by paragraph (l) of this section may be reduced at the discretion of the master provided that—

(1) The level of gas measured is less than 20 percent of the LFL;

(2) The level of gas measured has remained steady or decreased over three consecutive readings, or has increased by less than 5 percent over four consecutive readings spanning at least 48 hours; and

(3) Monitoring continues at intervals sufficient to determine that the level of gas remains within the parameters of paragraphs (n)(1) and (n)(2) of this section.

#### § 148.242 Copra.

Copra must have surface ventilation. It must not be stowed against heated surfaces including fuel oil tanks which may require heating.

#### § 148.245 Direct reduced iron (DRI); lumps, pellets, and cold-molded briquettes.

(a) Before loading DRI lumps, pellets, or cold-molded briquettes—

(1) The master must have a written certification from a competent person appointed by the shipper and recognized by the Commandant (CG–5223) stating that the DRI, at the time of loading, is suitable for shipment;

(2) The DRI must be aged for at least 3 days, or be treated with an air passivation technique or some other equivalent method that reduces its reactivity to at least the same level as the aged DRI; and

(3) Each hold and bilge must be as clean and dry as practical. Other than double bottom tanks, adjacent ballast tanks must be kept empty when possible. All wooden fixtures, such as battens, must be removed from the hold.

(b) Each boundary of a hold where DRI lumps, pellets, or cold-molded briquettes are to be carried must be resistant to fire and passage of water.

(c) DRI lumps, pellets, or cold-molded briquettes that are wet, or that are known to have been wetted, may not be accepted for transport. The moisture content of the DRI must not exceed 0.3 percent prior to loading.

(d) DRI lumps, pellets and cold-molded briquettes must be protected at all times from contact with water, and must not be loaded or transferred from one vessel to another during periods of rain or snow.

(e) DRI lumps, pellets, or cold-molded briquettes may not be loaded if their temperature is greater than 65 °C (150 °F).

(f) The shipper of DRI lumps, pellets, or cold-molded briquettes in bulk must ensure that an inert atmosphere of less than 5 percent oxygen and 1 percent hydrogen, by volume, is maintained throughout the voyage in any hold containing these materials.

(g) When DRI lumps, pellets, or cold-molded briquettes are loaded, precautions must be taken to avoid the concentration of fines (pieces less than 6.35mm in size) in any one location in the cargo hold.

(h) Radar and RDF scanners must be protected against the dust generated during cargo transfer operations of DRI lumps, pellets, or cold-molded briquettes.

#### § 148.250 Direct reduced iron (DRI); hot-molded briquettes.

(a) Before loading DRI hot-molded briquettes—

(1) The master must have a written certification from a competent person appointed by the shipper and recognized by the Commandant (CG–

5223) that at the time of loading the DRI hot-molded briquettes are suitable for shipment; and

(2) Each hold and bilge must be as clean and dry as practical. Except double bottom tanks, adjacent ballast tanks must be kept empty where possible. All wooden fixtures, such as battens, must be removed.

(b) All boundaries of a hold must be resistant to fire and passage of water to carry DRI hot-molded briquettes.

(c) DRI hot-molded briquettes must be protected at all times from contact with water. They must not be loaded or transferred from one vessel to another during periods of rain or snow.

(d) DRI hot-molded briquettes may not be loaded if their temperature is greater than 65 °C (150 °F).

(e) When loading DRI hot-molded briquettes, precautions must be taken to avoid the concentration of fines (pieces less than 6.35mm in size) in any one location in the cargo hold.

(f) Adequate surface ventilation must be provided when carrying or loading DRI hot-molded briquettes.

(g) When DRI hot-molded briquettes are carried by unmanned barge—

(1) The barge must be fitted with vents adequate to provide natural ventilation; and

(2) The cargo hatches must be closed at all times after loading the DRI hot-molded briquettes.

(h) Radar and RDF scanners must be adequately protected against dust generated during cargo transfer operations of DRI hot-molded briquettes.

(i) During final discharge only, a fine spray of water may be used to control dust from DRI hot-molded briquettes.

#### § 148.255 Ferrosilicon, aluminum ferrosilicon, and aluminum silicon containing more than 30% but less than 90% silicon.

(a) This section applies to the stowage and transportation of ferrosilicon, aluminum ferrosilicon, and aluminum silicon containing more than 30 percent but less than 90 percent silicon.

(b) The shipper of material described in paragraph (a) of this section must give the master a written certification stating that after manufacture the material was stored under cover, but exposed to the weather, in the particle size in which it is to be shipped, for at least three days before shipment.

(c) Material described in paragraph (a) of this section must be protected at all times from contact with water, and must not be loaded or unloaded during periods of rain or snow.

(d) Except as provided in paragraph (e) of this section, each hold containing



material described in paragraph (a) of this section must be mechanically ventilated by at least two separate fans. The total ventilation must be at least five air changes per hour, based on the empty hold. Ventilation must not allow escaping gas to reach accommodation or work spaces, on or under deck.

(e) An unmanned barge which is provided with natural ventilation need not comply with paragraph (d) of this section.

(f) Each space adjacent to a hold containing material described in paragraph (a) of this section must be well ventilated with mechanical fans. No person may enter that space unless it has been tested to ensure that it is free from phosphine and arsine gases.

(g) Scuttles and windows in accommodation and work spaces adjacent to holds containing material described in paragraph (a) of this section must be kept closed while this material is being loaded and unloaded.

(h) Any bulkhead between a hold containing material described in paragraph (a) of this section and an accommodation or work space must be gas tight and adequately protected against damage from any unloading equipment.

(i) When a hold containing material described in paragraph (a) of this section is equipped with atmosphere sampling type smoke detectors with lines that terminate in accommodation or work spaces, those lines must be blanked off gas-tight.

(j) If a hold containing material described in paragraph (a) of this section must be entered at any time, the hatches must be open for two hours before entry to dissipate any accumulated gases. The atmosphere in the hold must be tested to ensure that there is no phosphine or arsine gas present.

(k) After unloading material described in paragraph (a) of this section, each cargo hold must be thoroughly cleaned and tested to ensure that no phosphine or arsine gas remains.

#### § 148.260 Ferrous metal.

(a) This part does not apply to the stowage and transportation in bulk of stainless steel borings, shavings, turnings, or cuttings; nor does this part apply to an unmanned barge on a voyage entirely on the navigable waters of United States.

(b) Ferrous metal may not be stowed or transported in bulk unless the following conditions are met:

(1) All wooden sweat battens, dunnage, and debris must be removed from the hold before the ferrous metal is loaded;

(2) If weather is inclement during loading, hatches must be covered or otherwise protected to keep the material dry;

(3) During loading and transporting, the bilge of each hold in which ferrous metal is stowed or will be stowed must be kept as dry as practical;

(4) During loading, the ferrous metal must be compacted in the hold as frequently as practicable with a bulldozer or other means that provides equivalent surface compaction;

(5) No other material may be loaded in a hold containing ferrous metal unless—

(i) The material to be loaded in the same hold with the ferrous metal is not a material listed in Table 148.10 of this part or a readily combustible material;

(ii) The loading of the ferrous metal is completed first; and

(iii) The temperature of the ferrous metal in the hold is below 55 °C (131 °F) or has not increased in eight hours before the loading of the other material; and

(6) During loading, the temperature of the ferrous metal in the pile being loaded must be below 55 °C (131 °F).

(c) The master of a vessel that is loading or transporting a ferrous metal must ensure that the temperature of the ferrous metal is taken—

(1) Before loading;

(2) During loading, in each hold and pile being loaded, at least once every twenty-four hours and, if the temperature is rising, as often as is necessary to ensure that the requirements of this section are met; and

(3) After loading, in each hold, at least once every 24 hours.

(d) During loading, if the temperature of the ferrous metal in a hold is 93 °C (200 °F) or higher, the master must notify the Coast Guard Captain of the Port and suspend loading until the Captain of the Port is satisfied that the temperature of the ferrous metal is 88 °C (190 °F) or less.

(e) After loading ferrous metal—

(1) If the temperature of the ferrous metal in each hold is 65 °C (150 °F) or above, the master must notify the Coast Guard Captain of the Port, and the vessel must remain in the port area until the Captain of the Port is satisfied that the temperature of ferrous metal has shown a downward trend below 65 °C (150 °F) for at least eight hours after completion of loading of the hold; or

(2) If the temperature of the ferrous metal in each hold is less than 88 °C (190 °F) and has shown a downward trend for at least eight hours after the completion of loading, the master must notify the Coast Guard Captain of the

Port, and the vessel must remain in the port area until the Captain of the Port confirms that the vessel is sailing directly to another port, no further than 12 hours sailing time, for the purpose of loading more ferrous metal in bulk or to completely off-load the ferrous metal.

(f) Except for shipments of ferrous metal in bulk which leave the port of loading under the conditions specified in paragraph (e)(2) of this section, if after the vessel leaves the port, the temperature of the ferrous metal in the hold rises above 65 °C (150 °F), the master must notify the nearest Coast Guard Captain of the Port as soon as possible of—

(1) The name, nationality, and position of the vessel;

(2) The most recent temperature taken;

(3) The length of time that the temperature has been above 65 °C (150 °F) and the rate of rise, if any;

(4) The port where the ferrous metal was loaded and the destination of the ferrous metal;

(5) The last port of call of the vessel and its next port of call;

(6) What action has been taken; and

(7) Whether any other cargo is endangered.

#### § 148.265 Fish meal or fish scrap.

(a) This part does not apply to fish meal or fish scrap that contains less than 5 percent moisture by weight.

(b) Fish meal or fish scrap may contain a maximum of 12 percent moisture by weight and a maximum of 15 percent fat by weight.

(c) At the time of production, fish meal or fish scrap must be treated with an effective antioxidant (at least 400 mg/kg (ppm) ethoxyquin, at least 1000 mg/kg (ppm) butylated hydroxytoluene, or at least 1000 mg/kg (ppm) of tocopherol-based liquid antioxidant).

(d) Shipment of the fish meal or fish scrap must take place a maximum of 12 months after the treatment prescribed in paragraph (c) of this section.

(e) Fish meal or fish scrap must contain at least 100 mg/kg (ppm) of ethoxyquin or butylated hydroxytoluene or at least 250 mg/kg (ppm) of tocopherol-based antioxidant at the time of shipment.

(f) At the time of loading, the temperature of the fish meal or fish scrap to be loaded may not exceed 35 °C (95 °F), or 5 °C (41 °F) above the ambient temperature, whichever is higher.

(g) For each shipment of fish meal or fish scrap, the shipper must give the master a written certification stating—

(1) The total weight of the shipment;

(2) The moisture content of the material;

(3) The fat content of the material;

(4) The type of antioxidant and its concentration in the fish meal or fish scrap at the time of shipment;

(5) The date of production of the material; and

(6) The temperature of the material at the time of shipment.

(h) During a voyage, temperature readings must be taken of fish meal or fish scrap three times a day and recorded. If the temperature of the material exceeds 55 °C (131 °F) and continues to increase, ventilation to the hold must be restricted. This paragraph does not apply to shipments by unmanned barge.

#### **§ 148.270 Hazardous substances.**

(a) Each bulk shipment of a hazardous substance must—

(1) Be assigned a shipping name in accordance with 49 CFR 172.203(c); and

(2) If the hazardous substance is also listed as a hazardous solid waste in 40 CFR part 261, follow the applicable requirements of 40 CFR chapter I, subchapter I.

(b) Each release of a quantity of a designated substance equal to or greater than the reportable quantity, as set out in Table 1 to Appendix A of 49 CFR 171.101, when discharged into or upon the navigable waters of the United States, adjoining shorelines, into or upon the contiguous zone, or beyond the contiguous zone, must be reported as required in Subpart B of 33 CFR part 153.

(c) A hazardous substance must be stowed in a hold or barge that is closed or covered and prevents dispersal of the material during transportation.

(d) During cargo transfer operations, a spill or release of a hazardous substance must be minimized to the greatest extent possible. Each release must be reported as required in paragraph (b) of this section.

(e) After a hazardous substance is unloaded, the hold in which it was carried must be cleaned thoroughly. The residue of the substance must be disposed of pursuant to 33 CFR parts 151.55 through 151.77 and the applicable regulations of 40 CFR subchapter I.

#### **§ 148.275 Iron oxide, spent; iron sponge, spent.**

(a) Before spent iron oxide or spent iron sponge is loaded in a closed hold, the shipper must give the master a written certification that the material has been cooled and weathered for at least eight weeks.

(b) Both spent iron oxide and spent iron sponge may be transported on open hold all-steel barges after exposure to air for a period of at least ten days.

#### **§ 148.280 Magnesia, unslaked (lightburned magnesia, calcined magnesite, caustic calcined magnesite).**

(a) This part does not apply to the transport of natural magnesite, magnesium carbonate, or magnesia clinkers.

(b) When transported by barge, unslaked magnesia must be carried in an unmanned, all-steel, double-hulled barge equipped with weathertight hatches or covers. The barge may not carry any other cargo while unslaked magnesia is on board.

(c) The shipping paper requirements in § 148.60 and the dangerous cargo manifest requirements in § 148.70 do not apply to unslaked magnesia transported under the requirements of paragraph (b) of this section.

#### **§ 148.285 Metal sulfide concentrates.**

(a) When information given by the shipper under § 148.60 indicates that the metal sulfide concentrate may generate toxic or flammable gases, the appropriate gas detection equipment from §§ 148.415 and 148.420 must be on board the vessel.

(b) No cargo hold containing a metal sulfide concentrate may be ventilated.

(c) No person may enter a hold containing a metal sulfide concentrate unless—

(1) The atmosphere in the cargo hold has been tested and contains sufficient oxygen to support life and, where the shipper indicates that toxic gas(es) may be generated, the atmosphere in the cargo hold has been tested for the toxic gas(es) and the concentration of the gas(es) is found to be less than the TLV; or

(2) An emergency situation exists and the person entering the cargo hold is wearing the appropriate self-contained breathing apparatus.

#### **§ 148.290 Peat moss.**

(a) Before shipment, peat moss must be stockpiled under cover to allow drainage and reduce its moisture content.

(b) The cargo must be ventilated so that escaping gases cannot reach living quarters on or above deck.

(c) Persons handling or coming into contact with peat moss must wear gloves, a dust mask, and goggles.

#### **§ 148.295 Petroleum coke, calcined or uncalcined, at 55 °C (131 °F) or above.**

(a) This part does not apply to shipments of petroleum coke, calcined or uncalcined, on any vessel when the temperature of the material is less than 55 °C (131 °F).

(b) Petroleum coke, calcined or uncalcined, or a mixture of calcined and

uncalcined petroleum coke may not be loaded when its temperature exceeds 107 °C (225 °F).

(c) No other hazardous materials may be stowed in any hold adjacent to a hold containing petroleum coke except as provided in paragraph (d) of this section.

(d) Before petroleum coke at 55 °C (131 °F) or above may be loaded into a hold over a tank containing fuel or material having a flashpoint of less than 93 °C (200 °F), a 0.6 to 1.0 meter (2 to 3 foot) layer of the petroleum coke at a temperature not greater than 43 °C (110 °F) must first be loaded.

(e) Petroleum coke must be loaded as follows:

(1) For a shipment in a hold over a fuel tank, the loading of a cooler layer of petroleum coke in the hold as required by paragraph (d) of this section must be completed before loading the petroleum coke at 55 °C (131 °F) or above in any hold of the vessel;

(2) Upon completion of the loading described in paragraph (e)(1) of this section, a 0.6 to 1.0 meter (2 to 3 foot) layer of the petroleum coke at 55 °C (131 °F) or above must first be loaded into each hold, including those holds already containing a cooler layer of the petroleum coke; and

(3) Upon completion of the loading described in paragraph (e)(2) of this section, normal loading of the petroleum coke may be completed.

(f) The master of the vessel must warn members of a crew that petroleum coke is hot, and that injury due to burns is possible.

(g) During the voyage, the temperature of the petroleum coke must be monitored often enough to detect spontaneous heating.

#### **§ 148.300 Radioactive materials.**

(a) Radioactive materials that may be stowed or transported in bulk are limited to those radioactive materials defined in 49 CFR 173.403 as Low Specific Activity Material, LSA-1, or Surface Contaminated Object, SCO-1.

(b) Skin contact, inhalation or ingestion of dusts generated by Class 7 material listed in Table 148.10 of this part must be minimized.

(c) Each hold used for the transportation of Class 7 material (radioactive) listed in Table 148.10 of this part must be surveyed after the completion of off-loading by a qualified person using appropriate radiation detection instruments. Such holds must not be used for the transportation of any other material until the non-fixed contamination on any surface, when averaged over an area of 300 cm<sup>2</sup>, does not exceed the following levels:

(1) 4.0 Bq/cm<sup>2</sup> (10<sup>-4</sup> uCi/cm<sup>2</sup>) for beta and gamma emitters and low toxicity alpha emitters, natural uranium, natural thorium, uranium-235, uranium-238, thorium-232, thorium-228 and thorium-230 when contained in ores or physical or chemical concentrates, and radionuclides with a half-life of less than 10 days; and

(2) 0.4 Bq/cm<sup>2</sup> (10<sup>-5</sup> uCi/cm<sup>2</sup>) for all other alpha emitters.

**§ 148.310 Seed cake.**

(a) This part does not apply to solvent-extracted rape seed meal, pellets, soya bean meal, cotton seed meal, or sunflower seed meal that—

(1) Contains a maximum of 4 percent vegetable oil and a maximum of 15 percent vegetable oil and moisture combined; and

(2) As far as practical, is free from flammable solvent.

(b) This part does not apply to mechanically expelled citrus pulp pellets containing not more than 2.5 percent oil and a maximum of 14 percent oil and moisture combined.

(c) Before loading, the seed cake must be aged per the instructions of the shipper.

(d) Before loading, the shipper must give the master or person in charge of a barge a certificate from a competent testing laboratory stating the oil and moisture content of the seed cake.

(e) The seed cake must be kept as dry as practical at all times.

(f) If the seed cake is solvent-extracted, it must be—

(1) As free as practical from flammable solvent; and

(2) Stowed in a mechanically ventilated hold.

(g) For a voyage with a planned duration greater than 5 days, the vessel must be equipped with facilities for introducing carbon dioxide or another inert gas into the hold.

(h) Temperature readings of the seed cake must be taken at least once in every 24-hour period. If the temperature exceeds 55 °C (131 °F) and continues to increase, ventilation to the cargo hold must be discontinued. If heating continues after ventilation has been discontinued, carbon dioxide or the inert gas required under paragraph (g) of this section must be introduced into the hold. If the seed cake is solvent-extracted, the use of inert gas must not be introduced until fire is apparent, to avoid the possibility of igniting the solvent vapors by the generation of static electricity.

(i) Seed cake must be carried under the terms of a Special Permit issued by the Commandant (CG-5223) per subpart B of this part if—

(1) The oil was mechanically expelled; and

(2) It contains more than 10 percent vegetable oil or more than 20 percent vegetable oil and moisture combined.

**§ 148.315 Sulfur.**

(a) This part applies to lump or coarse grain powder sulfur only. Fine-grained powder (“flowers of sulfur”) may not be transported in bulk.

(b) After the loading or unloading of lump or coarse grain powder sulfur has been completed, sulfur dust must be removed from the vessel’s decks, bulkheads, and overheads. Cargo residues and deck sweepings must be disposed of pursuant to 33 CFR parts 151.55 through 151.77.

(c) A cargo space that contains sulfur or the residue of a sulfur cargo must be adequately ventilated, preferably by mechanical means. Each ventilator intake must be fitted with a spark-arresting screen.

**§ 148.320 Tankage; garbage tankage; rough ammonia tankage; or tankage fertilizer.**

(a) This part applies to rough ammonia tankage in bulk that contains 7 percent or more moisture by weight, and garbage tankage and tankage fertilizer that contains 8 percent or more moisture by weight.

(b) Tankage to which this part applies may not be loaded in bulk if its temperature exceeds 38 °C (100 °F).

(c) During the voyage, the temperature of the tankage must be monitored often enough to detect spontaneous heating.

**§ 148.325 Wood chips; wood pellets; wood pulp pellets.**

(a) This part applies to wood chips and wood pulp pellets in bulk that may oxidize, leading to depletion of oxygen and an increase in carbon dioxide in the cargo hold.

(b) No person may enter a cargo hold containing wood chips, wood pellets, or wood pulp pellets, unless—

(1) The atmosphere in the cargo hold has been tested and contains enough oxygen to support life; or

(2) The person entering the cargo hold is wearing the appropriate self-contained breathing apparatus.

**§ 148.330 Zinc ashes; zinc dross; zinc residues; zinc skimmings.**

(a) The shipper must inform the cognizant Coast Guard Captain of the Port in advance of any cargo transfer operations involving zinc ashes, zinc dross, zinc residues, or zinc skimmings (collectively, “zinc material”) in bulk.

(b) Zinc material must be aged by exposure to the elements for at least one year before shipment in bulk.

(c) Before loading in bulk, zinc material must be stored under cover for a period of time to ensure that it is as dry as practical. No zinc material that is wet may be accepted for shipment.

(d) Zinc material may not be loaded in bulk if its temperature is greater than 11.1 °C (52 °F) in excess of the ambient temperature.

(e) Paragraphs (e)(1) through (e)(5) of this section apply only when zinc materials are carried by a cargo vessel:

(1) Zinc material in bulk must be stowed in a mechanically ventilated hold that—

(i) Is designed for at least one complete air change every 30 minutes based on the empty hold;

(ii) Has explosion-proof motors approved for use in Class I, Division 1, Group B atmospheres or equivalent motors approved by the vessel’s flag state administration for use in hydrogen atmospheres; and

(iii) Has nonsparking fans.

(2) Combustible gas detectors capable of measuring hydrogen concentrations of 0 to 4.1 percent by volume must be permanently installed in holds that will carry zinc material. If the concentration of hydrogen in the space above the cargo exceeds 1 percent by volume, the ventilation system must be run until the concentration drops below 1 percent by volume.

(3) Thermocouples must be installed approximately 6 inches below the surface of the zinc material or in the space immediately above the zinc material. If an increase in temperature is detected, the mechanical ventilation system required by paragraph (d) of this section must be used until the temperature of the zinc material is below 55 °C (131 °F).

(4) Except as provided in paragraph (e)(5) of this section, the cargo hatches of holds containing zinc material must remain sealed to prevent the entry of seawater.

(5) If the concentration of hydrogen is near 4.1 percent by volume and increasing, despite ventilation, or the temperature of the zinc material reaches 65 °C (150 °F), the cargo hatches should be opened provided that weather and sea conditions are favorable. When hatches are opened take care to prevent sparks and minimize the entry of water.

**Subpart F—Additional Special Requirements**

**§ 148.400 Applicability.**

Unless stated otherwise, the requirements of this subpart apply only to the shipment or loading of materials, listed in Table 148.10 of this part, for which Table 148.10 contains a reference to a section or paragraph of this subpart.

**§ 148.405 Sources of ignition.**

(a) Except in an emergency, no welding, burning, cutting, chipping, or other operations involving the use of fire, open flame, sparks, or arc-producing equipment, may be performed in a cargo hold containing a Table 148.10 material or in an adjacent space.

(b) A cargo hold or adjacent space must not have any flammable gas concentrations over 10 percent of the LFL before the master may approve operations involving the use of fire, open flame, or spark- or arc-producing equipment in that hold or adjacent space.

**§ 148.407 Smoking.**

When Table 148.10 of this part associates a material with a reference to this section, and that material is being loaded or unloaded, smoking is prohibited anywhere on the weatherdeck of the vessel. While such a material is on board the vessel, smoking is prohibited in spaces adjacent to the cargo hold and on the vessel's deck in the vicinity of cargo hatches, ventilator outlets, and other accesses to the hold containing the material. "NO SMOKING" signs must be displayed in conspicuous locations in the areas where smoking is prohibited.

**§ 148.410 Fire hoses.**

When Table 148.10 of this part associates a material with a reference to this section, a fire hose must be available at each hatch through which the material is being loaded.

**§ 148.415 Toxic gas analyzers.**

When Table 148.10 of this part associates a material with a reference to a paragraph in this section, each vessel transporting the material, other than an unmanned barge, must have on board a gas analyzer appropriate for the toxic gas listed in that paragraph. At least two members of the crew must be knowledgeable in the use of the equipment. The equipment must be maintained in a condition ready for use and calibrated according to the instructions of its manufacturer. The atmosphere in the cargo hold and adjacent spaces must be tested before a person is allowed to enter these spaces. If toxic gases are detected, the space must be ventilated and retested before entry. The toxic gases for which the requirements of this section must be met are:

- (a) Arsine,
- (b) Carbon monoxide,
- (c) Hydrogen cyanide,
- (d) Hydrogen sulfide,
- (e) Phosphine, and

(f) Sulfur dioxide.

**§ 148.420 Flammable gas analyzers.**

When Table 148.10 of this part associates a material with a reference to a paragraph in this section, each vessel transporting the material, other than an unmanned barge, must have on board a gas analyzer appropriate for the flammable gas listed in that paragraph. At least two members of the crew must be knowledgeable in the use of the equipment. The equipment must be maintained in a condition ready for use, capable of measuring 0 to 100 percent LFL for the gas indicated, and calibrated in accordance with the instructions of its manufacturer. The atmosphere in the cargo hold must be tested before any person is allowed to enter. If flammable gases are detected, the space must be ventilated and retested before entry. The flammable gases for which the requirements of this section must be met are:

- (a) Carbon monoxide,
- (b) Hydrogen, and
- (c) Methane.

**§ 148.435 Electrical circuits in cargo holds.**

During transport of a material that Table 148.10 of this part associates with a reference to this section, each electrical circuit terminating in a cargo hold containing the material must be electrically disconnected from the power source at a point outside of the cargo hold. The point of disconnection must be marked to prevent the circuit from being reenergized while the material is on board.

**§ 148.445 Adjacent spaces.**

When transporting a material that Table 148.10 of this part associates with a reference to this section, the following requirements must be met:

- (a) Each space adjacent to a cargo hold must be ventilated by natural ventilation or by ventilation equipment safe for use in an explosive gas atmosphere;
- (b) Each space adjacent to a cargo hold containing the material must be regularly monitored for the presence of the flammable gas indicated by reference to § 148.420. If the level of flammable gas in any space reaches 30 percent of the LFL, all electrical equipment that is not certified safe for use in an explosive gas atmosphere must be de-energized at a location outside of that space. This location must be labeled to prohibit reenergizing until the atmosphere in the space is tested and found to be less than 30 percent of the LFL;
- (c) Each person who enters any space adjacent to a cargo hold or compartment

containing the material must wear a self-contained breathing apparatus unless—

- (1) The space has been tested, or is routinely monitored, for the appropriate flammable gas and oxygen;
- (2) The level of flammable gas is less than 10 percent of the LFL; and
- (3) The level of toxic gas, if required to be tested, is less than the TLV;
- (d) No person may enter an adjacent space if the level of flammable gas is greater than 30 percent of the LFL. If emergency entry is necessary, each person who enters the space must wear a self-contained breathing apparatus and caution must be exercised to ensure that no sparks are produced.

**§ 148.450 Cargoes subject to liquefaction.**

(a) This section applies only to cargoes identified in Table 148.10 of this part with a reference to this section and cargoes identified in the IMSBC Code (incorporated by reference, see § 148.8) as cargoes that may liquefy.

(b) This section does not apply to—

- (1) Shipments by unmanned barge; or
- (2) Cargoes of coal that have an average particle size of 10mm (.394 in.) or greater.

(c) Definitions as used in this section—

(1) *Cargo subject to liquefaction* means a material that is subject to moisture migration and subsequent liquefaction if shipped with moisture content in excess of the transportable moisture limit.

(2) *Moisture migration* is the movement of moisture by settling and consolidation of a material, which may result in the development of a flow state in the material.

(3) *Transportable moisture limit* or *TML* of a cargo that may liquefy is the maximum moisture content that is considered safe for carriage on vessels.

(d) Except on a vessel that is specially constructed or specially fitted for the purpose of carrying such cargoes (see also section 7 of the IMSBC Code, incorporated by reference, see § 148.8), a cargo subject to liquefaction may not be transported by vessel if its moisture content exceeds its TML.

(e) The shipper of a cargo subject to liquefaction must give the master the material's moisture content and TML.

(f) The master of a vessel shipping a cargo subject to liquefaction must ensure that—

- (1) A cargo containing a liquid is not stowed in the same cargo space with a cargo subject to liquefaction; and
- (2) Precautions are taken to prevent the entry of liquids into a cargo space containing a cargo subject to liquefaction.

(g) The moisture content and TML of a material may be determined by the tests described in Appendix 2, Section

1, of the IMSBC Code (incorporated by reference, *see* § 148.8).

Dated: June 10, 2010.

**F.J. Sturm,**

*Acting Director of Commercial Regulations and Standards, U.S. Coast Guard.*

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