DEPARTMENT OF TRANSPORTATION

Materials Transportation Bureau

[49 CFR Part 172]

[Docket No. HM-126A: Notice No. 79-9]

Display of Hazardous Materials Identification Numbers; Improved Emergency Response Capability

AGENCY: Materials Transportation Bureau, Research and Special Programs. Administration, Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking.

SUMMARY: The Materials Transportation Bureau (MTB) proposes to adopt a numerical identification system for hazardous materials transported in commerce. These identification numbers would be required to be displayed on shipping papers and packages in association with the required hazardous material descriptions. They would be required to be displayed on orange panels affixed to portble tanks, cargo tanks, and tank cars containing hazardous meterials. The purpose of the proposed regulations is to improve the capability of emergency response personnel (fire, police, et al) to quickly identify hazardous materials and to assure the accurate transmission of information to and from the scenes of accidents involving hazardous materials.

DATES: Comments must be received on or before August 7, 1979.

ADDRESS COMMENTS TO: Dockets Branch, Materials Transportation Bureau, Washington, D.C. 20590 (telephone: 202-472-2726). It is requested that five copies be submitted.

FOR FURTHER INFORMATION CONTACT: L. Metcalfe, Standards Division, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590, 202-426-0656.

SUPPLEMENTARY INFORMATION: This Notice proposes the adoption of an identification numbering system for hazardous materials based primarily on the system adopted for worldwide use by the United Nations Committee of Experts on the Transport of Dangerous Goods. Use of the identification numbering system will provide for improved identification of hazardous materials and the communication of information concerning the handling of such materials when they are involved in transportation accidents. Display of identification numbers would be required in connection with descriptions on shipping papers, on packages of 110 gallons capacity or less, and would be required on orange panels affixed to portable tanks, cargo tanks and tank cars. The MTB believes the use of identification numbers will provide an improved capability to quickly obtain and transmit accurate information about hazardous materials involved in accidents in order to obtain information necessary to deal with such accidents. Another element the MTB believes to be important in providing an improved emergency response capability is a manual it has under development. It will associate identification numbers with brief, concise instructions that will assist emergency personnel during the first minutes of a hazardous materials accident.

Many expressions of interest concerning the need to improve hazardous materials emergency response capabilities have been received from members of Congress, the National Transportation Safety Board, the Secretary of Transportation's Hazardous Materials Task Force, state officials, and most important, fire, police and other emergency service organizations. The MTB believes that the improvements proposed in this Notice will, if adopted, provide the basis for an improved emergency response capability that is not presently available through direct use of technical names; e.g., hexadecyltrichlorosilane (UN 1781), to identify hazardous materials and accurately and quickly communicate information about them.

The primary drafters of this Notice are Alan I. Roberts and Lee E. Metcalfe of the Materials Transportation Bureau.

Background

On June 25, 1975, the Hazardous Materials Regulations Board (HMRB) published in the Federal Register (40 FR 26688, Docket HM-126) a request for public comment on hazard information systems. The request listed nine factors to be considered in the evaluation of a hazard information system:

1. Capability of the general public to recognize the existence of the immediate dangers presented by a material;
2. Presentation of information in a manner so that the general public will be able to accurately transmit basic information to emergency response personnel;
3. Compatibility, intermodally and internationally;
4. Capability of application to both bulk and non-bulk shipments;
5. Capability of functioning without use of a manual or other subsidiary documents;
6. Capability to meet the needs of emergency response personnel, carriers, shippers, and the general public;
7. Capability of integration with documentation, packaging, and vehicle identification requirements to help insure accuracy;
8. Capability of implementation without undue economic burden on shippers and carriers; and
9. Capability of indicating degree of hazard.

The request for public comments went on to describe nine different systems that either had been proposed to the Department or were known to be supported by one or more segments of the affected industry or emergency response community. An exception was the DOT hazardous materials information system which was previously subject of a rulemaking proposal under Docket HM-103. The MTB has considered all of these systems and the comments that were received in response to the request, and is now of the view that none are acceptable for adoption. The following is a summary of some of the reasons for this conclusion:

1. At least two of the systems would employ a preassigned before shipment numbering technique to provide specific action information or an indication of the level of hazard (Hazchem, NFPA 704). Although preassignment of numbers presumably would be made by MTB, commenters have not recommended any criteria except for flammability. Use of preassigned numbers would impose substantial delays on the introduction of new materials into commerce and the extensive effort and resources necessary for implementation would make such a system unworkable.

2. Several of the systems would employ numbers or words based primarily on the hazards or properties of a material (HI, RID/ADR, USCG, IATA, Union Carbide, Air Products, Pennwalt). The MTB believes that reliance on the identification of hazards alone is no longer a feasible approach, that specific identification of many materials is essential to the accomplishment of an improved emergency response program. Communication of hazards is important in the initial phases of an accident, and appropriate first contact handling information can be based on hazards; however, many accident situations dictate the need for more detailed information on how to deal with specifically identified materials. This is particularly so in accidents involving

combinations of hazardous materials as is frequently the case in major train derailments.

3. One system would call for shippers to furnish the carrier an emergency response form that would move with each rail car (Canadian Transport Commission). While the basic idea has merit, the MTB considers that (1) such a system would result in the production of emergency response information widely varying in content based on subjective judgments of different shippers, except where industry associations might prepare response information for common materials; (2) the enforceability of such a requirement without detailed Government guidelines would be questionable; and (3) while such a program may be workable for bulk shipments and full loads, the huge amount of paperwork involved would make its implementation impracticable for less-than-carload shipments.

4. One system would call for display of the order of severity in three risk categories—health, flammability, and reactivity (NFPA 704). The MTB and its predecessor have examined the utility of such a system on several occasions. However, no criteria have been suggested for the health and reactivity presentation; therefore, qualitative evaluations must be made in assigning levels of hazard (hence, the preassignment factor discussed in 1 above). In addition, this proposed system places too many hazard factors into three fields, thereby precluding appropriate assessment. Examples are the assignment of health hazard level three to chlorine, liquid oxygen, sodium hydroxide (lye), hydrogen sulfide, and tetraethyl-lead, and the assignment of reactivity level one to calcium oxide (quicklime), antimony pentachloride and chromic acid. The kind of hazard and the extent of the hazard posed by each of these materials is very different from that posed by the others that share the same assigned number. The appropriate action required to handle accidents invoving these materials also is quite different in each case. Consequently such a system is not appropriate for use in a transportation emergency response situation.

The MTB believes that determination of the degree of hazard beyond an examination of the properties of a material requires an assessment of the environment and circumstances at the scene of an accident. In most instances, a preliminary determination of risk can be made based on the information obtained at the scene of an accident. If the initial assessment reveals that a potentially serious situation exists; e.g., a large spill from a tank vehicle placarded POISON and bearing an identification number, then, beyond that basic initial response information provided in the proposed manual, a call should be made to the central response information center to obtain expert advice in fully assessing the level of risk based on the accident environment; i.e., topography, wind direction, proximity to habitations, configuration of the accident, etc., and the properties and quantity of the spilled material in relation thereto. It is not conceivable that all the factors that must be considered in determining risk can be transmitted directly from placards on transport vehicles. Therefore, the identification numbering system has been selected as the best means to assist in quicker and more accurate determinations of risk.

The MTB extends its appreciation to the many individuals, companies, and organizations for their considerable efforts in preparing and submitting comments in reply to the Request for Public Comment. A number of comments were accepted and previously adopted under Docket HM-112, and others not directly related to the proposals in this Notice will be considered in a future rulemaking action.

Of all the comments received in response to the Request, the MTB finds those presented by the Association of American Railroads (AAR) particularly supportive of the concepts on which the proposals in this Notice are based. For this reason, we restate a large portion of the AAR comments:

The Basic Requirements of a Hazard Information System

The communication of hazard information is a very difficult task. It must be capable of use by many different groups, each with a different need for information, and it must be usable in an emergency environment without requiring the use of potentially unavailable supplementary materials. The information which it transmits must be easily recognized, quickly understood and accurately communicated.

Who Needs a Hazard Information System?

The most general answer to this question is that anyone who may potentially come in contact with a transportation accident involving hazardous materials needs an information system in order to be able to make intelligent decisions about the safety of his own life and property and about the lives and property of others.

The general public is the broadest and most inclusive subcategory of people with a need. This group includes both those who are at the scene of an incident and know it and those who are in proximity and are not aware of it. As a rule of thumb, it is probable that no system of hazard information will protect those who are not able to immediately view the sight of the incident except as it alerts those who are in proximity and then pass along the message.

Carrier and shipper personnel are the next group of people with a need for a hazard information system. They may be considered to have certain minimal training in either necessary response countermeasures or in the ability to communicate the fact that an incident involving hazardous materials has taken place.

Emergency response personnel, generally, are taken to be the police and fire departments serving the area in which the hazardous incident takes place. Despite the wide variation in training and competence of such personnel, they are assumed, at a minimum, to be familiar with routine fire fighting and evacuation procedures and, at a more sophisticated level, may be able to apply advanced levels of countermeasure technology.

Expert emergency response teams consist of those with special training in dealing with hazardous commodities. They may be in the employ of shippers and manufacturers, carriers, and governmental agencies. They consist of that group with the highest possible degree of knowledge about the specific commodities involved in particular incidents.

What Is Required of a Hazard Information System?

Each of the four groups outlined above has different needs for a system of hazard information.

The general public should be made aware immediately that a hazard exists and should be able to communicate the very basic facts of that hazard to experts with a higher level of knowledge. These basic facts include the location of the incident, the type of vehicle involved, the occurrence of leakeage, fire or explosion and, if vehicle markings are seen, transmission of the fact of such markings or of the wording on them.

Carrier and shipper personnel should be able to communicate all of the information possessed by the general public and, in addition, they should be able to identify the nature of the hazard involved. By having access to the

shipping papers, the carrier and shipper personnel will be able to pass along detailed information concerning the commodities involved to their superiors and to the first emergency units to arrive at the scene. In some instances, carrier and shipper personnel information such as that provided by CHEMTREC.

[Emergency] response personnel require immediate information on the nature of the hazards of the materials involved and any special handling requirements. They should be able to use the information obtained from lower levels of response sophistication to access more detailed data to assist them in handling the specific product involved under the circumstances prevailing at the time of the accident.

Expert emergency response teams need to be able to use the information obtained at the scene and from lower level response groups to provide the most detailed and sophisticated direction for the handling of the incident. They should also be able to assist in proper cleanup and disposal activities following the immediate minimumization of threats to life and property.

Summary

Having analyzed the abilities and needs of those who will have contact with any hazard information system, its essentials are easily stated:

- It must be immediately recognizable as a system describing the existence of a hazard.
- It must be readily understandable by anyone who comes in contact with it.
- The information gained by anyone who comes in contact with it must be readily communicable to all others with a need to know.
- For those with a greater degree of ability, it must be indicative of a reponse pattern applicable to the particular incident.
- It must be uniform among all transportation modes.
- It must be capable of accommodating new hazardous commodities and, for higher levels of sophistication, it would be desirable that it be capable to easy computer implementation.

The Components of the Hazard Information System Developed by the AAR

In this section of the AAR's comments, the primary component parts of our hazard information system will be discussed and, wherever possible, related to the needs of various parties as recognized above.

Shipping Papers

The railroad industry believes that primary reliance must be placed on the shipping papers for information on the name of the product involved and its hazards. Historically, the shipping paper has been seen as the only single source of complete identifying information which travels with a shipment of hazardous materials. Because of all the important exemptions which appear in the regulations for the labeling and placarding of hazardous materials, the complete identification of particular shipments can be accomplished only through the shipping papers which accompany it. The recognition of deficiencies in the current use and content of shipping papers has led to the development of recommendations by the AAR for their correction.

Currently, shipping papers identify only the required classification, that is, the "primary hazard" of the material. This is no longer sufficient; the regulations must be amended to require the inclusion of all major hazards ["major hazards" are those recognized to the tertiary level] for dangerous commodities. This will mean that a shipment of, for instance, sulphuric acid must now be listed on [the] shipping paper as "SULPHURIC ACID, corrosive material, poisonous liquid, Class B."

To make the presence of hazardous materials obvious on the shipping paper, the proper shipping name and all hazards must be listed first and consecutively in each commodity's freight description. The order of materials (regulated or non-regulated) as listed on the shipping paper can be random if this previously described format is employed. The uniform presentation of information on shipping papers will enable transportation and emergency response personnel to readily identify hazardous materials from their descriptions and classifications.

In order to hasten the ability of on-scene personnel to contact those with expert technical information about the commodities involved, an emergency telephone number must be added to the shipping document. This telephone number must provide, on a 24-hour basis, immediate access to emergency assistance from the shipper, a designated industry response group, CHEMTREC, The Bureau of Explosives, or whatever source is deemed by the shipper to be best. It is of the utmost importance that both the immediate and long-term response to a hazardous materials incident be initiated as quickly as possible. In view of the potential for reducing injury, danger to property and adverse environmental consequences, the requirement for an emergency telephone number on shipping documents, to be placed there by the shipper, is a minimal burden.

The railroads of the United States have established a numerical Standard Transportation Commodity Code (STCC) for identifying hazardous materials. The use of STCC numbers is required by mutual railroad agreement and the number is exhibited on waybills covering all shipments. Recent efforts by the STCC Technical Committee of the AAR have resulted in the development of a new series of STCC numbers whose purpose is to specifically identify discrete hazardous materials. This "49-series" was made effective January 1, 1976 and is the vehicle for hazardous materials management which the transportation industry has long needed.

STCC numbers are 7-digit combinations assigned to specific commodities based on hazard characteristics. Within the 7-digit STCC number a means is provided to allow the quick identification of primary, secondary and, in some cases, tertiary hazards, whether or not hazards subordinate to the primary hazard are now recognized by DOT. The 49-series begins with the first two digits, 49, as an identifier for hazardous materials. The next three digits identify the potential hazards of the materials and the final two digits identify the specific commodity * * *.

It is important to note that many materials properly shipped under a general classification, *i.e.*, "flammable liquids, n.o.s.", have now been given specific 49-series STCC numbers based on the specific tariff description currently used. Their movement in transportation is well documented, and therefore, these commodities, as listed in STCC Tariff 1-D (or subsequent revisions), should henceforth be listed in § 172.5 as proper shipping names. The railroads request that the Hazardous Materials Regulations require the shipper to insert the STCC numbers on all shipping papers tendered with goods for transportation. Only [the] shipper knows enough about the materials he produces and ships to ensure the accurate assignment of STCC numbers.

The STCC Code is designed to be flexible and to allow for future expansion to include both new commodities and new combinations of [hazard] classification; a section is already reserved in the STCC Code to designate substances which are environmentally hazardous as defined

by the Environmental Protection Agency.

The precise logic which has been employed to create the 49-series has resulted in numbers whose utility far surpasses those proposed by other organizations including MCA and the United Nations. The middle three digits provide a complete set of numbers to reveal all major potential hazards of each product and this unique feature does not exist in any other system of which the AAR is aware * * *.

The AAR insists that no secondary, untried system of "hazard numbers" be implemented. The 49-series STCC Code is now in existence and in use and the next revision of the Bureau of [Explosives] publication "Emergency Handling of Hazardous Materials in Surface Transportation" will contain a complete listing of all commodities in the 49-series code and the appropriate hazard information for handling emergency situations involving these commodities. A cross reference index will be supplied to locate commodity information if only the 49-series STCC number is known; in addition, a growing number of rail carriers will be able to provide hard copy information about the commodities involved by entering the STCC numbers of commodities involved in incidents into their computers.

Out of an abundance of caution, it must be emphasized that the STCC Code does *not* make the railroads' system just another "numbers game" Hazard Information System. STCC numbers allow precise commodity identification and verification, allow computer accessing for commodity information, provide a means for the retention of hazardous materials movement statistics and assist in the computer generation of shipping documents. They are not intended for use by the general public and, thus, require no first-level-of-response decoding. Their primary purpose is fulfilled at the shipper/carrier interface and in the ability of the shipper or carrier to make precise commodity information known to emergency personnel * * *.

Emergency Action Guide

A unique feature of the AAR Hazard Information System is the Emergency Action Guide for Hazardous Materials Incidents * * *.

The purpose of the Emergency Action Guide is to indicate, primarily for carrier personnel, an initial response pattern to be taken to save lives and prevent injuries. Such an initial response will usually not extend beyond the first fifteen minutes or so following an accident and, with this in mind, the Guide identifies the basic nature of the hazard for each classification of material and describes the "ground rules" for initial emergency action. The Guide, while not suggested as a mandatory requirement, is proposed to be included as part of a trainman's timetable for relevant operations and could be displayed by poster in cabooses and locomotives. When reproduced on durable material, and perhaps folded, such a guide could also be carried in truck cabs, fire engines, and police vehicles. Recommended procedures for using the Guide would include instructions to those to whom it is issued to read it in advance of an emergency in order that, when an emergency occurred, the particular applicable section of the Guide could be easily found.

A basic purpose of the Emergency Action Guide is to fill the gap between the accident and the receipt of information from the party responding to the emergency telephone number and, even if the Guide was not part of the information carried on local community emergency vehicles, it could be available from the train crew, or from the truck driver, to assist the first emergency units on the scene.

The above is not a complete reproduction of the AAR's comments, nor is the copyrighted AAR Emergency Action Guide reproducible in this notice. Sample pages submitted by the AAR may be reviewed in the docket file. However, the quoted comments are representative of AAR's viewpoints concerning matters covered by this Notice. The MTB agrees that primary reliance must still be placed on shipping papers for information relative to "non-bulk" shipments, and that while the display of information on shipping papers has considerably improved following the adoption of regulations under Docket HM-112, further improvements are necessary. The MTB agrees that an identification number should be assigned to hazardous materials for rapid communication of information and employment in the emergency response system. The MTB agrees with the AAR that an emergency action guide or emergency response manual should be employed in the improved system. However, the MTB does not fully agree with the AAR's recommendations on how to accomplish improvements in these three areas.

The Identification Numbers

The MTB is proposing that the UN numbering system be used as the basis for implementation of an improved emergency response system. For a number of years, the United Nations Committee of Experts on the Transport of Dangerous Goods has been assigning identification numbers to specific chemicals and generic descriptions for "dangerous goods." This system is becoming more and more recognized on a worldwide basis. It is referenced in the Dangerous Good Code of the International Maritime Consultative Organization and is under consideration for adoption in the forthcoming standards to be implemented by the International Civil Aviation Organization. This system also is referenced in variouis procedural documents under development pertaining to international trade documentation. The MTB recently was advised by its Canadian Government counterpart, Transport Canada, that UN identification numbers will be used within Canada in connection with shipments of hazardous materials and that the numbers will be the basis for the Canadian emergency response system.

Several important factors were considered by the MTB in deciding to propose the use of the basic UN numbering system for improved emergency response information:

1. The numbers are assigned by Governmental authorities under the aegis of the Economic and Social Council of the United Nations and have the same meaning throughout worldwide commerce.

2. They have been assigned specifically to identify hazardous materials (dangerous goods) and are intended to have no other meaning or use. Thus, their formulation and application is not dictated by any other competing or overriding considerations.

3. They are assigned, for the most part, to materials requiring separate recognition that are shipped in commercial quantities. Therefore, only four digits are necessary. Other chemical identifier systems have as many as nine digits. The fewer the digits in an identification number, the greater its reliability in an emergency response system employing radio and telephone communications.

4. Numbers are assigned on the basis of the next open number without regard to the particular chemical properties of a material, thereby, avoiding any problems in the availability of numbers for future assignments. Availability of numbers almost inevitably would be a problem if the internal arrangement of digits was meant to have some special meaning; e.g., a chemical grouping or properties assignment. The use of

identification numbers will (1) serve to verify descriptions of chemicals; (2) provide for rapid identification of materials when it may be inappropriate or, even worse, confusing to require display of lengthy chemical names on vehicles; (3) assist in preparation of correct documentation when language translation is necessary; and (4) be an aid in speeding communication of information on materials from accident scenes and the return of more accurate emergency response information. For example, the UN number for acetone is 1090, while the number for acetone cyanohydrin in 1541—a distinction of great importance in conveying appropriate emergency response information.

It is proposed to list UN or U.S. identification numbers in a new column 3a of § 172.101. The number will be preceded by "UN" if the description preceding it is exactly the same or sufficiently similar to the international description (as displayed in the IMCO Code). If the description in § 172.101 is significantly different but addresses the same material as a UN entry, it will be given the same number but will be preceded by "NA" in the United States and Canada. A four-digit number beginning with "9" indicates there is no corresponding UN description (specific or generic) for the material assigned that number. This is the mechanism the MTB and Transport Canada propose to use to assign identification numbers to materials, such as hazardous substances, that have not as yet been assigned numbers by the United Nations Committee of Experts.

The AAR is to be complimented on its attempts to implement a hazardous materials identification numbering system. Its efforts in this regard have, in MTB's opinion, led the way towards providing an improved emergency response capability for hazardous materials. This Standard Transportation Commodity Code (STCC) system, in the absence of any established alternative, is being used in U.S. rail transport with increased frequency. Nevertheless, the MTB believes that what it is proposing in this Notice is preferable to the STCC system as a national, multimodal system for the following reasons:

1. While the 49 STCC series is not to be used for economic purposes, by necessity its formulation was constrained by the need for it to "bridge" into other STCC series numbers established for freight rating/statistical purposes. The following STCC listings illustrate this point:

Specified name in STCC tariff 1-G	STCC number
Combustible liquid n.o.s. (asphalt tile plasticizer)	49 154 08
Combustible liquid n.o.s. (plasticizers, paint, lacquer or varnish)	49 154 10
Combustible liquid n.o.s. (belt dressing)	49 154 16
Combustible liquid n.o.s. (electric wire saturating or finish compound, paraffin base)	49 154 18
Combustible liquid n.o.s. (bay rum)	49 154 20
Combustible liquid n.o.s. (perfumary)	49 154 22
Combustible liquid n.o.s. (after shave lotions)	49 154 24
Combustible liquid n.o.s. (polishing wheel cement thinner)	49 154 28

It is obvious that many STCC entries would serve no useful purpose for improved emergency response. There are a number of entries in Section 172.101 that are end-use terms, a practice which should not be expanded unless proven necessary.

2. If the descriptions in § 172.101 are greatly expanded, as suggested by the AAR, the undesirable result would be reduced accuracy and rapidity of access to information that is essential.

3. The STCC identification numbering system is published in a tariff which is on file with the Interstate Commerce Commission. Additions or deletions are made by, or under the supervision of, representatives of the railroad industry. Neither the transfer of all the listings for hazardous materials in the STCC Tariff nor incorporation of the tariff by reference is appropriate for publication in the Department's Hazardous Materials Regulations. If the AAR believes there are materials inappropriately described by generic descriptions in § 172.101, it should petition the MTB to describe each of them by technical name, thereby affording public participation in a rulemaking proceeding.

4. Recognition of the STCC system is limited to the United States and even within the United States its acceptance and use is further limited—primarily to the shipment of materials by railroad. It is not recognized on a worldwide basis, nor is it likely to be in light of the now-established UN numbering system and the growing applicaton of that system.

Display of the Identification Number

The MTB proposes to require the display of the identification number, as listed in proposed column 3a of § 172.101, on all shipping papers as the third element of a basic description (immediately following the hazard class entry) and on the outside of packagings of 110-gallons capacity or less (immediately following the prescribed shipping name of contents). It also proposes to require that the number be displayed on orange panels affixed to portable tanks, cargo tanks, and tank cars. While not a part of this proposal, the MTB will consider in the future the need to expand the required display of the orange panel to other than bulk shipments of materials.

The MTB believes that the display of the identification numbers must be as uniform as possible to enable ready recognition by emergency response personnel. Further, the MTB recognizes that, with display of the identification numbers on vehicles, it may not be necessary to expand the name marking requirements for tank cars and cargo tanks—an alternative of questionable benefit when camplex chemcial names are involved. The display of the numbers on the orange panel will lead to rapid identification of contents. If an identification number addresses a generic description, and such a description is considered inadequate for a particular material, the MTB believes the material should be described in § 172.101 by technical name with an identification number assigned to it following an appropriate rulemaking proceeding. The MTB recognizes that it may have to consider a number of additions and changes to the list of hazardous materials in the future. Concerning the marking of identification numbers on packages, two major factors were considered. First, freight personnel often became the first contact "emergency" personnel when spills and leaks occur. The MTB visualizes that they will be able to make use of the manual in the same manner as emergency response personnel. Sole dependence on complex chemical names without reference to an identification number may lead to an erroneous response. This same view applies to emergency response personnel coming into contact with packages directly in vehicles, on freight docks, or elsewhere. The second factor is the value of the identification number in verifying the shipping information displayed on documents with the information displayed on packages to preclude error.

The Manual

One of the principal comments the HMRB received in response to its proposals under Docket HM-103 was the view that the proposed system (HI) placed heavy reliance on a manual that the HMRB suggested would be placed in each of the 392,000 emergency vehicles (fire, police, etc.) in the Nation. At approximately the same time as the initial proposal under HM-103, the Office of Hazardous Materials initiated distribution of its "Emergency Services Guide for Selected Hazardous Materials" which provides guidance

during the initial phases of an emergency for 45 selected materials that are transported in bulk quantities. To date, more than 880,000 copies of the Guide have been distributed to fire, police, and other emergency services organizations without charge. This fact, plus information that good use has been made of the manual, reinforces the MTB's view that a manual should be a viable part of this improved emergency response effort. It will serve to provide immediate emergency response information, especially important during the first minutes when many judgements and decisions must be made.

The MTB has undertaken the development of a manual of approximately 100 pages that will address virtually all hazardous materials transported in commerce. The manual is being developed on the principle that its statements of information and recommended actions must be concise and clearly understood. In examining other manuals, it is evident that there are only a limited number of recommendations (instructions) that can be given in a manual even though the recommendation may address hundreds of materials. Rather than write a manual with separate instructions for each material—a method that would be unduly burdensome, expensive, and unnecessary—the MTB is planning the manual according to the following format. At the beginning of the manual there will be two lists of virtually all domestic and international shipping names for hazardous materials. The first list will be arranged in numerical order of identification numbers, and the second list in alphabetical order. In both lists, there will be a page reference number associated with each entry. The numbered pages, approximately 60 to 70, will contain initial emergency response information and instructions. Many materials calling for the same initial emergency response action will be covered by the same page of information and instructions. The information pages are being developed in a style similar to those contained in the "HI" manual proposed under Docket HM-103.

The MTB believes that, in many instances, the manual will be all that is needed at the scene of an incident to terminate a minor event or to keep a minor event from becoming a major event of great consequence. However, when a situation requires further assistance, the manual refers the user to CHEMTREC (Chemical Transportation Emergency Center) and other organizations to obtain more detailed information and the help of technical experts.

Other features of the manual under development include (1) display of certain chemical descriptions in red to indicate when evacuation may be necessary; (2) evacuation tables related to small and large spills of the materials listed in red; (3) a page devoted to the display of placards with an indication that the recommendation on a particular page should be followed relative to each placard if, for some reason, shipping papers are not available or the identification number is not displayed; and (4) a typical shipping paper highlighting the description of a hazardous material and its identification number.

Exclusions

The proposals in this Notice do not apply to any material for which its proper shipping description does not have an associated identification number displayed in column 3a of § 172.101. Included in this category would be Consumer commodities, ORM-D and classes A and B explosives.

Consumer commodities properly classed ORM-D due to their quantity and form are not considered to pose a risk sufficient to warrant the application of these requirements. Classes A and B explosives, while under consideration for inclusion in the future, will have to be reviewed in greater detail to determine if a large number of identification numbers are necessary to make more finite distinctions in their risks or if a complete restructuring of the explosives descriptions would be appropriate. The MTB believes that, at the present time, it is desirable to use the "A" and "B" references for explosives presently displayed on shipping papers and placards for direct application in the manual and for communications.

Other Actions

This rulemaking proposal is considered to be a matter of high priority to the MTB. Therefore, other proposals pertaining to the hazardous materials communications regulations will be dealt with in two separate rulemaking actions. Included in these actions will be proposals to (1) permit the use of certain international descriptions (IMCO and forthcoming ICAO descriptions emanating primarily from the UN recommendations); (2) require further description for certain n.o.s. entries; (3) prescribe additional labeling requirements and permit use of certain newly adopted international labels; (4) require a special marking on portable tanks, cargo tanks and tank cars containing unodorized LP gas; and (5) address a number of petitions pertaining to shipping papers, certifications and placarding.

Implementation: Priorities and Costs

The MTB views the timing of the implementation of requirements proposed in this Notice as the major feature of its cost. This view is based on factors such as the present inventories of preprinted shipping documents, premarked (name of contents) inventories of packagings, and the necessary training and education associated with the implementation of the procedures necessary to comply with the regulations proposed herein if they are adopted. Therefore, the MTB believes it should make a statement concerning its contemplated implementation of the regulations proposed in this Notice.

The highest priority will be placed on implementation of documentation and identification (the orange panel) requirements applicable to transportation of hazardous materials in portable tanks, cargo tanks and tank cars. The MTB believes the mandatory compliance date should be no more than one year after the date of publication of the final rule.

The second highest priority will be placed on implementation of the documentation requirements for hazardous materials in packaging (other than bulk) excluding those, such as Consumer commodities, ORM-D, that will not be assigned identification numbers. The MTB believes the mandatory compliance date should be no longer than one year after the date of publication of the final rule.

The lowest priority will be assigned to packaging (less than 110-gallon capacity) markings. The MTB believes that two years should be provided for implementation or, as an alternative, a "grandfather clause" should be provided for packagings in stock prior to the effective date of the new regulations.

Concerning the display of identification numbers on orange panels, the MTB has obtained preliminary cost figures from a major supplier of labels and placards and has determined that, depending on the quantities ordered, the costs of prenumbered panels would be approximately as follows: Panels made of tag board for one time use—10 to 25 cents per panel; panels made of extruded vinyl for short term use—20 to 45 cents per panel; panels made of cast vinyl with plastic coating having an estimated life of five years—38 to 55 cents per panel. The vinyl panels would be adhesive backed to facilitate attachment.

The MTB expects the greatest costs will be incurred in the display of the orange panels on cargo tanks operated by common/contract carriers because of the high frequency in the change of usage of cargo tanks in this particular segment of the transportation industry. This fact is recognized in the existing regulations relative to the marking of the name of contents of cargo tanks. However, the MTB believes the added cost associated with implementation of these proposed requirements is warranted in the interest of providing an improved emergency response capability and is preferable to the alternative of extending the present tanks, as is presently required for portable tanks.

Specific views are invited concerning the proposed implementation of the regulations proposed in this Notice. Commenters should provide factual information concerning inventories of preprinted documents, adjustments in ADP programs, packaging turnover, and training. Broad generalized statements will not beneneficial to the MTB in its efforts to make a serious determination of how the rules are to be implemented, if they are adopted.

In further regard to implementation, the MTB was asked recently if any of the present regulations would preclude application of orange panels such as are proposed in this rulemaking. The MTB's response indicated there is no existing regulation that would prohibit the display of the United Nations identification number after the class entry on a shipping document, nor the display of an orange panel bearing an identification number.

The MTB originally considered that a rulemaking action of this type should be the subject of an advance notice of proposed rulemaking in order to solicit public comments relative to its development. On further consideration, the MTB has decided that a notice of proposed rulemaking is appropriate in order to expedite implementation since the proposals contained herein are confined to one basic issue; i.e., the display of an identification number, with other matters pertaining to improved communications being made the subject of separate rulemaking actions.

Conclusion

The MTB believes (1) adoption of the hazardous materials identification system proposed in this Notice will be a vital initial step in improving emergency response capabilities; (2) that, while the system can function without reliance on a manual, a manual of the type it has under development will significantly enhance emergency response capabilities, particularly during the first minutes of an emergency; (3) the proposed system is compatible intermodally and internationally and will be applicable to bulk and non-bulk shipment to an extent considered necessary; and (4) the proposed system is capable of integration with existing documentation, packaging and vehicle identification requirements that will insure the accuracy of information transmitted to and from emergency response personnel.

In consideration of the foregoing, it is proposed to amend Part 172 of Title 49, Code of Federal Regulations as follows:

1. In § 172.100 paragraph (d) would be amended by adding the following to the end of the paragraph.

§ 172.100 Purpose and use of the table.

* * * * *

(d) * * * Column 3(a) lists the identification numbers assigned to hazardous materials. Those preceded by a "UN" are associated with descriptions considered appropriate for international shipments as well as domestic shipments. Those preceded by an "NA" are associated with descriptions that are not recognized for international shipments, except to and from Canada. If an identification number is the "9000" series, it is either associated with the description of a material that is not appropriately covered by international hazardous materials (dangerous goods) shipping standards or not appropriately addressed by such standards for emergency response information purposes.

* * * * *

2. Section 172.101, the Hazardous Materials Table, would be revised by the addition of column 3(a) to read as follows:

BILLING CODE 4910-60-M

§172.101 Hazardous Materials Table

1

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Accumulator, pressurized (*pneumatic or hydraulic*), containing nonflammable gas	Nonflammable gas	NA1956	Nonflammable gas	173.306		No limit	No limit	1,2	1,2	
	Acetal	Flammable liquid	UN1088	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
EA	Acetaldehyde ammonia (*RQ-1000/454*)	ORM-A	UN1841	None	173.505	173.510	No limit	No limit			
E	Acetaldehyde (*ethyl aldehyde*) (*RQ-1000/454*)	Flammable liquid	UN1089	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
*E	Acetic acid (*aqueous solution*) (*RQ-1000/454*)	Corrosive material	UN2790	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Stow separate from nitric acid or oxidizing materials
E	Acetic acid, glacial (*RQ-1000/454*)	Corrosive material	UN2789	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Stow separate from nitric acid or oxidizing materials. Segregation same as for flammable liquids
E	Acetic anhydride (*RQ-1000/454*)	Corrosive material	UN1715	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Acetone	Flammable liquid	UN1090	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
E	Acetone cyanohydrin (*RQ-10/4.54*)	Poison B	UN1541	Poison	None	173.346	Forbidden	55 gallons	1	5	Shade from radiant heat. Stow away from corrosive materials
	Acetone oil	Flammable liquid	UN1091	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Acetonitrile	Flammable liquid	UN1648	Flammable liquid	173.118	173.119	1 quart	10 gallons	1	4	Shade from radiant heat
	Acetyl benzoyl peroxide, solid	Forbidden									
	Acetyl benzoyl peroxide solution, *not over 40% peroxide*	Organic peroxide	NA2081	Organic peroxide	None	173.222	Forbidden	1 quart	1,2	1	
E	Acetyl bromide (*RQ-5000/2270*)	Corrosive material	UN1716	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Acetyl chloride (*RQ-5000/2270*)	Flammable liquid	UN1717	Flammable liquid	173.244	173.247	1 quart	1 gallon	1	1	Stow away from alcohols. Keep cool and dry. Separate longitudinally by an intervening complete compartment or hold from explosives
	Acetyl iodide	Corrosive material	UN1898	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Acetyl peroxide solution, *not over 25% peroxide*	Organic peroxide	UN2094	Organic peroxide	173.153	173.222	Forbidden	1 quart	1,2	1	
	Acetylene	Flammable gas	UN1001	Flammable gas	None	173.303	Forbidden	300 pounds	1	1	Shade from radiant heat
A	Acetylene tetrabromide	ORM-A	UN2504	None	173.505	173.510	10 gallons	55 gallons			
	Acid butyl phosphate	Corrosive material	UN1718	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Acid carboy empty. *See* Carboy empty.										
	Acid, liquid, n.o.s.	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	5 pints	1	4	Keep cool
*	Acid, sludge	Corrosive material	UN1906	Corrosive	None	173.248	Forbidden	1 quart	1,2	1	
E	Acrolein, inhibited (*RQ-1/.454*)	Flammable liquid	UN1092	Flammable liquid and Poison	None	173.122	Forbidden	1 quart	1,2	5	Keep cool. Stow away from living quarters
	Acrylic acid	Corrosive material	UN2218	Corrosive	173.244	173.245	1 quart	5 pints	1	1	
E	Acrylonitrile (*RQ-100/45.4*)	Flammable liquid	UN1093	Flammable liquid and Poison	None	173.119	Forbidden	1 quart	1,2	5	Keep cool
	Actuating cartridge, explosive (*fire extinguisher, or valve*)	Class C explosive	NA0276	Explosive C	173.114		50 pounds	150 pounds	1,2	1,2	Keep cool and dry
	Adhesive, n.o.s. *See* Cement, liquid, n.o.s.		UN1133								
E	Adipic acid (*RQ-5000/2270*)	ORM-E	NA9077	None	None	173.510	No limit	No limit	2	2	
	Aerosol product, each aerosol container exceeding 50 cubic inches capacity. See Compressed gas, n.o.s.		UN1950								
	Air, compressed	Nonflammable gas	UN1002	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	Aircraft rocket engine (*Commercial*)	Flammable solid	NA2791	Flammable solid	None	173.228	Forbidden	550 pounds	1,3	5	
	Aircraft rocket engine igniter (*Commercial*)	Flammable solid	UN2792	Flammable solid	None	173.228	Forbidden	25 pounds	1,3	5	
	Airplane flare. See Fireworks, special										
	Alcohol, n.o.s.	Flammable liquid	UN1987	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Alcohol, n.o.s.	Combustible liquid	NA1987	None	173.118a	None	No limit	No limit	1,2	1,2	
EA	Aldrin, cast solid (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit			
EA	Aldrin mixture, dry, with 65% or less aldrin (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit			
E	Aldrin mixture, dry (*with more than 65% aldrin*) (*RQ-1/.454*)	Poison B	NA2761	Poison	173.364	173.376	50 pounds	200 pounds	1,2	1,2	
E	Aldrin mixture, liquid (*with more than 60% aldrin*) (*RQ-1/.454*)	Poison B	NA2762	Poison	173.345	173.231	1 quart	55 gallons	1,2	1,2	If flash point less than 141 deg F, segregation same as for flammable liquids
EA	Aldrin mixture, liquid, with 60% or less aldrin (*RQ-1/.454*)	ORM-A	NA2762	None	173.505	173.510	No limit	No limit			
E	Aldrin (*RQ-1/.454*)	Poison B	NA2761	Poison	173.364	173.376	50 pounds	200 pounds	1,2	1,2	
	Alkaline corrosive battery fluid	Corrosive material	NA2797	Corrosive	173.244	173.249 173.257	1 quart	5 gallons	1,2	1,2	
	Alkaline corrosive battery fluid with empty storage battery	Corrosive material	NA2797	Corrosive	None	173.258	Forbidden	5 pints	1,2	1,2	
	Alkaline corrosive liquid, n.o.s.	Corrosive material	NA1760	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Alkaline liquid, n.o.s.	Corrosive material	NA1760	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Alkanesulfonic acid	Corrosive material	NA2584	Corrosive	173.244	173.245	5 pints	1 gallon	1,2	1	
	Alkyl aluminum halides. See Pyrophoric liquid, n.o.s.		NA2221								
A	Allethrin	ORM-A		None	173.505	173.510	No limit	No limit			

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Allyl alcohol (*RQ-100/45.5*)	Flammable liquid	UN1098	Flammable liquid and Poison	173.118	173.119	1 quart	10 gallons	1,2	1	
	Allyl bromide	Flammable liquid	UN1099	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,2	1	
E	Allyl chloride (*RQ-1000/454*)	Flammable liquid	UN1100	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Allyl chlorocarbonate	Flammable liquid	UN1722	Flammable liquid	None	173.288	Forbidden	5 pints	1	5	Keep dry. Separate longitudinally by an intervening complete hold or compartment from explosives. Segregation same as for corrosive materials
	Allyl chloroformate. *See* Allyl chlorocarbonate		UN1722								
	Allyl trichlorosilane	Corrosive material	UN1724	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Aluminum alkyls. *See* Pyrophoric liquid, n.o.s.		NA2221								
	Aluminum bromide, anhydrous	Corrosive material	UN1725	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Aluminum dross, wet *or* hot. *See* Sec. 173.173										
	Aluminum hydride	Flammable solid	UN2463	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Aluminum, liquid *or* paint. *See* Paint, enamel, lacquer stain, shellac, varnish, etc.		NA1263								
	Aluminum, metallic, powder	Flammable solid	UN1396	Flammable solid	173.232	173.232	25 pounds	100 pounds	1,2	1,2	Keep dry. Segregation same as for flammable solids labeled dangerous when wet
	Aluminum nitrate	Oxidizer	UN1438	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Aluminum phosphate solution	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Aluminum phosphide	Flammable solid	UN1397	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1,2	1,2	Stow away from acids and oxidizing materials
EA	Aluminum sulfate (*RQ-5000/2270*)	ORM-B	UN1759	None	None	173.510	25 pounds	100 pounds	23	2	
	Amatol. See High explosive										
	2-(2-Aminoethoxy) ethanol	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	N-Aminoethylpiperazine	Corrosive material	UN2815	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	bis (Aminopropyl) piperazine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Aminopropyldiethanolamine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	N-Aminopropylmorpholine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Ammonia, anhydrous (*RQ-100/45.4*)	Nonflammable gas	UN1005	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow in well ventilated space
E	Ammonia solution (*containing more than 44% ammonia*) (*RQ-1000/454*)	Nonflammable gas	UN2073	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow in well ventilated space
	Ammonia solution (containing 44% or less ammonia in water). See Ammonium hydroxide		UN2672								
E	Ammonium acetate (*RQ-5000/2270*)	ORM-E	NA9079	None	None	173.510	No limit	No limit	2	2	
	Ammonium arsenate, solid	Poison B	UN1546	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	Stow away from alkaline corrosives
E	Ammonium benzoate (*RQ-5000/2270*)	ORM-E	NA9080	None	None	173.510	No limit	No limit	2	2	
E	Ammonium bicarbonate (*RQ-5000/2270*)	ORM-E	NA9081	None	None	173.510	No limit	No limit	2	2	
	Ammonium bifluoride. *See* Ammonium hydrogen fluoride		UN1727								
EA	Ammonium bisulfite, solid (*RQ-5000/2270*)	ORM-B	NA2693	None	None	173.510	25 pounds	100 pounds	2	2	
E	Ammonium bisulfite solution (*RQ-5000/2270*)	Corrosive material	UN2693	Corrosive	173.244	173.245	1 quart	5 gallons	2	2	
EA	Ammonium carbamate (*RQ-5000/2270*)	ORM-A	NA9083	None	None	173.510	50 pounds	No limit	2	2	Keep away from heat.
EA	Ammonium carbonate (*RQ-5000/2270*)	ORM-A	NA9084	None	None	173.510	50 pounds	No limit	2	2	Keep away from heat, acids, alum and salts of iron or zinc.
	Ammonium chlorate	Forbidden									
EA	Ammonium chloride (*RQ-5000/2270*)	ORM-E	NA9085	None	None	173.510	No limit	No limit	2	2	
E	Ammonium chromate (*RQ-1000/454*)	ORM-E	NA9086	None	None	173.510	No limit	No limit	2	2	
E	Ammonium citrate (*RQ-5000/2270*)	ORM-E	NA9087	None	None	173.510	No limit	No limit	2	2	
E	Ammonium dichromate (*ammonium bichromate*) (*RQ-1000/454*)	Oxidizer	UN1439	Oxidizer	173.153	173.154 173.235	25 pounds	100 pounds	1,2	1,2	
EA	Ammonium fluoborate (*RQ-5000/2270*)	ORM-B	NA9088	None	None	173.510	25 pounds	100 pounds	2	2	
EA	Ammonium fluoride (*RQ-5000/2270*)	ORM-B	UN2505	None	173.505	173.510 173.800	25 pounds	100 pounds			
E	Ammonium hydrogen fluoride, solid (*RQ-5000/2270*)	Corrosive material	UN1727	Corrosive	173.244	173.245b	25 pounds	100 pounds	2	2	
*E	Ammonium hydrogen fluoride solution (*RQ-5000/2270*)	Corrosive material	UN2817	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Keep dry
A	Ammonium hydrogen sulfate	ORM-B	UN2506	None	173.505	173.510 173.800	25 pounds	100 pounds			
A	Ammonium hydrosulfide solution	ORM-A	NA2683	None	173.505	173.510 173.605	10 gallons	55 gallons			
*E	Ammonium hydroxide (*containing not more than 44% ammonia*) (*RQ-1000/454*)	Corrosive material	NA2672	Corrosive	173.244	173.245	2 gallons	2 gallons	1	4	
	Ammonium nitrate-carbonate mixture	Oxidizer	UN2068	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate fertilizer, *containing no more than 0.2% carbon*	Oxidizer	UN2067	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate-Fuel mixtures. See Blasting agent										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ammonium nitrate-Fuel mixtures. See High explosive										
	Ammonium nitrate mixed fertilizer	Oxidizer	UN2069	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate (no organic coating)	Oxidizer	NA1942	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate (organic coating)	Oxidizer	NA1942	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate-phosphate	Oxidizer	UN2070	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
E	Ammonium oxalate (*RQ-5000/2270*)	ORM-A	NA2449	None	None	173.510	25 pounds	100 pounds	2	2	
	Ammonium perchlorate	Oxidizer	UN1442	Oxidizer	173.153	173.154 173.233a	25 pounds	100 pounds	1,2	4	Stow away from powdered metals
	Ammonium perchlorate. *See* High explosives										
	Ammonium permanganate	Oxidizer	NA1482	Oxidizer	None	173.154	Forbidden	Forbidden	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide. This material may be forbidden in water transportation by certain countries
	Ammonium picrate. See High explosive										
	Ammonium picrate, wet (*with 10% or more water*)	Flammable solid	UN1310	Flammable solid	173.192		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
A	Ammonium polysulfide solution	ORM-A	UN2818	None	173.505	173.510 173.605	10 gallons	55 gallons			
EA	Ammonium silicofluoride (*RQ-1000/454*)	ORM-B	UN2854	None	None	173.510	25 pounds	100 pounds	2	2	
E	Ammonium sulfamate (*RQ-5000/2270*)	ORM-E	NA9089	None	None	173.510	No limit	No limit	2	2	
W	Ammonium sulfate nitrate	ORM-C	NA1477	None	173.505	172.910			1,2	1,2	Must not be accepted for transportation while hot. Separate by an intervening hold or compartment from Class A explosives. Separate from other explosives, corrosive materials, flammable solids, liquids, or gases, oxidizing materials, organic peroxides, or organic materials
*E	Ammonium sulfide solution (*RQ-5000/2270*)	Flammable liquid	UN2683	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
E	Ammonium sulfite (*RQ-5000/2270*)	ORM-E	NA9090	None	None	173.510	No limit	No limit	2	2	
E	Ammonium tartrate (*RQ-5000/2270*)	ORM-E	NA9091	None	None	173.510	No limit	No limit	2	2	
E	Ammonium thiocyanate (*RQ-5000/2270*)	ORM-E	NA9092	None	None	173.510	No limit	No limit	2	2	
E	Ammonium thiosulfate (*RQ-5000/2270*)	ORM-E	NA9093	None	None	173.510	No limit	No limit	2	2	
	Ammunition, chemical (containing a Poison A liquid or gas). See Chemical ammunition (containing a Poison A material)										
	Ammunition, chemical (containing a Poison B material). See Chemical ammunition (containing a Poison B material)										
	Ammunition, chemical (containing an irritating liquid or solid). See Chemical ammunition (containing an irritating material)										
	Ammunition, chemical, explosive, with Poison A material	Class A explosive		Explosive A and Poison gas	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition, chemical, explosive, with Poison B material	Class A explosive		Explosive A and Poison	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition, chemical, explosive, with irritant	Class A explosive		Explosive A and Irritant	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition for cannon with empty projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon with explosive projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with gas projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with illuminating projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with incendiary projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with inert loaded projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon with smoke projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with solid projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon with tear gas projectile	Class A Explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with tear gas projectile	Class B Explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon without projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	C5	
	Ammunition for small-arms with explosive projectile	Class A explosive		Explosive A	None	173.58	Forbidden	Forbidden	6	5	
	Ammunition for small-arms with incendiary projectile	Class A explosive		Explosive A	None	173.58	Forbidden	Forbidden	6	5	
	Ammunition, non-explosive				173.55						
	Ammunition, rocket. See Rocket ammunition										
	Ammunition, small-arms. *See* Small-arms ammunition										
E	Amyl acetate (*RQ-1000/454*)	Flammable liquid	UN1104	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Amyl acid phosphate	Corrosive material	UN2819	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Amyl chloride	Flammable liquid	UN1107	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amyl formate	Flammable liquid	UN1109	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amyl mercaptan	Flammable liquid	UN1111	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	1	
	Amyl nitrite	Flammable liquid	UN1113	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Amyl trichorosilane	Corrosive material	UN1728	Corrosive	None	173.280	Forbidden	10 gallons	1	5	Keep dry
	Amylamine	Flammable liquid	UN1106	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amylene, *normal*	Flammable liquid	UN1108	Flammable liquid	173.118	173.119	1quart	10 gallons	1,3	1,3	
	Anhydrous ammonia. *See* Ammonia, anhydrous		UN1005								
	Anhydrous hydrazine. *See* Hydrazine, anhydrous		UN2029								
	Anhydrous hydrofluoric acid. *See* Hydrogen fluoride		UN1052								
	Aniline oil drum, empty *See* 173.347(d)	Poison B							1,2	1	Do not accept unless returnable package notice is on drum and the instructions thereon have been carried out
E	Aniline oil, liquid (*RQ-1000/454*)	Poison B	UN1547	Poison	None	173.347	Forbidden	55 gallons	1,2	1,2	Stow away from oxidizing materials and acids
	Anisoyl chloride	Corrosive material	UN1729	Corrosive	173.244	173.279	1 quart	1 quart	1	1	Keep dry
	Antifreeze compound, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Antifreeze compound, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,..	
	Antifreeze preparation, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,..	1	
	Antifreeze preparation, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Antimonous chloride. *See* Antimony trichloride		UN1733								
A	Antimony lactate, solid	ORM-A	UN1550	None	173.606	173.510	No limit	No limit			
E	Antimony pentachloride (*RQ-1000/454*)	Corrosive material	UN1730	Corrosive	None	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
*E	Antimony pentachloride solution (*RQ-1000/454*)	Corrosive material	UN1731	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Antimony pentafluoride	Corrosive material	UN1732	Corrosive	None	173.246	Forbidden	25 pounds	1	5	Keep dry
EA	Antimony potassium tartrate solid (*RQ-1000/454*)	ORM-A	UN1551	None	173.505	173.510	No limit	No limit			
A	Antimony sulfide, solid	ORM-A	NA1325	None	173.505	173.510	No limit	No limit			
E	Antimony tribromide, solid (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry.
E	Antimony tribromide, solution (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245	1 quart	5 pints	2	2	Keep dry.
E	Antimony trichloride, solid (*RQ-1000/454*)	Corrosive material	UN1733	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
*E	Antimony trichloride solution (*RQ-1000/454*)	Corrosive material	NA1733	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry
E	Antimony trifluoride, solid (*RQ-1000/454*)	Corrosive material	UN1549	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,..	1,2	Keep dry.
E	Antimony trifluoride, solution (*RQ-1000/454*)	Corrosive material	UN1549	Corrosive	173.244	173.245	1 quart	5 pints	2	2	Keep dry
E	Antimony trioxide (*RQ-5000/2270*)	ORM-E	UN1549	None	None	173.510	No limit	No limit	2	..	
	Aqua ammonia solution *(containing 44% or less ammonia)*. *See* Ammonium hydroxide		NA2672								
	Argon	Nonflammable gas	UN1006	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,3	
	Argon, liquid pressurized	Nonflammable gas	UN1951	Nonflammable gas	None	173.304	Forbidden	300 pounds	1,3	1,3	
	Arsenic acid, solid	Poison B	UN1553	Poison	173.364	173.366	50 pounds	200 pounds	1,2	1,..	
	Arsenic acid solution	Poison B	UN1554	Poison	173.345	173.348	1 quart	55 gallons	1,2	1,..	
	Arsenic bromide, solid	Poison B	UN1555	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Arsenic chloride *(arsenious)* liquid. *See* arsenic trichloride		UN1560								
E	Arsenic disulfide. *See* Arsenic sulfide, solid		NA1557								
	Arsenic iodide, solid	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,..	
E	Arsenic pentoxide, solid (*RQ-5000/2270*)	Poison B	UN1559	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Arsenic, solid	Poison B	UN1554	Poison	173.364	173.366	50 pounds	200 pounds	1,2	1,2	
	Arsenic sulfide, solid	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	Keep dry
E	Arsenic trichloride, liquid (*RQ-5000/454*)	Poison B	UN1560	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,..	
E	Arsenic trioxide, solid (*RQ-5000/454*)	Poison B and ORM-E	UN1561	Poison	173.364	173.366 173.368	50 pounds	200 pounds	1,2	1,..	
E	Arsenic trisulfide (*RQ-5000/2270*)	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
	Arsenic, white, solid. *See* Arsenic trioxide, solid		UN1561								
	Arsenical compound n.o.s., liquid, *or* arsenical mixture, n.o.s., liquid	Poison B	UN1556	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,..	
	Arsenical compound n.o.s., solid, *or* arsenical mixture, n.o.s., solid	Poison B	UN1557	Poison	173.364	173.367	50 pounds	200 pounds	1,..	1,2	Keep dry
	Arsenical dip, liquid *(sheep dip)*	Poison B	UN1557	Poison	173.345	173.346	1 quart	55 gallons	1,..	1,..	
	Arsenical dust	Poison B	UN1562	Poison	173.364	173.368	50 pounds	200 pounds	1,2	1,..	
	Arsenical flue dust	Poison B	UN1562	Poison	173.364	173.368	50 pounds	200 pounds	1,2	1,..	
	Arsenious acid, solid. *See* Arsenic trioxide, solid		UN1560								
	Arsenious and mercuric iodide solution	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Arsine	Poison A	UN2188	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	
	Asbestos	ORM-C	NA2590	None	173.1090(c)	173.1090(c)	No limit	No limit	1,2	1,..	Stow and handle to avoid airborne particles.
W	Asphalt, *at or above its flashpoint*	ORM-C	NA1268	None	None	None	Forbidden	Forbidden	1	5	When applicable, no fire or residue thereof may be present in the furnace heating the substance while the vehicle is on board a cargo vehicle
	Asphalt, cut back	Flammable liquid	NA1993	Flammable liquid	173.118	173.131	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Asphalt, cut back	Combustible liquid	NA1999	None	173.118a	None	No limit	No limit	1,2	1,2	
	Automobile, motorcycle, tractor, or other self-propelled vehicle. See Motor Vehicle										
	Automobile, motorcycle, tractor, or other self-propelled vehicle, engine, or other mechanical apparatus, with charged electric storage battery, wet. See Motor Vehicle										
	1-Aziridinyl phosphine oxide (tris). *See* Tris-(1-aziridinyl) phosphine oxide		UN2501								
	Bags, burlap, used, must be classed for the hazardous material previously contained in bag. See 173.28, 173.29										
	Bags, sodium nitrate, empty and unwashed	Flammable solid	UN1350	Flammable solid	None	173.155	Forbidden	25 pounds	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Barium azide, wet, *50% or more water*	Flammable solid	UN1571	Flammable solid	None	173.203	Forbidden	1 pound	1,2	1,2	Stow away from heavy metals
	Barium chlorate	Oxidizer	UN1445	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals
	Barium chlorate, wet	Oxidizer	NA1445	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals
E	Barium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1565	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Barium nitrate	Oxidizer	UN1446	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
A	Barium oxide	ORM-B	UN1884	None	173.505	173.510 173.800	25 pounds	100 pounds			
	Barium perchlorate	Oxidizer	UN1447	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from powdered metals
	Barium permanganate	Oxidizer	UN1448	Oxidizer	173.153	172.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Barium peroxide *(binoxide, dioxide)*	Oxidizer	UN2639	Oxidizer	173.153	173.156	25 pounds	100 pounds	1,2	1,2	Keep dry
	Barrel, empty. *See* Drum, empty										
	Battery charged with electrolyte (acid or alkaline battery fluid)	Corrosive material	NA2794	Corrosive	None	173.250	Forbidden	5 pints	1,2	1,2	
	Battery, dry. Not subject to Parts 170-189 of this subchapter										
	Battery, electric storage, wet	Corrosive material	NA2794	Corrosive	173.250		Forbidden	No limit	1,2	1,2	
	Battery, electric storage, wet, with automobile, auto parts, engine *(or other specifically named mechanical apparatus)*	Corrosive material	NA2794	Corrosive	173.250	173.250	No limit	No limit	1/2	1,2	Keep dry
	Battery, electric storage, wet with containers of corrosive battery fluid	Corrosive material	NA2794	Corrosive	None	173.258	Forbidden	2 gallons	1,2	1,2	
	Battery fluid. See Electrolyte (acid) *or* Alkaline battery fluid										
W	Battery parts *(plates, grids, etc. unwashed, exhausted)*	ORM-C		None	173.505	173.915			1,2	4	
	Benzaldehyde	Combustible liquid	UN1990	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Benzene (benzol) (*RQ-1000/454*)	Flammable liquid	UN1114	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Benzene phosphorus dichloride	Corrosive material	UN2798	Corrosive	None	173.250a	Forbidden	5 pints	1	5	
	Benzene phosphorus thiodichloride	Corrosive material	UN2799	Corrosive	None	173.250a	Forbidden	5 pints	1	5	
	Benzine	Flammable liquid	UN1115	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Benzoic acid (*RQ-5000/2270*)	ORM-E	NA9094	None	None	173.510	No limit	No limit	2	2	
E	Benzonitrile (*RQ-1000/454*)	Combustible liquid	UN2224	None	173.118b	None	No limit	No limit	2	2	
E	Benzoyl chloride(*RQ-1000/454*)	Corrosive material	UN1736	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Benzoyl peroxide	Organic peroxide	NA2087	Organic peroxide	None	173.157 173.158	Forbidden	25 pounds	1,2	1	
	Benzyl bromide (*bromotoluene, alpha*)	Corrosive material	UN1737	Corrosive	None	173.281	Forbidden	5 pints	1	5	Keep dry
E	Benzyl chloride (*RQ-100/45.4*)	Corrosive material	UN1738	Corrosive	173.244	173.245	Forbidden	1 quart	1	4	Keep dry
	Benzyl chloroformate (*or Benzyl chlorocarbonate*)	Corrosive	UN1739	Corrosive	None	173.288	Forbidden	5 pints	1	5	Keep dry
E	Beryllium chloride (*RQ-5000/2270*)	Poison B	NA1566	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
	Beryllium compound, n.o.s.	Poison B	UN1566	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Beryllium fluoride (*RQ-5000/2270*)	Poison B	NA1566	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
E	Beryllium nitrate (*RQ-5000/2270*)	Oxidizer	UN2464	Oxidizer	173.153	173.182	25 pounds	100 pounds	2	2	
	Black powder	Class A explosive		Explosive A	None	173.60	Forbidden	Forbidden	6	5	
	Black powder igniter with empty cartridge bag	Class C explosive	NA0325	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Blasting agent, n.o.s.	Blasting agent		Blasting agent	None	173.114a	Forbidden	100 pounds	1,2	1,2	
	Blasting caps–(*1,000 or fewer*) (*Show actual number*)	Class C explosive	NA0267	Explosive C	None	173.103	Forbidden	Forbidden	1,2	5	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting caps–electric (*1,000 or fewer*) (*Show actual number*)	Class C explosive		Explosive C	None	173.103	Forbidden	Forbidden	1,2	5	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting caps–electric (*more than 1,000*) (*Show actual number*)	Class A explosive		Explosive A	None	173.66	Forbidden	Forbidden	6	5	Magazine. Do not stow blasting caps with any high explosives. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting caps–(*more than 1,000*) (*Show actual number*)	Class A explosive		Explosive A	None	173.66	Forbidden	Forbidden	6	5	Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a)* Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Blasting caps with metal clad mild detonating fuse--*(1,000 or fewer) (Show actual number)*	Class C explosive	NA0361	Explosive C	None	173.103	Forbidden	Forbidden	1,2	5	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting caps with safety fuse--*(1,000 or fewer) (Show actual number)*	Class C explosive	NA0361	Explosive C	None	173.103	Forbidden	Forbidden	1,2	5	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting caps with safety fuse--*(more than 1,000) (Show actual number)*	Class A explosive		Explosive A	None	173.66 173.67	Forbidden	Forbidden	6	5	Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded.
	Blasting gelatin. See High explosive										
	Blasting powder. See Black powder										
W	Bleaching powder, *containing 39% or less available chlorine*	ORM-C	UN2208	None	173.505	173.920			1,2	1,2	Keep dry. Stow separate from flammable liquids and acids. (Stow away from oils, grease, and similar organic materials.
	Boiler compound, liquid	Corrosive material	UN1760	Corrosive	173.244	173.249	1 quart	10 gallons	1,2	1,2	
	Bomb, explosive. See Explosive bomb										
	Bomb, explosive with gas, smoke, or incendiary material. See Explosive bomb										
	Bomb, fireworks. See Fireworks, special										
	Bomb, gas, smoke, or incendiary, nonexplosive. See Chemical ammunition										
	Bomb, incendiary, or smoke without bursting charge. See Fireworks, special										
	Bomb, practice, with electric primer or electric squib (non-explosive)				173.55						
	Bomb, sand-loaded or empty (non-explosive)				173.55						
A	Bone oil	ORM-A		None	173.505	173.510	No limit	No limit			
	Booster, explosive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Bordeaux arsenite, solid	Poison B	NA2759	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Bordeaux arsenite, liquid	Poison B	NA2759	Poison	173.345	173,346	1 quart	55 gallons	1,2	1,2	
	Boron tribromide	Corrosive material	UN2692	Corrosive	None	173.251	Forbidden	1 quart	1	5	
	Boron trichloride	Corrosive material	UN1741	Corrosive	None	173.251	Forbidden	1 quart	1,2	5	Stow in well ventilated space. Shade from radiant heat. Segregation same as for non-flammable gases.
	Boron trifluoride	Nonflammable gas	UN1008	Nonflammable gas and Poison	None	173.302	Forbidden	Forbidden	1	5	Stow away from living quarters and foodstuffs
	Boron trifluoride-acetic acid complex	Corrosive material	UN1742	Corrosive	173.244	173.247	1 quart	1 gallon	1,2	1,2	
	Bottles, having previously contained a hazardous material and not cleaned. See 173.29										
*W	Box toe board (*nitrocellulose base*)	ORM-C		None	173.505	173.925			1,2	1,3	Provide cool stowage in a compartment having a temperature not exceeding 130 deg F., well away from any sources of heat, and in position to protect or move, even to jettison in event of fire. Separate from explosives, flammable liquids or gases, oxidizing materials, organic peroxides, or corrosive liquids.
	Box toe gum	Combustible liquid	UN2060	None	173.118a	None	No limit	No limit	1,2	1,2	
	Box toe gum	Flammable liquid	UN2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Bromine	Corrosive material	UN1744	Corrosive	None	173.252	Forbidden	1 quart	1	5	Keep cool
	Bromine pentafluoride	Oxidizer	UN1745	Oxidizer	None	173.246	Forbidden	100 pounds	1	5	Shade from radiant heat. Segregation same as for corrosives
	Bromine trifluoride	Oxidizer	UN1746	Oxidizer and Poison	None	173.246	Forbidden	100 pounds	1	5	Shade from radiant heat. Segregation same as for corrosives
	Bromoacetic acid, solid	Corrosive material	UN1938	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Bromoacetic acid solution	Corrosive material	UN1938	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Bromoacetone, liquid	Poison A	UN1569	Poison gas	None	173.329	Forbidden	Forbidden	1	5	Segregation same as for flammable liquids
	Bromobenzene	Combustible liquid	UN2514	None	173.118a	None	No limit	No limit	1,2	1,2	
	Bromotoluene, alpha. *See* Benzyl bromide		UN1737								
	Brucine, solid (dimethoxy strychnine)	Poison B	UN1570	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
W	Burlap bags, cleaned (*vacuum cleaned, wheel cleaned, or otherwise mechanically brushed). See* Burlap cloth										
W	Burlap bags, new. *See* Burlap cloth										
AW	Burlap bags, used and unwashed, *or* not cleaned	ORM-C		None	173.930		No limit	No limit	1	1	Keep cool
W	Burlap cloth (*hessian*)	ORM-C		None	173.931				1,2	1,2	Keep dry. Stow away from organic liquids
	Burnt cotton, not repicked	Flammable solid	NA1325	Flammable solid	None	173.159	Forbidden	Forbidden	1	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Burnt fiber	Flammable solid	NA1325	Flammable solid	None	173.169	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials or organic peroxides.
	Burster, explosive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Butadiene, inhibited	Flammable gas	UN1010	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	Stow away from living quarters
	Butane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas		UN1011								
E	Butyl acetate (*RQ-5000/2270*)	Flammable liquid	UN1123	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*E/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	n-Butyl acid phosphate. *See* Acid butyl phosphate		UN1718								
	Butyl alcohol. *See* Alcohol, n.o.s.		UN1120								
	Butyl bromide, *normal*	Flammable liquid	UN1126	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyl chloride	Flammable liquid	UN1127	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyl ether	Flammable liquid	UN1149	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Butyl formate	Flammable liquid	UN1128	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	n-Butyl isocyanate	Flammable liquid	UN2485	Flammable liquid and Poison	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyl mercaptan	Flammable liquid	UN2347	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	
	Butyl phosphoric acid. *See* Acid butyl phosphate		UN1718								
E	n-Butyl phthalate (*RQ-100/45.4*)	ORM-E	NA9095	None	None	173.510	No limit	No limit	2	2	
	Butyl trichlorosilane	Corrosive material	UN1747	Corrosive	None	173.240	Forbidden	10 gallons	1	1	Keep dry
E	Butylamine (*RQ-1000/454*)	Flammable liquid	UN1125	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyraldehyde	Flammable liquid	UN1129	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Butyric acid (*RQ-5000/2270*)	Corrosive material	UN2820	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Cadmium acetate (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	2	2	
E	Cadmium bromide (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	2	2	
E	Cadmium chloride (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in recoverable location.
E	Calcium arsenate, solid (*RQ-1000/454*)	Poison B	UN1573	Poison	173.504	173.507 173.508	50 pounds	200 pounds	1,2	1,2	
E	Calcium arsenite, solid (*RQ-1000/454*)	Poison B	NA1574	Poison	173.504	173.505	50 pounds	200 pounds	1,2	1,2	
	Calcium bisulfite solution. *See* Calcium hydrogen sulfite solution		NA2693								
E	Calcium carbide (*RQ-5000/2270*)	Flammable solid	UN1402	Flammable solid and dangerous when wet	None	173.178	Forbidden	25 pounds	1,2	1,2	Keep dry. Stow away from copper, its alloy and salts
	Calcium chlorate	Oxidizer	UN1452	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Sto away from powdered metals and cyanid
	Calcium chlorite	Oxidizer	UN1453	Oxidizer	None	173.169	Forbidden	100 pounds	1,2	1,2	Separate from ammonium compounds, pow dered materials, and cyanides
E	Calcium chromate (*RQ-1000/454*)	ORM-E	NA9090	None	None	173.510	No limit	No limit	2	2	
AW	Calcium cyanamide, not hydrated, containing more than 0.1% calcium carbide	ORM-G	UN1403	None	None	173.045	25 pounds	200 pounds	1,2	1,2	Segregation same as for flammable solids l beled Dangerous When Wet
*E	Calcium cyanide, solid *or* Calcium cyanide mixture, solid (*RQ-10/4.54*)	Poison B	UN1575	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from corrosive liquids. Keep d
E	Calcium dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9097	None	None	173.510	No limit	No limit	2	2	
	Calcium hydrogen sulfite solution	Corrosive material	UN1923	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
EA	Calcium hydroxide (*RQ-5000/2270*)	ORM-B	NA9008	None	None	173.510	50 pounds	100 pounds	2	2	
E	Calcium hypochlorite mixture, *dry*, (*Containing more than 39% available chlorine*) (*RQ-10/4.54*)	Oxidizer	UN1748	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	Keep cool and dry
	Calcium, metal	Flammable solid	NA1401	Flammable solid and Dangerous when wet	173.153	173.154	25 pounds	100 pounds	1,2	4	Keep cool and dry. Segregation same as f flammable solids labeled Dangerous Wh Wet
	Calcium, metal, crystalline	Flammable solid	NA1401	Flammable solid and Dangerous when wet	None	173.231	Forbidden	25 pounds	1,2	5	Keep cool and dry. Segregation same as f flammable solids labeled Dangerous Wh Wet
	Calcium nitrate (*See Sec. 173.182 Note*)	Oxidizer	UN1454	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
EAW	Calcium oxide (*RQ-5000/2270*)	ORM-B	UN1910	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	Keep dry. Stow away from explosives, acid combustible materials, and ammonium sal
	Calcium permanganate	Oxidizer	UN1456	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and h drogen peroxide
	Calcium peroxide	Oxidizer	UN1457	Oxidizer	173.153	173.156	25 pounds	100 pounds	1,2	1,2	Keep dry
	Calcium phosphide	Flammable solid	UN1360	Flammable solid and Dangerous when wet	None	173.161	Forbidden	25 pounds	1	5	Keep cool and dry. Segregation same as f flammable solids labeled Dangerous Wh Wet
	Calcium resinate	Flammable solid	UN1313	Flammable solid	None	173.166	Forbidden	125 pounds	1	5	
	Calcium resinate, fused	Flammable solid	UN1314	Flammable solid	None	173.166	Forbidden	125 pounds	1	5	
AW	Camphene	ORM-A	NA9011	None	173.505	173.510	No limit	No limit	1,3	1,3	Stow away from foodstuffs and living quarte
	Camphor oil	Combustible liquid	UN1130	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cannon primers	Class C explosive	NA0378	Explosive C	None	173.107	50 pounds	150 pounds	1,3	5	
	Caprylyl peroxide solution	Organic peroxide	NA2120	Organic peroxide	173.153	173.221	1 quart	1 quart	1,2	4	Keep cool. Stow separate from combusti materials, explosives, or acids
	Caps, blasting. See Blasting caps										
	Caps, toy. See Toy caps										
EA	Captan (*RQ-10/4.54*)	ORM-A	NA2771	None	None	173.510	100 pounds	No limit	2	2	
EA	Carbaryl (*RQ-100/45.4*)	ORM-A	NA2757	None	173.505	173.510	No limit	No limit			
E	Carbofuran (*RQ-10/4.54*)	Poison B	NA2757	Poison	173.504	173.505	50 pounds	200 pounds	2	2	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Carbolic acid, liquid *or* Phenol, liquid (*liquid tar acid containing over 50% benzophenol*) (*RQ-1000/454*)	Poison B	NA2312	Poison	173.345	173.349	1 quart	55 gallons	1,2	1,2	
E	Carbolic acid, *or* Phenol (*RQ-1000/454*)	Poison B	NA1671	Poison	173.364	173.369	50 pounds	250 pounds	1,2	1,2	
E	Carbon bisulfide, *or* Carbon disulfide (*RQ-5000/2270*)	Flammable liquid	UN1131	Flammable liquid	None	173.121	Forbidden	Forbidden	1	5	Keep cool. Not permitted on any vessel transporting explosives
	Carbon dioxide, liquefied	Nonflammable gas	UN2187	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Carbon dioxide-nitrous oxide mixture	Nonflammable gas	UN1015	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
	Carbon dioxide-oxygen mixture	Nonflammable gas	UN1014	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
AW	Carbon dioxide, solid, *or* Dry ice, *or* Carbonice	ORM-A	UN1845	None	None	173.615	440 pounds	440 pounds	1	1	Stow away from open ventilators. Stow away from cyanides or cyanide mixtures, liquid or dry
	Carbon monoxide	Flammable gas	UN1016	Flammable gas	173.306	173.302	Forbidden	150 pounds	1	4	
	Carbon remover, liquid	Flammable liquid	UN1132	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
EAW	Carbon tetrachloride (*RQ-5000/2270*)	ORM-A	UN1846	None	173.505	173.620	1 quart	55 gallons	1,2	1,2	Stow away from living quarters
	Carbonyl chloride. See Phosgene		UN1076								
	Carboys, empty, must be classed for the hazardous material previously contained in carboy. See 173.29										
	Cartridge bags, empty, with black powder igniter	Class C explosive	NA0325	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Cartridge cases, empty, primed	Class C explosive	UN0379	Explosive C	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Cartridge, practice ammunition	Class C explosive	NA0362	Explosive C	None	173.101a	50 pounds	150 pounds	1,2	1,2	
	Case oil. See Gasoline *or* Naptha										
	Casinghead gasoline. See Gasoline		UN1257								
W	Castor Beans	ORM-C		None	173.505	173.952			1,2	1,2	Stow away from living quarters and foodstuffs. Bulk shipments permitted in tight vans or containers only on cargo vessels (Castor beans only)
W	Castor pomace. *See* Castor beans										
	Caustic, potash, dry, solid, flake, bead, *or* granular. *See* Potassium hydroxide, dry, etc.		UN1813								
	Caustic potash, liquid *or* solution. *See* Potassium hydroxide solution		UN1814								
	Caustic soda, dry, solid, flake, bead, *or* granular. *See* Sodium hydroxide, dry, etc.		UN1823								
	Caustic soda, liquid *or* solution. *See* Sodium hydroxide solution		UN1824								
W	*Cellosolve acetate. See* Ethylene glycol monoethyl ether acetate										
W	*Cellosolve. See* Ethylene glycol monoethyl ether										
	Cement, adhesive, n.o.s. *See* Cement, liquid, n.o.s.		NA1133								
	Cement, container, linoleum, tile, *or* wallboard, liquid	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cement, leather	Flammable liquid	NA1133	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cement, liquid, n.o.s.	Combustible liquid	NA1133	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cement, liquid, n.o.s.	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	10 gallons	1,2	1	
	Cement, pyroxylin	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,21,2	51	
	Cement, roofing, liquid	Flammable liquid	NA1133	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cement, rubber	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cesium metal	Flammable solid	UN1407	Flammable solid and dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Charcoal, activated	Flammable solid	UN1362	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,3	1,3	
	Charcoal briquettes *or* briquets	Flammable solid	NA1361	Flammable solid	173.162	173.162	50 pounds	50 pounds	1,2	1,2	
	Charcoal screenings, made from 'pinon' wood	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,	
	Charcoal screenings, wet	Forbidden									
	Charcoal, shell	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,2	
	Charcoal, wet	Forbidden									
	Charcoal, wood, ground, crushed, granulated, *or* pulverized	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,2	
	Charcoal, wood, lump	Flammable solid	NA1361	Flammable solid	173.162	173.162	50 pounds	50 pounds	1,2	1,2	
	Charcoal wood screenings, other than 'pinon' wood screenings	Flammable solid	NA1361	Flammable solid	None	173.162	Forbidden	Forbidden	1	1	
	Charged oil well jet perforating gun (*total explosive contents in guns 20 pounds or more per motor vehicle*)	Class A explosive		Explosive A	None	173.53 173.80	Forbidden	Forbidden			Forbidden
	Charged oil well jet perforating gun (*total explosive contents in guns not exceeding 20 pounds per motor vehicle or special offshore down hole tool pallet*)	Class C explosive	NA0124	Explosive C	None	173.53 173.110	Forbidden	Forbidden	1,2	5	Forbidden

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Special requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(c) Cargo vessel	(d) Passenger vessel	(e) Other requirements
	Chemical ammunition explosive. See Ammunition, chemical, explosive										
	Chemical ammunition, nonexplosive (*containing a Poison B material*)	Poison B	UN2016	Poison	173.153	173.230	Forbidden	55 gallons			See correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements
	Chemical ammunition, nonexplosive (*containing an irritating material*)	Irritating material	UN2017	Irritant	None	173.243	Forbidden	20 pounds			See correct shipping name of applicable Irritant material for stowage, special handling, and special segregation requirements
	Chemical ammunition, nonexplosive (*containing a Poison A material*)	Poison A	UN2016	Poison gas	None	173.229	Forbidden	Forbidden			See correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements
	Chemical kit	Corrosive material	NA1760	Corrosive	173.246		1 quart	1 quart	1,3	1,3	
	Chlorate and borate mixture (*containing more than 28% chlorate*)	Oxidizer	UN1458	Oxidizer	173.153	173.229	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate and magnesium chloride mixture (*containing more than 28% chlorate*)	Oxidizer	UN1459	Oxidizer	173.153	173.229	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds, and away from powdered metals
	Chlorate explosive, dry. See High explosive										
	Chlorate, n.o.s.	Oxidizer	UN1461	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate, n.o.s., wet	Oxidizer	NA1461	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate of potash. *See* Potassium chlorate		UN1485								
	Chlorate of soda. *See* Sodium chlorate		UN1495								
	Chlorate powder. *See* High explosive										
*E	Chlordane, liquid (*RQ-1/.454*)	Combustible liquid	NA2762	None	173.118a	None	No limit	No limit	1,2	1,2	
	Chlorie acid. (*See* chlorine dioxide hydrate)		NA2020								
	Chloride of phosphorus. *See* Phosphorus trichloride		NA1809								
	Chloride of sulfur. *See* Sulfur chloride		NA1828								
W	Chlorinated lime (*chloride of lime*) *See* Bleaching powder		NA2208								
	Chlorine dioxide hydrate, frozen	Oxidizer	NA2020	Oxidizer and Poison	None	173.237	Forbidden	Forbidden			Forbidden
E	Chlorine (*RQ-10/4.54*)	Nonflammable gas	UN1017	Nonflammable gas and Poison	None	173.304 173.314 173.315	Forbidden	Forbidden	1,2	5	Stow in a well-ventilated space. Stow away from organic materials
	Chlorine trifluoride	Oxidizer	UN1749	Oxidizer and Poison	None	173.246	Forbidden	100 pounds	1,3	5	Stow in well ventilated area away from organic material
	4-Chloro-o-toluidine hydrochloride	Poison B	UN1579	Poison	None	173.362	Forbidden	1 quart	1,2	1,2	
	Chloroacetic acid, liquid or solution. See Monochloroacetic acid, liquid or solution		UN1750								
	Chloroacetic acid, solid	Corrosive material	UN1751	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Chloroacetophenone, gas, liquid, *or* solid (CN)	Irritating material	UN1697	Irritant	None	173.382	Forbidden	75 pounds	1	5	
	Chloroacetyl chloride	Corrosive material	UN1752	Corrosive	None	173.253	Forbidden	1 quart	1	5	Keep dry
	Chlorobenzene. *See* Chlorobenzol		UN1134								
E	Chlorobenzol (*RQ-100/45.4*)	Flammable liquid	UN1134	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	p-Chlorobenzoyl peroxide	Organic peroxide	NA2113	Organic peroxide	None	173.157 173.158	Forbidden	25 pounds	1	1	
	Chlorodinitrobenzene. See Dinitrochlorobenzene		UN1577								
	Chlorodinitrobenzol. See Dinitrochlorobenzol, solid										
EAW	Chloroform (*RQ-5000/2270*)	ORM-A	UN1888	None	173.505	173.509	10 gallons	55 gallons	1,2	1,2	Stow away from living quarters and foodstuffs
	Chlorophenyltrichlorosilane	Corrosive material	UN1753	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Chloropicrin, absorbed	Poison B	NA1583	Poison	None	173.357	Forbidden	Forbidden	1	5	Keep cool
	Chloropicrin and methyl chloride mixture	Poison A	UN1582	Flammable gas and Poison gas	None	173.329	Forbidden	Forbidden	1	5	Keep cool
	Chloropicrin and nonflammable, nonliquefied compressed gas mixture	Poison A	NA1955	Nonflammable gas and Poison gas	None	173.329	Forbidden	Forbidden	1	5	Keep cool
	Chloropicrin, liquid	Poison B	UN1580	Poison	None	173.357	Forbidden	Forbidden	1	5	Keep cool
	Chloropicrin mixture (*containing no compressed gas or Poison A liquid*)	Poison B	UN1583	Poison	None	173.357	Forbidden	Forbidden	1	5	Keep cool
A	Chloroplatinic acid, solid	ORM-B	UN2507	None	173.505	173.510 173.800	25 pounds	100 pounds			
	2-Chloropropene	Flammable liquid	UN2356	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
E	Chlorosulfonic acid (*RQ-1000/454*)	Corrosive material	UN1754	Corrosive	173.244	173.254	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Chlorosulfonic acid-sulfur trioxide mixture	Corrosive material	UN1754	Corrosive	173.244	173.254	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
EA	Chlorpyrifos (*RQ-1/0.454*)	ORM-A	NA2783	None	None	173.510	100 pounds	No limit	2	2	
E	Chromic acetate (*RQ-1000/454*)	ORM-B	NA9101	None	None	173.510	No limit	No limit	2	2	
E	Chromic acid mixture, dry (*RQ-1000/454*)	Oxidizer	NA1463	Oxidizer	173.153	173.164	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
E	Chromic acid, solid (*RQ-1000/454*)	Oxidizer	UN1463	Oxidizer	173.153	173.164	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs. Stow separate from flammable liquids and solids
*E	Chromic acid solution (*RQ-1000/454*)	Corrosive material	UN1755	Corrosive	173.244	173.287	1 quart	1 gallon	1	1	
	Chromic anhydride. *See* Chromic acid, solid		NA1463								
	Chromic fluoride, solid	Corrosive material	UN1756	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
	Chromic fluoride solution	Corrosive material	UN1757	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
E	Chromic sulfate (*RQ-1000/454*)	ORM-E	NA9100	None	None	173.510	No limit	No limit	2	2	
	Chromic trioxide. *See* Chromic acid, solid		UN1463								

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Chromium oxychloride *or* Chromyl chloride	Corrosive material	UN1758	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Chromous chloride (*RQ-1000/454*)	ORM-E	NA9102	None	None	173.510	No limit	No limit	2	2	
	Cigar and cigarette lighter fluid. See Lighter fluid		UN1226								
	Cigarette lighter (*or other similar ignition device*)	Flammable gas	UN1057	Flammable gas	173.21 175.10	173.308	21 ounces	25 pounds	1	1	
	Cigarette lighter (*or other similar ignition device*)	Flammable liquid	NA1993	Flammable liquid	173.21 175.10	173.118	Forbidden	Forbidden	1	1	
	Cigarette load	Class C explosive	NA0337	Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Cloud gas cylinder. See Chemical ammunition										
	Coal briquettes, hot	Forbidden									
	Coal facings. *See* Coal ground bituminous, *etc.*										
	Coal gas. See Hydrocarbon gas, nonliquefied										
	Coal, ground bituminous, sea coal, coal facings, *etc.*	Flammable solid	NA1361	Flammable solid	173.165		Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Coal oil (*export shipment only*). *See* Kerosene		NA1223								
	Coal tar distillate	Combustible liquid	NA1137	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar distillate	Flammable liquid	NA1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar dye, liquid (*not otherwise specifically named in Sec. 172.101*)	Corrosive material	NA1760	Corrosive	173.244	173.245 173.249a	1 quart	10 gallons	1,2	1,2	
	Coal tar light oil	Combustible liquid	NA1137	None	173.118a				1,2	1,2	
	Coal tar light oil	Flammable liquid	NA1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar naptha	Combustible liquid	NA2553	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar naptha	Flammable liquid	NA2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar oil	Combustible liquid	NA1137	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar oil	Flammable liquid	NA1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Coating solution	Flammable liquid	UN1139	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cobalt resinate, precipitated	Flammable solid	UN1318	Flammable solid	None	173.166	Forbidden	125 pounds	1,2	1,2	
E	Cobaltous bromide (*RQ-1000/454*)	ORM-E	NA9103	None	None	173.510	No limit	No limit	2	2	
E	Cobaltous formate (*RQ-1000/454*)	ORM-E	NA9104	None	None	173.510	No limit	No limit	2	2	
E	Cobaltous sulfamate (*RQ-1000/454*)	ORM-E	NA9105	None	None	173.510	No limit	No limit	2	2	
	Cocculus, solid (*fishberry*)	Poison B	UN1584	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
*W	Coconut meal pellets *containing at least 6% and not more than 13% moisture and not more than 10% residual fat content*	ORM-C		None	173.505	173.955			1,2	4	Keep dry
	Coir. *See* Fibers		NA1372								
	Coke, hot	Forbidden									
	Collodion	Flammable liquid	NA2060	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Collodion cotton, wet. See Nitrocellulose, wet		UN2555								
	Cologne spirits (*alcohol*)	Flammable liquid	UN1987	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Columbian spirits (*wood alcohol*)	Flammable liquid	UN1230	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Combination fuze	Class C explosive	NA0367	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Combination primer	Class C explosive	NA0378	Explosive C	None	173.107	50 pounds	150 pounds	1,3	5	
	Combustible liquid, n.o.s.	Combustible liquid	UN1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Commercial shaped charge. See High explosive										
	Common fireworks. *See* Fireworks, common										
	Compound, cleaning, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Compound, cleaning, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, cleaning, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Compound, cleaning, liquid (containing hydrochloric (muriatic) acid)	Corrosive material	NA1789	Corrosive	173.244	173.263	1 quart	1 gallon	1	1	
	Compound, cleaning, liquid (containing hydrofluoric acid)	Corrosive material	NA1790	Corrosive	172.244	173.256	1 quart	1 gallon	1	4	
	Compound, cleaning liquid (*containing phosphoric acid, acetic acid, sodium potassium hydroxide*)	Corrosive material	NA1760	Corrosive	173.244	173.245 173.249a	1 quart	1 quart	1,2	1,2	
	Compound, enamel	Flammable liquid	NA1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Compound, lacquer, paint, *or* varnish, removing, reducing, or thinning, liquid	Combustible liquid	NA1142	None	173.118a				1,2	1,2	
	Compound, lacquer, paint, *or* varnish removing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Compound, polishing, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.129	1	55 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Compound, rust preventing *or* Compound, rust removing	Corrosive material	NA1760	Corrosive	173.144	173.245	1 quart	1 gallon	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Compound, tree *or* weed killing, liquid	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Compound, tree *or* weed killing, solid	Oxidizer	NA1479	Oxidizer	173.153	173.154 173.229	25 pounds	100 pounds			
	Compound, vulcanizing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, vulcanizing, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	172.119	1 quart	10 gallons	1,2	1	
	Compound, water treatment, liquid. *See* Water treatment, liquid		NA1760								
	Compressed gas, n.o.s.	Flammable gas	UN1954	Flammable gas	173.306	173.302 173.304 173.305	Forbidden	300 pounds	1	4	
	Compressed gas, n.o.s.	Nonflammable gas	UN1956	Nonflammable gas	173.306	173.302 173.304 173.305	150 pounds	300 pounds	1,2	1,2	
	Consumer commodity	ORM-D		None	None	173.510 173.1200	65 pounds gross	65 pounds gross			Not subject to requirements of Part 176
	Container, reused or empty, must be classed for the hazardous material previously contained. See 173.28, 173.29										
E	Copper acetoarsenite, solid (*RQ-100/45.4*)	Poison B	UN1585	Poison	173.354	173.357	50 pounds	200 pounds	1,2	1,2	
	Copper arsenite, solid	Poison B	UN1586	Poison	173.354	173.355	50 pounds	200 pounds	1,2	1,2	
EA	Copper chloride (*RQ-10/4.54*)	ORM-B	UN2802	None	173.505	173.510 173.600	25 pounds	100 pounds			
	Copper cyanide	Poison B	UN1587	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
W	Copra	ORM-C	UN1363	None	173.505	173.960			1,2	1,2	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Copra pellets. See Coconut meal pellets										
	Cordeau detonant fuse	Class C explosive	NA0289	Explosive C	None	173.104	50 pounds	200 pounds	1,2	1,2	
	Corrosive battery fluid. *See* Electrolyte (acid), *or* Alkaline Corrosive battery fluid										
	Corrosive liquid, n.o.s.	Corrosive material	UN1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	For material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified by Sec. 172.203(c).
	Corrosive solid, n.o.s.	Corrosive material	UN1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1	4	For material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified by Sec. 172.203(c).
	Cosmetics, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cosmetics, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cosmetics, n.o.s.	Flammable solid	NA1325	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Cosmetics, n.o.s.	Oxidizer	NA1479	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Cosmetics, n.o.s., liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Cosmetics, n.o.s., solid	Corrosive material	NA1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
W	Cotton	ORM-C		None	173.505	173.965			1,2	1,2	Segregation same as for flammable solids. *See* 176.900 to 176.904
W	Cotton batting	ORM-C		None	173.505	173.970			1,2	1,2	Keep dry. Stow away from vegetable or animal oils. *See* 176.900 to 176.904
W	Cotton batting dross. *See* Cotton batting										
	Cotton, burnt. See Burnt cotton										
W	Cotton seed hull fiber *or* shavings, pulp, *or* cut linters. See Cotton batting										
	Cotton sweepings. *See* Cotton waste										
W	Cotton wadding. *See* Cotton batting										
W	Cotton waste	ORM-C		None	173.505	173.975			1,2	1,2	Keep dry. Stow away from vegetable or animal oils. *See* 176.900 to 176.904
	Cotton waste, oily (*with more than 5% of animal or vegetable oil*)	Flammable solid	UN1364	Flammable solid			Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Coumaphos (*RQ-10/4.54*)	Poison B	NA2783	Poison	173.354	173.355	50 pounds	200 pounds	2	2	
	Creosote, coal tar	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Creosote oil. See Creosote coal tar										
E	Cresol (*RQ-1000/454*)	Corrosive material	NA2076	Corrosive	173.244	173.245	1 gallon	55 gallons	2	2	
E	Crotonaldehyde (*RQ-100/45.4*)	Flammable liquid	UN1143	Flammable liquid and Poison	173.118	173.119	1 quart	1 gallon	1,2	1	
	Crotonic acid	Corrosive material	UN2823	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Crotonylene	Flammable liquid	UN1144	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Crude nitrogen fertilizer solution (more than 25.3 p.s.i.g.)	Nonflammable gas	NA1043	Nonflammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,3	1,3	
	Crude oil, petroleum	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Crude oil, petroleum	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cumene hydroperoxide	Organic peroxide	NA2116	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
E	Cupric acetate (*RQ-100/45.4*)	ORM-E	NA9106	None	None	173.510	No limit	No limit	2	2	
	Cupric cyanide. See Copper cyanide		UN1587								
E	Cupric nitrate (*RQ-100/45.4*)	Oxidizer	NA1479	Oxidizer	173.153	173.182	25 pounds	100 pounds	2	2	
E	Cupric oxalate (*RQ-100/45.4*)	ORM-E	NA2449	None	None	173.510	No limit	No limit	2	2	
E	Cupric sulfate, ammoniated (*RQ-100/45.4*)	ORM-E	NA9110	None	None	173.510	No limit	No limit	2	2	
E	Cupric sulfate (*RQ-10/4.54*)	ORM-E	NA9109	None	None	173.510	No limit	No limit	2	2	
E	Cupric tartrate (*RQ-100/45.4*)	ORM-E	NA9111	None	None	173.510	No limit	No limit	2	2	
	Cuprietheylene-diamine solution	Corrosive material	UN1761	Corrosive	173.244	173.249	1 quart	1 gallon	1,2	1,2	
	Cyanide or cyanide mixture, dry	Poison B	UN1588	Poison	173.364	173.370	25 pounds	200 pounds	1,2	1,2	Keep dry. Stow away from acids
	Cyanogen bromide	Poison B	UN1889	Poison	None	173.379	Forbidden	25 pounds	1	5	Shade from radiant heat. Segregation same as for corrosive materials
E	Cyanogen chloride *containing less than 0.9% water* (*RQ-10/4.54*)	Poison A	UN1589	Nonflammable gas and Poison Gas	None	173.328	Forbidden	Forbidden	1	5	Shade from radiant heat
	Cyanogen gas	Poison A	UN1026	Flammable gas and Poison Gas	None	173.328	Forbidden	Forbidden	1	5	
E	Cyclohexane (*RQ-1000/454*)	Flammable liquid	UN1145	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclohexanone peroxide, *50 to 85% peroxide*	Organic peroxide	NA2119	Organic peroxide	173.157	173.158	Forbidden	25 pounds	1	1	
	Cyclohexanone peroxide and bis (1-hydroxy cyclohexyl) peroxide mixture. *See appropriate cyclohexanone peroxide entry immediately preceding*										
	Cyclohexanone peroxide, *not over 50% peroxide*	Organic peroxide	NA2896	Organic peroxide	173.153	173.154	2 pounds	25 pounds	1,2	1,2	
	Cyclohexenyl trichlorosilane	Corrosive material	UN1762	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Cyclohexyl trichlorosilane	Corrosive material	UN1763	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Cyclopentane	Flammable liquid	UN1146	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclopentane, methyl	Flammable liquid	UN2298	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclopropane	Flammable gas	UN1027	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	1	
	Cyclotetramethylenetetranitramine, wet with not less that 10 percent water. See high explosive.										
	Cyclotrimethylenetrinitramine, desensitized. See High explosive										
	Cyclotrimethylenetrinitramine, wet with not less than 10% water. See High explosive										
	Cylinder, empty, including ton tanks, must be classed for the hazardous material previously contained in cylinder. See 173.29										
EA	2,4-D esters. *See* 2,4-Dichlorophenoxyacetic acid esters		NA2765								
	2,4-D. *See* 2,4-Dichlorophenoxyacetic acid		NA2765								
EA	DDT *or* Dichlorodiphenyltrichloroethane (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit			
	Dead oil. See Creosote, coal tar										
	Decaborane	Flammable solid	UN1868	Flammable solid and Poison	173.118a	None	No limit	No limit	1,2	1,..	
	Decahydronaphthalene	Combustible liquid	UN1147	None	173.118a	None	No limit	No limit	1,2	1,..	
	Decalin. See Decahydronaphthalene		UN1147								
	Delay electric igniter	Class C explosive	NA0206	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Denatured alcohol. *See* Alcohol, n.o.s.		UN1095								
	Depth bomb. See Explosive bomb										
	Detonating fuze, Class A, *with or without radioactive components*	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Detonating fuze, Class C explosive	Class C explosive	UN0257	Explosive C	None	173.113	50 pounds	150 pounds	1,3	1,3	
	Detonating primer	Class A explosive		Explosive A	None	173..68	Forbidden	Forbidden	6	5	
	Di-(2-ethylhexyl) phosphoric acid	Corrosive material	NA1902	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Diacetone alcohol	Flammable liquid	UN1148	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diacetyl	Flammable liquid	UN2346	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
EA	Diazinon (*RQ-1/.454*)	ORM-A	NA2783	None	173.505	173.510	No limit	No limit			
	Diazodinitrophenol. *See* initiating explosive										
A	Dibromodifluoromethane	ORM-A	UN1941	None	173.505	173.510 173.605	10 gallons	55 gallons			
W	1,2-Dibromoethane. *See* Ethylene dibromide		UN1605								
E	Dicamba (*RQ-1000/454*)	ORM-E	NA2769	None	None	173.510	No limit	No limit	2	2	
E	Dichlobenil (*RQ-1000/454*)	ORM-E	NA2769	None	None	173.510	No limit	No limit	2	2	
E	Dichlone (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	2	2	
E	*1,1-Dichloro-2,2-bis (parachlorophenyl) ethane. See* TDE										
	Dichloroacetic acid	Corrosive material	UN1764	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*J-E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Dichloroacetyl chloride	Corrosive material	UN1765	Corrosive	173.244	173.247	1 quart	1 gallon	1	4	Keep dry
EA	Dichlorobenzene, ortho, liquid (*RQ-100/45.4*)	ORM-A	UN1591	None	173.505	173.510	No limit	No limit			
EA	Dichlorobenzene, para, solid (*RQ-100/45.4*)	ORM-A	UN1592	None	173.505	173.510	No limit	No limit			
	Dichlorobutene	Flammable liquid	NA2566	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
A	Dichlorodifluoroethylene	ORM-A	NA9018	None	173.505	173.510 173.605	10 gallons	55 gallons			
	Dichlorodifluoromethane	Nonflammable gas	UN1028	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane and difluoroethane mixture (*constant boiling mixture*)	Nonflammable gas	UN2602	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-dichlorotetrafluoroethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane monochlorodifluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-trichloromonofluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-trichloromonofluoromethane-monochloro difluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306 173.505	173.304 173.314 173.315 173.510	150 pounds-None				
	Dichlorodifluoromethane-trichlorotrifluoroethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodiphenyltrichloroethane. *See* DDT		NA2761								
	Dichloroethylene	Flammable liquid	UN1150	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dichloroisopropyl ether	Corrosive material	UN2490	Corrosive	173.244	173.254	1 quart	10 gallons	1,2	1,2	
A	Dichloromethane *or* methylene chloride	ORM-A	UN1593	None	173.505	173.510 173.605	10 gallons	55 gallons			
	Dichloropentane	Flammable liquid	UN1152	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
EA	2,4-Dichlorophenoxyacetic acid esters (*RQ-100/45.4*)	ORM-A	NA2765	None	None	173.510	50 pounds	No limit	2	2	
EA	2,4-Dichlorophenoxyacetic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510					
	Dichlorophenyltrichlorosilane	Corrosive material	UN1766	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
E	Dichloropropane. *See* Propylene dichloride		UN1279								
E	Dichloropropene and propylene dichloride mixture (*RQ-5000/2270*)	Flammable liquid	NA2047	Flammable liquid	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Dichloropropene (*RQ-5000/2270*)	Flammable liquid	UN2047	Flammable liquid	173.118	173.119	1 quart	10 gallons	2	2	
E	2,2-Dichloropropionic acid (*RQ-5000/2270*)	Corrosive material	NA1760	Corrosive	173.244	173.245	2 gallons	10 gallons	2	2	
E	Dichlorvos (*RQ-10/4.54*)	Poison B	NA2783	Poison	173.364	173.365	Forbidden	1 quart	2	2	
	Dicumyl peroxide *50% solution*	Organic peroxide	NA2121	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Dicumyl peroxide, dry	Organic peroxide	UN2121	Organic peroxide	173.153	173.154	2 pounds	25 pounds	1,2	1,2	
EA	Dieldrin (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit			
	Diesel Fuel. *See* Fuel oil										
	Diethyl cellosolve. *See* Ethylene glycol diethyl ether		UN1153								
	Diethyl dichlorosilane	Flammable liquid	UN1767	Flammable liquid	None	173.135	Forbidden	10 gallons	1	1	Keep dry. Segregation same as for corrosives
	Diethyl ketone	Flammable liquid	UN1156	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Diethylamine (*RQ-1000/454*)	Flammable liquid	UN1154	Flammable liquid	173.118	173.119	Forbidden	5 pints	1,3	4	
	Diethylene glycol dinitrate. *See* 173.51	Forbidden									
	1,1-Difluoro 1-chloroethane. *See* Difluoromonochloroethane		UN2517								
	Difluoroethane	Flammable gas	UN1030	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Difluoromonochloroethane	Flammable gas	UN2517	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Difluorophosphoric acid, anhydrous	Corrosive material	UN1768	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	
	Dihydropyran	Flammable liquid	UN2376	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	4	
	Diisobutyl ketone	Combustible liquid	UN1157	None	173.118a	None	No limit	No limit	1,2	1,2	
	Diisooctyl acid phosphate	Corrosive material	UN1902	Corrosive	173.244	173.236	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Diisopropylamine	Flammable liquid	UN1158	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diisopropylbenzene hydroperoxide solution, *not over 60% peroxide*	Organic peroxide	NA2171	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Diisopropylethanolamine	Corrosive material	UN2925	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Diisopropylether	Flammable liquid	UN1159	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Dimethyl carbonate	Flammable liquid	UN1161	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dimethyl ether	Flammable gas	UN1033	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Dimethyl sulfate	Corrosive material	UN1595	Corrosive	None	173.255	Forbidden	1 quart	1	5	Keep cool
	Dimethyl sulfide	Flammable liquid	UN1164	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
E	Dimethylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1032	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	
E	Dimethylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1160	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	2,3-Dimethylbutane	Flammable liquid	UN2457	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	1,4-Dimethylcyclohexane	Flammable liquid	UN2263	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dimethyldichlorosilane	Flammable liquid	UN1162	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
	Dimethylhexane dihydroperoxide, dry	Forbidden									
	Dimethylhexane dihydroperoxide, (with 30% or more water)	Organic peroxide	NA2174	Organic peroxide	None	173.157	Forbidden	25 pounds	1	1	
	Dimethylhydrazine, unsymmetrical (*UDMH*)	Flammable liquid	UN1163	Flammable liquid and Poison	None	173.145	Forbidden	5 pints	1,2	1	Keep dry. Separate from corrosive and oxidizing materials, and organic peroxides.
E	Dinitrobenzene, solid, *or* dinitrobenzol, solid (*RQ-1000/454*)	Poison B	NA1597	Poison	173.364	173.371	50 pounds	200 pounds	1,2	1,2	
*E	Dinitrobenzene solution (*RQ-1000/454*)	Poison B	NA1597	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Dinitrochlorobenzol, solid *or* Dinitrochlorobenzene	Poison B	UN1577	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
A	Dinitrocyclohexylphenol	ORM-A	NA9026	None	173.505	173.510	No limit	No limit			
*E	Dinitrophenol solution (*RQ-1000/454*)	Poison B	UN1599	Poison	173.345	173.362a	1 quart	65 pounds	1,2	1,2	Stow away from heavy metals and their compounds. If flash point is 141 deg F or less segregation same as for flammable liquids
E	Dinitrotoluene (*RQ-1000/454*)	ORM-E	UN1600	None	None	173.510	No limit	No limit	2	2	
	Dioxane	Flammable liquid	UN1165	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dioxolane	Flammable liquid	UN1166	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diphenyl dichlorosilane	Corrosive material	UN1769	Corrosive	None	173.280	Forbidden	10 gallons	1	1	
	Diphenyl methyl bromide, solid	Corrosive material	UN1770	Corrosive	173.244	173.245b	25 pounds	100 pounds	1	4	
	Diphenyl methyl bromide solution	Corrosive material	UN1770	Corrosive	173.244	173.247	1 quart	1 gallon	1,2	1,2	
	Diphenylaminechloroarsine (*DM*)	Irritating material	UN1698	Irritant	None	173.382	Forbidden	75 pounds	1	5	
	Diphosgene. See Phosgene										
E	Diquat (*RQ-1000/454*)	ORM-E	NA2781	None	None	173.510	No limit	No limit	2		
	Disinfectant, liquid	Corrosive material	UN1903	Corrosive	173.244	173.245	1 quart	10 gallons	1	4	
	Disinfectant, liquid	Poison B	UN1601	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Disinfectant, liquid, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Disinfectant, solid	Poison B	UN1601	Poison	173.364	173.365	50 pounds	200 pounds			
	Dispersant Gas *or* Refrigerant Gas. *See* 173.314 NOTE 13 and 173.15 NOTE 9										
	Distillate (petroleum or coal tar)	Flammable liquid	UN1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Disulfoton (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.364	173.365	Forbidden	1 quart	2	2	
E	Diuron (*RQ-100/45.4*)	ORM-E	NA2767	None	None	173.510	No limit	No limit	2	2	
	Divinyl ether	Flammable liquid	UN1167	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Dodecyl trichlorosilane	Corrosive material	UN1771	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
E	Dodecylbenzenesulfonic acid (*RQ-1000/454*)	ORM-E	NA2584	None	None	173.510	No limit	No limit	2	2	
	Dressing, leather	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Dressing, leather	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Drier. See Paint drier, liquid										
	Drill cartridge				173.55						
	Drugs, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Drugs, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Drugs, n.o.s.	Flammable solid	NA1325	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Drugs, n.o.s.	Oxidizer	UN1479	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Drugs, n.o.s. liquid	Corrosive material	UN1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Drugs, n.o.s. liquid	Poison B	UN2810	Poison	173.345	173.346	1 quart	55 gallons	1,3	1	
	Drugs, n.o.s. solid	Corrosive material	UN1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Drugs, n.o.s. solid	Poison B	UN2811	Poison	173.364	173.365	50 pounds	200 pounds	1,3	1,3	
	Drums, empty, must be classed for the hazardous material previously contained in drum. See 173.29										
	Dry ice. *See* Carbon dioxide, solid		UN1845								
	Dusts, by-product, poisonous. *See* arsenical dust										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Dye intermediate, liquid	Corrosive material	UN2801	Corrosive	173.244	173.245 173.245a	1 quart	10 gallons	1,2	1,2	Stow away from foodstuffs and living quarters
	Dynamite. See High explosive										
E	EDTA. *See* Ethylenediaminetetraacetic acid										
	Electric blasting caps. *See* Blasting caps, electric										
	Electric squib	Class C explosive	UN0206	Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Electric storage battery, wet. *See* Battery, electric storage, wet		NA2794								
	Electrolyte (*acid*), battery fluid (*not over 47% acid*)	Corrosive material	UN2796	Corrosive	173.244	173.257	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Electrolyte (*acid*), *or* alkaline (*corrosive*) battery fluid packed with dry-storage battery	Corrosive material	NA2797	Corrosive	None	173.273	Forbidden	5 pints	1,2	1,2	
	Electrolyte (*acid*), or alkaline (*corrosive*) battery fluid packed with battery charger, radio current supply device, or electronic equipment and actuating device.	Corrosive material	NA2797	Corrosive	None	173.273	Forbidden	5 pints	1,2	1,2	
	Empty cartridge bag with black powder igniter	Class C explosive	NA0055	Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Empty cartridge case, primed	Class C explosive	UN0055	Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Enamel. *See* Paint, enamel, lacquer, etc.		UN1263								
E	Endosulfan (*RQ-1/0.454*)	Poison B	NA2761	Poison	173.364	173.365	1 pound	10 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
E	Endrin (*RQ-1/0.454*)	Poison B	NA2761	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Engine, internal combustion				173.129				1,2	1,2	Not permitted in unventilated containers
	Engine starting fluid	Flammable gas	UN1960	Flammable gas	None	173.304	Forbidden	60 pounds	1,2	5	
E	Epichlorohydrin (*RQ-1000/454*)	Flammable liquid	UN2023	Flammable liquid	173.118	173.119	1 quart	10 gallons	2	2	
	Eradicator, paint *or* grease, liquid	Flammable liquid	UN1850	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Etching acid, liquid, n.o.s.	Corrosive material	NA1760	Corrosive	None	173.240	Forbidden	10 pounds	1	5	
	Ethane	Flammable gas	UN1035	Flammable gas	173.306	173.304	Forbidden	200 pounds	1,2	4	
	Ether (*ethyl*)	Flammable liquid	UN1155	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Ether, Ethyl. *See* Ether										
E	Ethion (*RQ-10/4.54*)	Poison B	NA2783	Poison	173.364	173.365	Forbidden	1 quart	2	2	
	Ethyl acetate	Flammable liquid	UN1173	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl acrylate, inhibited	Flammable liquid	UN1917	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl alcohol. *See* Alcohol, n.o.s.		UN1170								
	Ethyl aldehyde. *See* Acetaldehyde		UN1089								
E	Ethyl benzene (*RQ-1000/454*)	Flammable liquid	UN1175	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl borate	Flammable liquid	UN1176	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	Keep dry
	Ethyl butyl acetate	Combustible liquid	UN1177	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl butyl ether	Flammable liquid	UN1179	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl butyraldehyde	Flammable liquid	UN1178	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl butyrate	Flammable liquid	UN1180	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Ethyl chloride	Flammable liquid	UN1037	Flammable liquid	None	173.123	Forbidden	173.123	1,2	1	Segregation same as for flammable gases
	Ethyl chloroacetate	Combustible liquid	UN1181	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl chloroformate (*chlorocarbonate*)	Flammable liquid	UN1182	Flammable liquid and Poison	None	173.298	Forbidden	5 pints	1,2	1	
	Ethyl chlorothioformate	Corrosive material	UN2826	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1,2	1	
	Ethyl crotonate	Flammable liquid	UN1862	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl dichlorosilane	Flammable liquid	UN1892	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
	Ethyl ether. See Ether		UN1155								
	Ethyl formate	Flammable liquid	UN1190	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Ethyl lactate	Combustible liquid	UN1192	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl mercaptan	Flammable liquid	UN2363	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	1	
	Ethyl methyl ether	Flammable liquid	UN1039	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	1	Segregation same as for flammable gases
	Ethyl methyl ketone	Flammable liquid	UN1193	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl nitrate (*nitric ether*)	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	Forbidden	Forbidden	1,2	1	
	Ethyl nitrite (nitrous ether)	Flammable liquid	UN1194	Flammable liquid	None	173.119	Forbidden	Forbidden	1,3	5	
	Ethyl phenyl dichlorosilane	Corrosive material	UN2435	Corrosive	None	173.280	Forbidden	10 gallons	1	5	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ethyl phosphonothioic dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl phosphonous dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl phosphorodichloridate	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl propionate	Flammable liquid	UN1195	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl silicate (*tetra ethyl ortho silicate*)	Combustible liquid	UN1292	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl trichlorosilane	Flammable liquid	UN1196	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
	Ethylene	Flammable gas	UN1962	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	4	
	Ethylene chlorohydrin	Poison B	UN1135	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	Segregation same as for flammable liquids
EAW	Ethylene dibromide (1,2-dibromethane) (*RQ-1000/454*)	ORM-A	UN1605	None	173.505	173.620	1 quart	55 gallons	1,2	1,2	Stow away from living quarters
E	Ethylene dichloride (*RQ-5000/2270*)	Flammable liquid	UN1184	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethylene glycol diethyl ether (*diethyl 'Cellosolve'*)	Combustible liquid	UN1153	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monoethyl ether (*'Cellosolve'*)	Combustible liquid	UN1171	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monoethyl ether acetate (*'Cellosolve acetate'*)	Combustible liquid	UN1172	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monomethyl ether (*methyl 'Cellosolve'*)	Combustible liquid	UN1188	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monomethyl ether acetate (*methyl 'Cellosolve acetate'*)	Combustible liquid	UN1189	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene imine, inhibited	Flammable liquid	UN1185	Flammable liquid and Poison	None	173.139	Forbidden	5 pints	1,2	1	
	Ethylene oxide	Flammable liquid	UN1040	Flammable liquid	None	173.124	Forbidden	173.124	1,2	1	Segregation same as for flammable gases
E	Ethylenediamine (*RQ-1000/454*)	Flammable liquid	UN1604	Flammable liquid	173.118	173.119	Forbidden	1 quart	2	2	
E	Ethylenediaminetetraacetic acid (*RQ-5000/2270*)	ORM-E	NA9117	None	None	173.510	No limit	No limit	2	2	
	Ethylhexaldehyde	Combustible liquid	UN1191	None	173.118a	None	No limit	No limit	1,2	1,2	
	Etiologic agent, n.o.s.	Etiologic agent	UN2814	Etiologic agent	173.386	173.387	173.386	4 liters			Not permitted except under specific conditions approved by the Department
W	Excelsior (shredded wood) *when dry, clear, and free from oil*	ORM-C		None	173.505	173.980			1,3	1,3	Stow away from organic, corrosive, or oxidizing materials
W	Exothermic ferrochrome	ORM-C		None	173.505	173.985			1	1	
W	Exothermic ferromanganese. *See* Exothermic ferrochrome										
W	Exothermic silicon chrome. *See* Exothermic ferrochrome										
	Explosive auto alarm	Class C explosive	UN0001	Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Explosive bomb	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with these items
	Explosive cable cutter	Class C explosive	UN0070	Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive mine	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with these items
	Explosive, new approval, and evaluation See 173.86										
	Explosive power device, Class B	Class B explosive.		Explosive B	None	173.94	Forbidden	150 pounds	1,2	5	
	Explosive power device, Class C	Class C explosive	NA0323	Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive projectile	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with this material
	Explosive release device	Class C explosive	UN0173	Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive rivet	Class C explosive	UN0174	Explosive C	None	173.100	50 pounds	150 pounds	1,2	1,2	
	Explosive, sample for laboratory examination				173.86		Forbidden	173.86			
	Explosive torpedo	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with this material
	Extract, liquid, flavoring	Flammable liquid	UN1197	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Fabric with animal or vegetable oil. See Fibers or fabric containing not more than 5% animal or vegetable fat										
AW	Feed, wet, mixed	ORM-C		None	173.505	173.990	Forbidden	Forbidden	3	3	Stow in cool, dry, well ventilated compartment. Do not stow bags over ten tiers high without flooring off. Do not overstow
W	Felt, waste. *See* Cotton waste										
	Felt, waste, wet. *See* Waste wool, wet										
E	Ferric ammonium citrate (*RQ-1000/454*)	ORM-E	NA9118	None	None	173.510	No limit	No limit	2	2	
E	Ferric ammonium oxalate (*RQ-1000/454*)	ORM-E	NA9119	None	None	173.510	No limit	No limit	2	2	
	Ferric arsenate, solid	Poison B	UN1606	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Ferric arsenite, solid	Poison B	UN1607	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
EA	Ferric chloride, solid, *anhydrous* (*RQ-1000/454*)	ORM-B	UN1773	None	173.505	173.510	25 pounds	100 pounds			
*E	Ferric chloride solution (*RQ-1000/454*)	Corrosive material	UN2582	Corrosive	173.244	173.245 173.245a	1 quart	10 quarts	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Special requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Ferric fluoride (*RQ-100/45.4*)	ORM-E	NA9120	None	None	173.510	No Limit	No Limit	2	2	
E	Ferric nitrate (*RQ-1000/454*)	Oxidizer	UN1466	Oxidizer	173.153	173.182	25 pounds	100 pounds	2	2	
E	Ferric sulfate (*RQ-1000/454*)	ORM-E	NA9121	None	None	173.510	No Limit	No Limit	2	2	
W	Ferrophosphorus	ORM-A		None	173.505	173.635			1,2	1,2	Keep dry. Stow away from living quarters.
AW	Ferrosilicon, *containing 30% or more but not more than 70% silicon*	ORM-A	UN1408	None	173.505	173.510 173.645	Forbidden	25 pounds	1,2	1,2	Keep dry. Stow away from living quarters. Segregation same as for flammable solids labeled Dangerous When Wet.
E	Ferrous ammonium sulfate (*RQ-1000/454*)	ORM-E	NA9122	None	None	173.510	No Limit	No Limit	2	2	
	Ferrous arsenate (*iron arsenate*), solid	Poison B	UN1608	Poison	173.504	173.505	50 pounds	200 pounds	1,2	1,2	
EA	Ferrous chloride, solid (*RQ-100/45.4*)	ORM-B	NA1759	None	None	173.510	No Limit	No Limit	2	2	
E	Ferrous chloride, solution (*RQ-100/45.4*)	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	5 gallons	2	2	
E	Ferrous sulfate (*RQ-1000/454*)	ORM-E	NA9125	None	None	173.510	No Limit	No Limit	2	2	
	Fertilizer ammoniating solution containing free ammonia (*more than 25.3 p.s.i.g.*)	Nonflammable gas	UN1043	Nonflammable gas	173.505	173.304 173.314	Forbidden	200 pounds	1,2	4	
	Fertilizer, tankage. *See* Garbage, tankage										
	Fibers, burnt	Flammable solid	NA1372	Flammable solid	None	173.100	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
W	Fibers (*jute, hemp, flax, sisal, coir, kapok, and similar vegetable fibers*)	ORM-C	NA1372	None	173.505	173.505			1,2	1,2	Stow away from animal or vegetable oils. Segregation same as for flammable solids.
	Fibers *or* fabric, containing not more than 5% animal *or* vegetable oil	Flammable solid	NA1373	Flammable solid	None	173.170	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
	Film (nitrocellulose)	Flammable solid	NA1324	Flammable solid	None	173.177	50 pounds	200 pounds	1,2	1,3	Stow away from other flammable cargo or solvents.
	Film, photographic, (including scrap film), safety, nonflammable, or slow burning. Not subject to requirements of this subchapter		NA2002								
	Fire extinguisher	Nonflammable gas	UN1044	Nonflammable gas	173.505		150 pounds	200 pounds	1,2	1,2	
	Fire extinguisher charge containing not more than 50 grains of propellant explosive per unit. Not subject to requirements of this subchapter.										
	Fire extinguisher charge containing sulfuric acid	Corrosive material	UN1774	Corrosive	173.231		1 quart	1 gallon	1,2	1,2	
	Firecracker salute. *See* Fireworks, common *or* special										
	Firecracker. *See* Fireworks, common *or* special										
	Fireworks, common	Class C explosive	NA0335	Explosive C	None	173.100 173.108	50 pounds	200 pounds	1,3	1,3	Passenger vessels in metal lockers only
	Fireworks, exhibition display piece. *See* Fireworks, special										
	Fireworks, special	Class B explosive		Explosive B	None	173.53 173.91	Forbidden	200 pounds	3	3	Passenger vessels in metal lockers only. Toy torpedoes must not be packed with other special fireworks.
W	Fish meal *or* fish scrap containing 6% to 12% water	ORM-C	NA1374	None	173.505	173.505			1,2	1,2	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. *Use double strip stowage* for cargo 6-12 percent moisture containing not more than 12 percent fat. *Use single strip stowage* for cargo 6-12 percent moisture containing 12-15 percent fat.
	Fish meal *or* fish scrap containing less than 6% or more than 12% water	Flammable solid	NA1374	Flammable solid	None	173.171	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Fissile radioactive material. *See* Radioactive material, fissile		UN2918								
	Flame retardant compound liquid	Corrosive material	NA1760	Corrosive	173.244	173.291	1 quart	10 gallons	1,2	1,2	
	Flammable Gas n.o.s. *See* Compressed gas, n.o.s.		UN1954								
	Flammable liquid, n.o.s.	Flammable liquid	UN1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Flammable solid, n.o.s.	Flammable solid	UN1325	Flammable solid	173.153	173.154	25 pounds	25 pounds	1,2	1,2	
	Flare, airplane. *See* Fireworks, special										
	Flare. *See* Fireworks, common										
	Flash cartridge. *See* Fireworks, special *or* Low explosives										
	Flash cracker. *See* Fireworks, common *or* special										
	Flash powder. *See* Fireworks, special *or* Low explosives										
	Flax. *See* Fibers										
	Flexible linear shaped charge, metal clad	Class C explosive	UN0237	Explosive C	None	173.104	50 pounds	200 pounds	1,3	1,3	
	Flowers of sulfur. *See* Sulfur		NA1350								
	Flue dust, poisonous	Poison B	UN1662	Poison	173.504	173.505	50 pounds	200 pounds	1,2	1,2	
	Fluoboric acid	Corrosive material	UN1775	Corrosive	173.244	173.293	1 quart	1 gallon	1,2	1,2	
	Fluoric acid. *See* Hydrofluoric acid		UN1790								
	Fluorine	Nonflammable gas	UN1045	Poison and Oxidizer	None	173.[illegible]	Forbidden	Forbidden	1	5	Stow in well ventilated space away from organic materials
	Fluorophosphoric acid, anhydrous. *See* Monofluorophosphoric acid, anhydrous		UN1776								
	Fluorosilicic acid. *See* Hydrofluosilicic acid		UN1778								
	Fluorosulfonic acid *or* Fluosulfonic acid	Corrosive material	UN1777	Corrosive	None	173.274	Forbidden	1 gallon	1	5	Keep dry
EAW	Formaldehyde, *or* formalin solution (*in containers of 110 gallons or less*) (*RQ-1000/454*)	ORM-A	NA2209	None	173.505	173.510	10 gallons	55 gallons	1,2	4	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Formaldehyde, *or* formalin solution (*in containers over 110 gallons*) (*RQ-1000/454*)	Combustible liquid	NA2209	None	173.118a	None	10 gallons	55 gallons	1,2	1,2	
	Formalin. *See* Formaldehyde solution		UN2209								
E	Formic acid (*RQ-5000/2270*)	Corrosive material	UN1779	Corrosive	173.244	173.245 173.289	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
*E	Formic acid solution (*RQ-5000/2270*)	Corrosive material	NA1779	Corrosive	173.244	173.245 173.289	1 quart	5 gallons	1,2	1,2	
	Fuel, aviation, turbine engine	Flammable liquid	UN1863	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Fuel oil	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fuel oil, Diesel. *See* Fuel oil		NA1993								
	Fuel oil, No. 1, 2, 4, 5 *or* 6	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fulminate of mercury, dry	Forbidden									
	Fulminate of mercury, wet. See Initiating explosive										
E	Fumaric acid (*RQ-5000/2270*)	ORM-E	NA9126	None	None	173.510	No limit	No limit	2	2	
	Fumaryl chloride	Corrosive material	UN1780	Corrosive	173.244	173.245	1 quart	1 quart	1	1	Glass carboys not permitted
	Fumigant					173.152					
*E	Furfural (*RQ-1000/454*)	Combustible liquid	UN1199	None	173.118a	None	No limit	No limit	1,2	1	
	Fuse igniter	Class C explosive	NA0325	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Fuse, instantaneous	Class C explosive	UN0101	Explosive C	173.100		50 pounds	150 pounds	1,2	1,2	
	Fuse lighter	Class C explosive	UN0131	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Fuse, mild detonating, metal clad	Class C explosive	NA0104	Explosive C	None	173.104	50 pounds	300 pounds	1,2	1,2	
	Fuse, safety	Class C explosive	UN0105	Explosive C	173.100		50 pounds	300 pounds	1,2	1,2	
	Fusee (*railway or highway*)	Flammable solid	NA2254	Flammable solid	None	173.154a	50 pounds	200 pounds	1,3	1,3	
	Fusel oil	Combustible liquid	UN1201	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fuze, combination	Class C explosive	NA0257	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, detonating	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Fuze, detonating, Class C explosive	Class C explosive	NA0257	Explosive C	None	173.113	50 pounds	150 pounds	1,3	1,3	
	Fuze, detonating, radioactive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Fuze, percussion	Class C explosive	NA0320	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, time	Class C explosive	NA0257	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, tracer	Class C explosive	NA0306	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Gallium metal, liquid	ORM-B	NA2803	None	None	173.861	Forbidden	Forbidden	1	5	None
	Gallium metal, solid	ORM-B	NA2803	None	None	173.862	40 pounds	40 pounds	1,3	1	Shade from radiant heat
W	Garbage tankage *containing 8% or more water*	ORM-C		None	173.505	173.1000			1,2	1,2	
	Garbage tankage, *containing less than 8% water*	Flammable solid	NA1325	Flammable solid	None	173.209	Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Gas cylinder, empty. *See* Cylinder, empty										
	Gas drips, hydrocarbon	Combustible liquid	UN1864	None	173.118a	None	No limit	No limit	1,2	1,2	
	Gas drips, hydrocarbon	Flammable liquid	UN1864	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Gas identification set	Poison A	NA9035	Poison gas	None	173.331	Forbidden	Forbidden	1	5	
	Gas identification set	Irritating material	NA9035	Irritant	None	173.331	Forbidden	Forbidden	1	5	
	Gas mine. See Explosive mine										
	Gas oil. *See* Fuel oil		UN1202								
	Gasoline (*including casing-head and natural*)	Flammable liquid	NA1257	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	4	
	Gelatine Dynamite. See High explosive										
	Germane	Poison A	UN2192	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	
	Grenade, empty, primed	Class C explosive	NA0110	Explosive C	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Grenade, hand *or* rifle, explosive (*with or without gas, smoke, or incendiary material*)	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	No other cargo may be stowed in the same hold with these items
	Grenade, tear gas	Irritating material	NA1700	Irritant	None	173.385	Forbidden	75 pounds	1,2	1	
	Grenade without bursting charge: With incendiary material (Special fireworks)	Class B explosive		Explosive B	173.91		Forbidden	Forbidden	3	3	Passenger vessels in metal lockers only
	Grenade without bursting charge: With smoke charge (Smoke grenade)	Class C explosive	NA0303	Explosive C	173.108		50 pounds	150 pounds	1,3	1,3	
	Grenade without bursting charge: With Poison A gas charge	Poison A		Poison gas	173.330		Forbidden	Forbidden			*See* correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements
	Grenade without bursting charge: With Poison B charge	Poison B		Poison	173.350		Forbidden	Forbidden			*See* Correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Guanidine nitrate	Oxidizer	UN1467	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Separate from nitro-compounds, chlorates, and acids
	Guanyl nitrosamino guanyl tetrazene. See Initiating explosive										
	Guanyl nitrosamino guanylidene hydrazine. See Initiating explosive										
	Guided missile with warhead. See Rocket ammunition with explosive, illuminating, gas, incendiary, *or* smoke projectile										
	Guided missile, without warhead. See Rocket motor, Class A explosive *or* Rocket motor, Class B explosive										
	Guncotton. See High explosive										
E	Guthion (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.224	173.225	50 pounds	200 pounds	2	2	
	Hafnium metal, dry (*See Note 3, Sec. 173.214*)	Flammable solid	UN2545	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	
	Hafnium metal, wet	Flammable solid	UN1326	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
	Hair, wet	Flammable solid	NA1325	Flammable solid	None	173.172	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Hand signal device	Class C explosive	NA0191	Explosive C	None	173.103	50 pounds	200 pounds	1,2	1,2	
W	Hay	ORM-C	UN1327	None	173.505	173.1005			1,2	1,2	Segregation same as for flammable solids. Stow away from animal or vegetable oils
W	Hay or straw (*loose, wet, or damp*)		UN1327								Forbidden for water shipment
	Heater for refrigerator car, liquid fuel type (*containing fuel*)	Flammable liquid		Flammable liquid	173.149		Forbidden	Forbidden	1,2	1	
	Helium	Nonflammable gas	UN1046	Nonflammable gas	173.306	173.302 173.314	150 pounds	200 pounds	1,2	1,2	
	Helium-oxygen mixture	Nonflammable gas	NA1980	Nonflammable gas	173.306	173.302	150 pounds	200 pounds	1,2	1,2	
E	Heptachlor (*RQ-1/0.454*)	Poison B	NA2761	Poison	173.224	173.225	50 pounds	200 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Heptane	Flammable liquid	UN1206	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
W	*Hessian. See* Burlap cloth										
E	Hexachlorocyclopentadiene (*RQ-1/0.454*)	Corrosive material	NA2646	Corrosive	173.244	173.245	1 quart	10 gallons	2	2	
W	Hexachloroethane	ORM-A	NA9037	None	173.505	173.620			1,2	1,2	
	Hexadecyltrichlorosilane	Corrosive material	UN1781	Corrosive	None	173.239	Forbidden	10 gallons	1	1	Keep dry
	Hexadiene	Flammable liquid	UN2458	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
	Hexaethyl tetraphosphate and compressed gas mixture	Poison A	UN1612	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shield from radiant heat
	Hexaethyl tetraphosphate, liquid	Poison B	UN1611	Poison	None	173.253	Forbidden	1 quart	1	4	
	Hexaethyl tetraphosphate mixture, dry (*containing more than 2% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	5	
*	Hexaethyl tetraphosphate mixture, dry (*containing not more than 2% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	4	
	Hexaethyl tetraphosphate mixture, liquid (*containing more than 25% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	None	173.253	Forbidden	1 quart	1,2	5	
	Hexaethyl tetraphosphate mixture, liquid (*containing not more than 25% hexaethyl tetraphophate*)	Poison B	UN2783	Poison	173.253	173.253	1 quart	1 quart	1,2	4	
	Hexafluorophosphoric acid	Corrosive material	UN1782	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	
	Hexafluoropropylene	Nonflammable gas	UN1858	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	200 pounds	1	4	
	Hexafluoropropylene oxide	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314	150 pounds	200 pounds	1,2	1,2	
	Hexaldehyde	Flammable liquid	UN1207	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Hexamethylenediamine, solid	Corrosive material	UN2280	Corrosive	173.244	173.245	25 pounds	100 pounds	1,2	1,2	
	Hexamethylenediamine, solution	Corrosive material	UN1783	Corrosive	173.244	173.202	1 quart	10 gallons	1,2	1,2	
	Hexamethylenemine	Corrosive material	UN2493	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Hexane	Flammable liquid	UN1208	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Hexanoic acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Hexyltrichlorosilane	Corrosive material	UN1784	Corrosive	None	173.239	Forbidden	10 gallons	1	1	Keep dry
	High explosive	Class A explosive		Explosive A	173.055	173.61 to 173.87	Forbidden	Forbidden	6	5	
	High explosive, liquid	Class A explosive		Explosive A	None	173.62	Forbidden	Forbidden	6	5	
	Hydraulic accumulator. *See* Accumulator, pressurized		NA1956								
	Hydrazine, anhydrous	Flammable liquid	UN2029	Flammable liquid and Poison	None	173.270	Forbidden	5 pints	1	5	Segregation same as for corrosives
	Hydrazine, aqueous solution	Corrosive material	UN2030	Corrosive	None	173.270	Forbidden	5 pints	1	5	
	Hydriodic acid	Corrosive material	UN1787	Corrosive	173.244	173.245	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
	Hydrobromic acid, anhydrous. *See* Hydrogen bromide		UN1048								

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Hydrobromic acid, *more than 49% strength*	Corrosive material	UN1788	Corrosive	None	173.262	Forbidden	Forbidden	1	1	Glass carboys not permitted on passenger vessel
	Hydrobromic acid not more than 49% strength	Corrosive material	UN1788	Corrosive	173.244	173.262	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
	Hydrocarbon gas, liquefied	Flammable gas	UN1965	Flammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,2	1	
	Hydrocarbon gas, nonliquefied	Flammable gas	UN1964	Flammable gas	173.306	173.302	Forbidden	300 pounds	1,2	1	
E	Hydrochloric acid, anhydrous. *See* Hydrogen chloride		UN1050								
*E	Hydrochloric acid mixture (*RQ-5000/2270*)	Corrosive material	NA1789	Corrosive	173.244	173.263	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
*E	Hydrochloric acid solution, inhibited (*RQ-5000/2270*)	Corrosive material	NA1789	Corrosive	173.244	173.263	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
*E	Hydrochloric (*muriatic*) acid (*RQ-5000/2270*)	Corrosive material	UN1789	Corrosive	173.244	173.263	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
E	Hydrocyanic acid, liquefied (*RQ-10/4.54*)	Poison A	UN1051	Flammable gas and Poison gas	None	173.332	Forbidden	Forbidden	1	5	
E	Hydrocyanic acid (*prussic*), solution (*5% or more hydrocyanic acid*) (*RQ-10/4.54*)	Poison A	NA1613	Flammable gas and Poison gas	None	173.332	Forbidden	Forbidden	1	5	Shade from radiant heat. Aqueous solutions containing more than 20 percent hydrogen cyanide are not permitted in transportation by water
	Hydrocyanic acid (*prussic*), unstabilized	Forbidden									
E	Hydrocyanic acid solution, less than 5% hydrocyanic acid (*RQ-10/4.54*)	Poison B	NA1613	Poison	None	173.351	Forbidden	25 pounds	01	5	Shade from radiant heat
	Hydrofluoric acid, anhydrous. *See* Hydrogen fluoride		UN1052								
*E	Hydrofluoric acid solution (*RQ-5000/2270*)	Corrosive material	UN1790	Corrosive	173.244	173.264	1 quart	1 gallon	1	4	
*E	Hydrofluoric and sulfuric acids, mixture (*RQ-5000/2270*)	Corrosive material	UN1786	Corrosive	None	173.290	Forbidden	1 gallon	1	5	
	Hydrofluoroboric acid. *See* Fluoboric acid		UN1775	—							
	Hydrofluorosilicic acid	Corrosive material	UN1778	Corrosive	None	173.265	1 quart	1 gallon	1,2	1,2	
	Hydrogen	Flammable gas	UN1049	Flammable gas	173.306	173.302 173.314	Forbidden	300 pounds	1,2	54	
	Hydrogen bromide	Nonflammable gas	UN1048	Nonflammable gas	173.306	173.304	Forbidden	300 pounds	1	4	
	Hydrogen chloride	Nonflammable gas	UN1050	Nonflammable gas	173.306	173.304	Forbidden	300 pounds	1	4	
	Hydrogen fluoride	Corrosive material	NA1790	Corrosive	None	173.264	Forbidden	110 pounds	1	5	Segregation same as for nonflammable gases
	Hydrogen iodide solution. *See* Hydriodic acid		UN1787								
	Hydrogen, liquefied	Flammable gas	UN1966	Flammable gas	None	173.316	Forbidden	Forbidden			Forbidden
	Hydrogen peroxide solution (*8% to 40% peroxide*)	Oxidizer	NA2014	Oxidizer	173.244	173.266	1 quart	1 gallon	1,2	1	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals
	Hydrogen peroxide solution (40% to 52% peroxide)	Oxidizer	NA2014	Oxidizer	173.244	173.266	Forbidden	Forbidden	1	4	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals
	Hydrogen peroxide solution (over 52% peroxide)	Oxidizer	NA2015	Oxidizer	None	173.266	Forbidden	Forbidden	1	5	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals. Concentrations greater than 60% hydrogen peroxide not permitted on any vessel except under conditions approved by the Department
	Hydrogen selenide	Flammable gas	UN2202	Flammable gas and Poison	None	173.328	Forbidden	Forbidden	1	5	
	Hydrogen sulfate. *See* Sulfuric acid		UN1830								
E	Hydrogen sulfide (*RQ-100/45.4*)	Flammable gas	UN1053	Flammable gas and Poison	None	173.304 173.314	Forbidden	300 pounds	1	5	
	Hydrosilicofluoric acid. *See* Hydrofluorosilicic acid		UN1778								
	Hypochlorite solution *containing more than 7% available chlorine by weight*	Corrosive material	NA1791	Corrosive	173.244	173.277	1 quart	4 gallons	1,2	1	Glass carboys in hampers not permitted under deck
*A	Hypochlorite solution containing not more than 7% available chlorine *by weight*	ORM-B	NA1791	None	173.505	173.510	No limit	No limit			
	Igniter	Class C explosive	UN0325	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Igniter cord	Class C explosive	UN0066	Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Igniter fuse, metal clad.	Class C explosive	NA0103	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Igniter, jet thrust (jato)	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Igniter, jet thrust (jato)	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Igniter, rocket motor	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Igniter, rocket motor	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Illuminating projectile. See Fireworks, special										
	Iminobispropylamine	Corrosive material	UN2269	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Initiating explosive *Diazodinitrophenol*	Class A explosive		Explosive A	None	173.70	Forbidden	Forbidden	6	5	
	Initiating explosive *Fulminate of mercury*	Class A explosive		Explosive A	None	173.71	Forbidden	Forbidden	6	5	

§172.101 Hazardous Materials Table (cont'd)

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*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Initiating explosive *Guanyl nitrosamino guanylidene hydrazine*	Class A explosive		Explosive A	None	173.72	Forbidden	Forbidden	6	5	
	Initiating explosive *Lead azide, dextrinated type only*	Class A explosive		Explosive A	None	173.73	Forbidden	Forbidden	6	5	
	Initiating explosive *Lead mononitroresorcinate*	Class A explosive		Explosive A	None	173.70	Forbidden	Forbidden	6	5	
	Initiating explosive Lead styphnate (*lead trinitroresorcinate*)	Class A explosive		Explosive A	None	173.74	Forbidden	Forbidden	6	5	
	Initiating explosive *Nitro mannite*	Class A explosive		Explosive A	None	173.75	Forbidden	Forbidden	6	5	
	Initiating explosive *Nitroguanidine*	Class A explosive		Explosive A	None	173.76	Forbidden	Forbidden	6	5	
	Initiating explosive *Pentaerythrite tetranitrate*	Class A explosive		Explosive A	None	173.77	Forbidden	Forbidden	6	5	
	Initiating explosive Tetrazene (*guanyl nitrosamine guanyl tetrazene*)	Class A explosive		Explosive A	None	173.78	Forbidden	Forbidden	6	5	
	Ink	Combustible liquid	NA2867	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ink	Flammable liquid	NA1210	Flammable liquid	173.118	173.144	1 quart	10 gallons	1,2	1	
	Insecticide, dry, n.o.s.	Poison B	NA2588	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Insecticide, liquefied gas (*containing no Poison A or B material*)	Nonflammable gas	NA1968	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,3	1,3	
	Insecticide, liquefied gas, containing Poison A material *or* Poison B material	Poison A	NA1967	Poison gas	None	173.326 173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Insecticide, liquid, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Insecticide, liquid, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Insecticide, liquid, n.o.s.	Poison B	NA2902	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
W	Insulation tape (*varnished cloth type*). *See* Oiled material		NA1933								
	Iodine monochloride	Corrosive material	UN1792	Corrosive	None	173.223	Forbidden	1 quart	1	5	Keep dry
	Iodine pentafluoride	Oxidizer	UN2495	Oxidizer and Poison	None	173.246	Forbidden	100 pounds	1	1	Keep dry
	Iron chloride, solid. *See* Ferric chloride, solid		UN1773								
	Iron mass *or* sponge, *not properly oxidized*	Flammable solid	NA1383	Flammable solid	None	173.174	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Iron mass *or* sponge spent	Flammable solid	NA1376	Flammable solid	None	173.174	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
A	*Iron, oxide, spent*		UN1376				Forbidden	Forbidden			
	Iron sesquichloride, solid. *See* Ferric chloride		UN1773								
	Irritating agent, n.o.s.	Irritating material	NA1693	Irritant	173.232		Forbidden	75 pounds	1	1	Stow away from living quarters
	Isobutane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas		UN1969								
	Isobutyl acetate	Flammable liquid	UN1213	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isobutylamine	Flammable liquid	UN1214	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isobutylene or Liquefied petroleum gas. *See* Liquefied petroleum gas		UN1055								
	Isobutyric acid	Corrosive material	UN2529	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Isobutyric anhydride	Corrosive material	UN2530	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Isooctane	Flammable liquid	UN1262	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isooctene	Flammable liquid	UN1216	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Isopentane	Flammable liquid	NA2371	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Isopentanoic acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Isoprene (*RQ-1000/454*)	Flammable liquid	UN1218	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Isopropanol. *See* Alcohol, n.o.s.		UN1219								
E	Isopropanolamine dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9127	None	None	173.510	No limit	No limit	2	2	
	Isopropyl acetate	Flammable liquid	UN1220	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isopropyl acid phosphate solid	Corrosive material	UN1793	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
	Isopropyl mercaptan	Flammable liquid	UN2763	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	
	Isopropyl nitrate	Flammable liquid	UN1222	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isopropyl percarbonate, stabilized	Organic peroxide	NA2133	Organic peroxide	None	173.282	Forbidden	Forbidden	5	5	
	Isopropyl percarbonate, unstabilized	Organic peroxide	NA2134	Organic peroxide	None	173.218	Forbidden	Forbidden	5	5	
	Isopropyl phosphoric acid, solid. *See* Isopropyl acid phosphate, solid		UN1793								
	Isopropylamine	Flammable liquid	UN1221	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Jet thrust igniter. *See* Igniter, jet thrust										
	Jet thrust unit (*jato*)	Class A explosive		Explosive A	None	173.70	Forbidden	Forbidden	6	5	
	Jet thrust unit (*jato*)	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
W	*Jute. See* Fibers										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
W	*Kapok. See* Fibers										
E	Kelthane (*RQ-5000/2270*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	2	2	
E	Kepone (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	2	2	
	Kerosene	Combustible liquid	UN1223	None	173.118a	None	No limit	No limit	1,2	1,2	
	Lacquer base, liquid. *See* Paint, enamel, lacquer, stain, etc.		UN1263								
	Lacquer base, *or* Lacquer chips, dry	Flammable solid	NA2557	Flammable solid	173.153	173.175	25 pounds	100 pounds	1	1	
	Lacquer base *or* lacquer chips, plastic (*Wet with alcohol or solvent*)	Flammable liquid	NA1263	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,2	1	
	Lacquer removing, reducing, *or* thinning compound. *See* Compound, laquer, paint, *or* varnish, etc., removing, reducing *or* thinning liquid		NA1142								
	Lacquer. *See* Paint, enamel, lacquer, stain, etc.		UN1263								
	Lauroyl peroxide	Organic peroxide	UN2124	Organic peroxide	173.153	173.157 173.158	2 pounds	25 pounds	1,2	1	
E	Lead acetate (*RQ-5000/2270*)	ORM-E	UN1616	None	None	173.510	No limit	No limit	2	2	
E	Lead arsenate, solid (*RQ-5000/2270*)	Poison B	UN1617	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Lead arsenite, solid	Poison B	UN1618	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Lead azide. See Initiating explosive										
EA	Lead chloride (*RQ-5000/2270*)	ORM-B	NA2291	None	173.505	173.510 173.800	25 pounds	100 pounds			
	Lead cyanide	Poison B	UN1620	Poison	173.370		25 pounds	No limit	1,2	1,2	Stow away from acids
W	Lead dross	ORM-C	NA1794	None	173.505	173.1010			1,2	1,2	Segregation same as for corrosive materials
EA	Lead fluoborate (*RQ-5000/2270*)	ORM-B	NA2291	None	None	173.510	25 pounds	100 pounds	2	2	
EA	Lead fluoride (*RQ-1000/454*)	ORM-B	NA2811	None	None	173.510	25 pounds	100 pounds	2	2	
E	Lead iodide (*RQ-5000/2270*)	ORM-E	NA2811	None	None	173.510	No limit	No limit	2	2	
	Lead mononitroresorcinate. See Initiating explosive										
E	Lead nitrate (*RQ-5000/2270*)	Oxidizer	UN1469	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Lead peroxide	Oxidizer	UN1872	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
W	Lead scrap. *See* Lead dross										
E	Lead stearate (*RQ-5000/2270*)	ORM-E	NA2811	None	None	173.510	No limit	No limit	2	2	
	Lead styphnate (lead trinitroresorcinate). See Initiating explosive										
E	Lead sulfate, solid (*containing more than 3% free acid*) (*RQ-5000/2270*)	Corrosive material	UN1794	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
E	Lead sulfide (*RQ-5000/2270*)	ORM-E	NA2291	None	None	173.510	No limit	No limit	2	2	
E	Lead thiocyanate (*RQ-5000/2270*)	ORM-E	NA2291	None	None	173.510	No limit	No limit	2	2	
	Leather bleach *or* dressing	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Leather bleach *or* dressing	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Life-rafts, inflatable	ORM-C		None	None	173.906	1 per inaccessible cargo compartment	No limit	1,2	1,2	
	Lighter fluid	Flammable liquid	UN1226	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Lime-nitrogen. See Calcium cyanamide, not hydrated, etc.		NA1403								
E	Lime, slaked. *See* Calcium hydroxide										
	Lime, unslaked. *See* Calcium oxide		NA1910								
EA	Lindane (*RQ-1/.454*)	ORM-A	NA2761 NA1965	None	173.505	173.510	No limit	No limit			
	Liquefied hydrocarbon gas. *See* Hydrocarbon gas, liquefied										
	Liquefied nonflammable gas (*charged with nitrogen, carbon dioxide, or air*)	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304	300 pounds	300 pounds	1,2	1,2	
	Liquefied petroleum gas	Flammable gas	UN1075	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Liquid other than one classed as flammable, corrosive, poison or irritant, charged with nitrogen, carbon dioxide, or air. See Compressed gas n.o.s.										
	Lithium acetylide-ethylene diamine complex	Flammable solid	NA2813	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride	Flammable solid	UN1410	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride, ethereal	Flammable liquid	UN1411	Flammable liquid	None	173.137	Forbidden	1 quart	1	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium amide, powdered	Flammable solid	UN1412	Flammable solid	173.153	173.168	25 pounds	100 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium borohydride	Flammable solid	UN1413	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Lithium chromate (*RQ-1000/454*)	ORM-E	NA9134	None	None	173.510	No limit	No limit	2	2	
	Lithium ferrosilicon	Flammable solid	UN2830	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Lithium hydride	Flammable solid	UN1414	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hydride in fused solid form	Flammable solid	UN2805	Flammable solid and Dangerous when wet	None	173.206	Forbidden	100 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hypochlorite compound, dry (*containing more than 39% available chlorine*)	Oxidizer	UN1471	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
	Lithium metal	Flammable solid	UN1415	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium metal, in cartridges	Flammable solid	NA1415	Flammable solid and Dangerous when wet	173.206		1 pound	25 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium nitride	Flammable solid	UN2806	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium peroxide	Oxidizer	UN1472	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
	Lithium silicon	Flammable solid	UN1417	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
	London purple, solid	Poison B	UN1621	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Low blasting explosive. See Low explosive										
	Low explosive	Class A explosive		Explosive A	None	173.60	Forbidden	Forbidden	6	5	
	Lye. See Sodium hydroxide, solid		UN1823								
	Magnesium aluminum phosphide	Flammable solid	UN1419	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
	Magnesium arsenate, solid	Poison B	UN1622	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Magnesium dross, wet or hot	Forbidden			173.173						
	Magnesium, metal (*powdered, pellets, turnings, or ribbons*)	Flammable solid	NA1418	Flammable solid and Dangerous when wet	173.153	173.220	25 pounds	100 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
	Magnesium nitrate	Oxidizer	UN1474	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Magnesium perchlorate	Oxidizer	UN1475	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from powdered metals
	Magnesium peroxide, solid	Oxidizer	UN1476	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
	Magnesium scrap (*borings, clippings, shavings, sheet, turnings, or scalpings*)	Flammable solid	NA1869	Flammable solid and Dangerous when wet	173.153	173.220	Forbidden	Forbidden	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
A	Magnetized material	ORM-C	UN2807	Magnetized material	None	173.1020	No limit	No limit			
EA	Malathion (*RQ-10/4.54*)	ORM-A	NA2783	None	173.505	173.510	No limit	No limit			
EA	Maleic acid (*RQ-5000/2270*)	ORM-A	NA2215	None	None	173.510	25 pounds	100 pounds	2	2	Keep tightly closed.
EA	Maleic anhydride (*RQ-5000/2270*)	ORM-A	UN2215	None	None	173.510	25 pounds	100 pounds	1	1	
A	Manganese dioxide	ORM-B	NA1479	None	173.505	173.510	No limit	No limit			
	Matches, block. See Matches, strike anywhere		UN1331								
	Matches, safety, *book, card, or strike-on-box*	Flammable solid	UN1944	Flammable solid	173.176		50 pounds	50 pounds	1,2	1	
	Matches, strike anywhere	Flammable solid	UN1331	Flammable solid	None	173.176	Forbidden	Forbidden	1,2	1	
	Matting acid. *See* Sulfuric acid		UN1830								
	Medicines, n.o.s.	Combustible liquid	NA1851	None	173.118a	None	No limit	No limit	1,2	1,2	
	Medicines, n.o.s.	Flammable liquid	NA1851	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Medicines, n.o.s.	Flammable solid	NA1851	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, n.o.s.	Oxidizer	NA1851	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, n.o.s., liquid	Corrosive material	NA1851	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Medicines, n.o.s., liquid	Poison B	NA1851	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Medicines, n.o.s., solid	Corrosive material	NA1851	Corrosive	173.244	173.245	25 pounds	100 pounds	1,2	1,2	Keep dry
	Medicines, n.o.s., solid	Poison B	NA1851	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Memtetrahydro phthalic anhydride	Corrosive material	NA1760	Corrosive	None	173.298	Forbidden	1 quart	1,2	1	
	Mercaptan mixture, aliphatic	Flammable liquid	NA1228	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	
	Mercaptan mixture, aliphatic (*in containers over 110 gallons*)	Combustible liquid	NA1228	None	173.118a	None	Forbidden	10 gallons	1,2	1,2	
AW	Mercaptan mixture, aliphatic (*in containers of 110 gallons or less*). *See 173.141(b)*	ORM-A	NA1228	None	173.505	173.510	Forbidden	10 gallons	1,3	3	Stow in well ventilated space away from living quarters
E	Mercaptodimethur (*RQ-100/45.4*)	ORM-E	NA2757	None	None	173.510	No limit	No limit	2	2	
	Mercuric acetate	Poison B	UN1629	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric-ammonium chloride, solid	Poison B	UN1630	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric benzoate, solid	Poison B	UN1631	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric bromide, solid	Poison B	UN1634	Poison	173.364	173.365	Forbidden	25 pounds	1,2	1,2	
	Mercuric chloride, solid	Poison B	UN1624	Poison	173.364	173.372	Forbidden	25 pounds	1,2	1,2	
E	Mercuric cyanide, solid (*RQ-1/.454*)	Poison B	UN1636	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Mercuric iodide, solid	Poison B	UN1638	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric iodide solution	Poison B	NA1638	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
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	Mercuric nitrate (*RQ-10/4.54*)	Oxidizer	UN1625	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Mercuric oleate, solid	Poison B	UN1640	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric oxide, solid	Poison B	UN1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric oxycyanide, solid	Poison B	UN1642	Poison	173.364	173.365	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Mercuric-potassium cyanide, solid	Poison B	UN1626	Poison	173.364	173.365 173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Mercuric-potassium iodide, solid	Poison B	UN1643	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric salicylate solid	Poison B	UN1644	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric subsulfate, solid	Poison B	NA2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Mercuric sulfate, solid (*RQ-10/4.54*)	Poison B	UN1645	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Mercuric sulfocyanate, solid or mercuric thiocyanate, solid (*RQ-10/4.54*)	Poison B	UN1646	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurol *or* mercury nucleate, solid	Poison B	UN1639	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous acetate, solid	Poison B	NA1629	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous bromide, solid	Poison B	NA1634	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous gluconate, solid	Poison B	NA1637	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous iodide, solid	Poison B	NA1637	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Mercurous nitrate, solid (*RQ-10/4.54*)	Oxidizer	UN1627	Oxidizer	173.153	173.154	50 pounds	100 pounds	1,2	1,2	
	Mercurous oxide, black, solid	Poison B	NA1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous sulfate, solid	Poison B	UN1628	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury compound, n.o.s., solid	Poison B	UN2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury fulminate. See Initiating explosive										
A	Mercury, metallic	ORM-B	NA2809	None	None	173.860	173.860	173.860			
	Mesityl oxide	Flammable liquid	UN1229	Flammable liquid	None	173.119	1 quart	10 gallons	1,2	1,2	
W	Metal borings, shavings, turnings, *or* cuttings	ORM-C	NA2793	None	173.505	173.1025			1,2	1,2	Keep dry. Not permitted if temperature of material is at or above 130 deg F
	Methane	Flammable gas	UN1971	Flammable gas	173.306	173.302	Forbidden	300 pounds	1,2	4	
	Methanol. *See* Methyl alcohol		UN1230								
E	Methoxychlor (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	2	2	
	Methyl acetate	Flammable liquid	UN1231	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl acetone	Flammable liquid	UN1232	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl acrylate, inhibited	Flammable liquid	UN1919	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl alcohol	Flammable liquid	UN1230	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methylamyl acetate	Flammable liquid	UN1233	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Methyl amyl ketone	Combustible liquid	UN1110	None	173.118a	None	No limit	No limit	1,2	1,2	
	Methyl bromide and ethylene dibromide mixture, liquid	Poison B	UN1647	Poison	None	173.353	Forbidden	55 gallons	1	1	
	Methyl bromide and more than 2% chloropicrin mixture, liquid	Poison B	NA1581	Poison	None	173.353	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid (*including up to 2% chloropicrin*)	Poison B	NA1955	Poison	None	173.353a	Forbidden	300 pounds	1	5	Stow away from living quarters
	Methyl bromide, liquid (*bromomethane*) (*including up to 2% chloropicrin*)	Poison B	NA1581	Poison	None	173.353	Forbidden	55 gallons	1	5	Stow away from living quarters. Segregation same as for nonflammable gas.
	Methyl butene	Flammable liquid	NA2460	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
	Methyl butyrate	Flammable liquid	UN1237	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl cellosolve acetate. See Ethylene glycol monomethyl ether acetate		UN1189								
	Methyl cellosolve. See Ethylene glycol monomethyl ether		UN1188								
	Methyl chloride	Flammable gas	UN1063	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	
	Methyl chloride-methylene chloride mixture	Flammable gas	UN1912	Flammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,2	4	
	Methyl chlorocarbonate. *See* Methyl chloroformate		UN1238								
A	Methyl chloroform	ORM-A	UN1231	None	173.505	173.510 173.605	10 gallons	55 gallons			
	Methyl chloroformate	Flammable liquid	UN1238	Flammable liquid and Poison	None	173.288	Forbidden	5 pints	1,2	1	
	Methyl dichloroacetate	Corrosive material	UN2299	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Methyl dichlorosilane	Flammable liquid	UN1242	Flammable liquid	None	173.136	Forbidden	5 pints	1,2	1	
	Methyl ethyl ether. *See* Ethyl methyl ether		UN1039								
	Methyl ethyl ketone	Flammable liquid	UN1193	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl ethyl pyridine	Corrosive material	UN2300	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Methyl formate	Flammable liquid	UN1243	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Methyl isopropenyl ketone, inhibited	Flammable liquid	UN1246	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl magnesium bromide in ethyl ether *not over 40% concentration*	Flammable liquid	UN1928	Flammable liquid	None	173.149	Forbidden	Forbidden	1	1	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides
E	Methyl mercaptan (*RQ-100/45.4*)	Flammable gas	UN1064	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
E	Methyl methacrylate monomer, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1247	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Methyl methacrylate monomer, uninhibited (*high-purity, if acceptable under Sec. 173.21 of this subchapter*) (*RQ-5000/2270*)	Flammable liquid	NA1247	Flammable liquid	173.118	173.119	Forbidden	Forbidden	1,2	1	
	Methyl norbornene dicarboxylic anhydride. *See* Memtetrahydro phthalic anhydride		NA1769								
E	Methyl parathion, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.118	Forbidden	1 quart	1,3	1,3	
*E	Methyl parathion mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	1,2	
*E	Methyl parathion mixture, liquid, (containing 25% or less methyl parathion) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.119	1/2 pint	1 quart	1,2	1,2	
E	Methyl parathion mixture, liquid, (*containing over 25% methyl parathion*) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.119	Forbidden	1 quart	1,2	1,2	
	Methyl pentane	Flammable liquid	UN2462	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl phosphonothioic dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl phosphonous dichloride	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl propionate	Flammable liquid	UN1248	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl propyl ketone	Flammable liquid	UN1249	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl sulfate. *See* Dimethyl sulfate		UN1595								
	Methyl sulfide. *See* Dimethyl sulfide		UN1164								
	Methyl vinyl ketone, inhibited	Flammable liquid	UN1251	Flammable liquid	173.147	173.147	4 ounces	10 gallons	1,2	1	
	Methylacetylene-propadiene, stabilized	Flammable gas	NA1060	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Methylal	Flammable liquid	UN1234	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Methylamine, anhydrous *or* Monomethylamine	Flammable gas	UN1061	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
	Methylchloromethyl ether, anhydrous	Flammable liquid	UN1239	Flammable liquid and Poison	None	173.143	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methylcyclohexane	Flammable liquid	UN2296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methylcyclopentane	Flammable liquid	UN2298	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Methyldichloroarsine	Poison A	NA1555	Poison gas	None	173.323	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methylene chloride. *See* Dichloromethane		UN1593								
	Methylfuran	Flammable liquid	UN2301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Methylhydrazine	Flammable liquid	UN1244	Flammable liquid and Poison	None	173.143	Forbidden	5 pints	1,2	1	Stow separate from oxidizing materials and corrosives
	Methylpentadiene	Flammable liquid	UN2461	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyltrichlorosilane	Flammable liquid	UN1250	Flammable liquid	None	173.123	Forbidden	10 gallons	1,2	1	
E	Mevinphos (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.264	173.265	Forbidden	1 quart	2	2	
E	Mexacarbate (*RQ-1000/454*)	Poison B	NA2757	Poison	173.264	173.265	50 pounds	200 pounds	2	2	
	Mild detonating fuse, metal clad. See Fuse, mild detonating, metal clad										
	Mine, empty See 173.55										
	Mine, explosive, with gas material. See Explosive mine										
	Mine rescue equipment containing carbon dioxide	Nonflammable gas		Nonflammable gas	173.306		150 pounds	500 pounds	1,2	1,2	
	Mining reagent, liquid (*containing 20% or more cresylic acid*)	Corrosive material	NA2022	Corrosive	173.244	173.245 173.245a	1 quart	10 gallons	1,2	1,2	
A	Mipafox	ORM-A	UN2783	None	173.505	173.510	No limit	No limit			
	Mixed acid. *See* Nitrating (*mixed*) acid		NA1796								
A	Molybdenum pentachloride	ORM-B	UN2508	None	173.505	173.510 173.500	25 pounds	100 pounds			
	Monobromotrifluoromethane	Nonflammable gas	UN1009	Nonflammable gas	173.306	173.304 173.314	150 pounds	500 pounds	1,2	1,2	
	Monochloroacetic acid, liquid *or* solution	Corrosive material	UN1750	Corrosive	173.244	173.294	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Monochloroacetone	Forbidden									
	Monochloroacetone, stabilized *or* inhibited	Irritating material	NA1695	Irritant	None	173.294	Forbidden	5 gallons	1	1	Stow away from living quarters
	Monochlorodifluoromethane	Nonflammable gas	UN1018	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	500 pounds	1,2	1,2	
	Monochloroethylene. *See* Vinyl chloride		UN1086								
	Monochloropentafluoroethane	Nonflammable gas	UN1020	Nonflammable gas	173.306	173.304	150 pounds	500 pounds	1,2	1,2	
	Monochlorotetrafluoroethane	Nonflammable gas	UN1021	Nonflammable gas	173.306	173.304 173.314	150 pounds	500 pounds	1,2	1,2	
	Monochlorotrifluoromethane	Nonflammable gas	UN1022	Nonflammable gas	173.306	173.304	150 pounds	500 pounds	1,2	1,2	
	Monoethanolamine	Corrosive material	UN2491	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Monoethanolamine, solution	Corrosive material	UN2491	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Monoethylamine (*RQ-1000/454*)	Flammable liquid	UN1036	Flammable liquid	None	173.149	Forbidden	5 pints	1,2	5	Segregation same as for flammable gas
	Monofluorophosphoric acid, anhydrous	Corrosive material	UN1775	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	Keep dry

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Monomethylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1061	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	
*E	Monomethylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1235	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	Stow away from mercury and its compounds
	Mortar stain, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Mortar stain, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Moth balls. See Naphthalene		UN1334								
	Motion picture film. See Film										
	Motor fuel antiknock compound *or* antiknock compound	Poison B	UN1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flashpoint less than 141 deg F, segregation same as for flammable liquids
	Motor fuel, n.o.s.	Combustible liquid	NA1203	None	173.118a	None	No limit	No limit	1,2	1,2	
	Motor fuel, n.o.s.	Flammable liquid	NA1203	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Motor, internal combustion				173.120						
	Motor vehicle, *etc., including automobile, motorcycle, truck, tractor, and other self-propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system*	ORM-C		None	173.120 173.250 173.257 173.306 175.305 176.905				1,2	1,2	
	Muriatic acid. *See* Hydrochloric (*muriatic*) acid		UN1789								
E	Naled (*RQ-10/4.54*)	ORM-E	NA2783	None	None	173.510	No limit	No limit	2	2	
	Naphtha	Combustible liquid	NA2553	None	173.118a	None	No limit	No limit	1,2	1,2	
	Naphtha	Flammable liquid	NA2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Naphtha distillate	Combustible liquid	NA2553	None	173.118a	None	No limit	No limit	1,2	1,2	
	Naphtha distillate	Flammable liquid	NA2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Naphtha petroleum. See Petroleum naphtha		UN1255								
	Naphtha, solvent	Combustible liquid	UN1256	None	173.118a	None	No limit	No limit	1,2	1,2	
	Naphtha, solvent	Flammable liquid	UN1256	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
EAW	Naphthalene *or* Naphthalin (*RQ-5000/2270*)	ORM-A	UN1334	None	173.505	173.655	25 pounds	300 pounds	1,2	1,2	Segregation same as for flammable solids
E	Napthenic acid (*RQ-100/45.4*)	ORM-E	NA9137	None	None	173.510	No limit	No limit	2	2	
	Natural gasoline. See Gasoline										
	Neohexane	Flammable liquid	UN1208	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Neon	Nonflammable gas	UN1065	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	New explosive or explosive device				173.51	173.86					
E	Nickel ammonium sulfate (*RQ-5000/2270*)	ORM-E	NA9138	None	None	173.510	No limit	No limit	2	2	
	Nickel carbonyl	Flammable liquid	UN1259	Flammable liquid and Poison	None	173.126	Forbidden	Forbidden	1	5	Not permitted on a vessel carrying explosives. Shade from radiant heat. Segregation same as for flammable liquids 1a*
	Nickel catalyst, wet, *finely divided, activated, or spent. With not less than 40% water or other suitable liquid*	Flammable solid	UN1378	Flammable solid	None	173.233	Forbidden	100 pounds	1,2	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Nickel chloride (*RQ-5000/2270*)	ORM-E	NA9139	None	None	173.510	No limit	No limit	2	2	
	Nickel cyanide, solid	Poison B	UN1653	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Nickel hydroxide (*RQ-1000/454*)	ORM-E	NA9140	None	None	173.510	No limit	No limit	2	2	
E	Nickel nitrate (*RQ-5000/2270*)	Oxidizer	UN2725	Oxidizer	173.153	173.182	25 pounds	100 pounds	2	2	
E	Nickel sulfate (*RQ-5000/2270*)	ORM-E	NA9141	None	None	173.510	No limit	No limit	2	2	
	Nicotine hydrochloride	Poison B	UN1656	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nicotine, liquid	Poison B	UN1654	Poison	None	173.358	Forbidden	55 gallons	1,2	1,2	
	Nicotine salicylate	Poison B	UN1657	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nicotine sulfate, liquid	Poison B	UN1658	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nicotine sulfate, solid	Poison B	UN1658	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nicotine tartrate	Poison B	UN1659	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nitrate, n.o.s.	Oxidizer	NA1477	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Nitrate of ammonia explosives. See High explosive										
	Nitrating (*mixed*) acid	Oxidizer	NA1796	Oxidizer	None	173.267	Forbidden	1 quart	1	5	Segregation same as for corrosive materials
	Nitrating (*mixed*) acid, spent	Corrosive material	UN1826	Corrosive	None	173.248	Forbidden	1 quart	1	5	
E	Nitric acid, 40% or less (*RQ-1000/454*)	Corrosive material	NA1760	Corrosive	None	173.268	Forbidden	5 pints	1	5	Stow away from hydrazine, separate from diethylenetriamine
E	Nitric acid, fuming (*RQ-1000/454*)	Oxidizer	NA2032	Oxidizer and Poison	None	173.268	Forbidden	Forbidden	1	5	Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine
E	Nitric acid (*over 40%*) (*RQ-1000/454*)	Oxidizer	NA2031	Oxidizer and Corrosive	None	173.268	Forbidden	5 pints	1	5	Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine
	Nitric ether. See Ethyl nitrate										
	Nitric oxide	Poison A	UN1660	Poison gas	None	173.337	Forbidden	Forbidden	1	5	
	Nitro carbonitrate. See Blasting agent										
	Nitro carbonitrate. See High explosive										
	Nitroaniline	Poison B	UN1661	Poison	173.364	173.378	50 pounds	200 pounds	1,2	1,2	
	p-Nitroaniline. *See* Nitroaniline		UN1661								
E	Nitrobenzol, liquid (*oil of mirbane, nitrobenzene*) (*RQ-1000/454*)	Poison B	UN1662	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nitrocellulose, colloided, granular *or* flake, wet with not less than 20% alcohol *or* solvent, *or* block, wet with not less than 25% alcohol	Flammable liquid	NA2556	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Nitrocellulose, colloided, granular *or* flake, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
	Nitrocellulose, dry. See High explosive										
	Nitrocellulose flakes, wet with not less than 20% alcohol *or* solvent	Flammable liquid	NA2556	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	
	Nitrocellulose, wet with not less than 30% alcohol *or* solvent	Flammable liquid	NA2556	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	
	Nitrocellulose, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
	Nitrochlorobenzene, meta *or* para, solid	Poison B	NA1578	Poison	173.364	173.274	50 pounds	200 pounds	1,2	1,2	
	Nitrochlorobenzene, ortho, liquid	Poison B	NA1578	Poison	173.345	173.246	1 quart	55 gallons	1,2	1,2	
	Nitrogen	Nonflammable gas	NA1066	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	
E	Nitrogen dioxide, liquid (*RQ-1000/454*)	Poison A	UN1067	Oxidizer and Poison gas	None	173.326	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen fertilizer solution	Nonflammable gas	NA1043	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,3	1,3	
	Nitrogen peroxide, liquid	Poison A	NA1067	Oxidizer and Poison gas	None	173.326	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gas. Stow away from organic materials
	Nitrogen, pressurized Liquid	Nonflammable gas	NA1977	Nonflammable gas	None	173.304	Forbidden	300 pounds	1,3	1,3	
	Nitrogen tetroxide, liquid	Poison A	UN1067	Oxidizer and Poison gas	None	173.326	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitroglycerin, liquid, desensitized. See High explosive, liquid										
	Nitroglycerin, liquid, undesensitized. See 173.51	Forbidden									
	Nitroglycerin, spirits of. See Spirits of nitroglycerin		NA1204								
	Nitroguanidine, dry. See High explosive										
	Nitroguanidine, wet with not less than 20% water	Flammable solid	UN1336	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,2	4	
	Nitrohydrochloric acid	Corrosive material	UN1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
	Nitrohydrochloric acid, diluted	Corrosive material	NA1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
	Nitromannite. See High explosive										
	Nitromethane	Flammable liquid	UN1261	Flammable liquid	173.118	173.119a	1 quart	10 gallons	1,2	1,2	
	Nitromuriatic acid. *See* Nitrohydrochloric acid		UN1798								
E	Nitrophenol (*RQ-1000/454*)	ORM-E	UN1663	None	None	173.510	No limit	No limit	2	2	
	Nitrosoguanidine. *See* Initiating explosive										
	Nitrostarch, dry. *See* High explosive										
	Nitrostarch, wet with not less than 30% alcohol *or* solvent	Flammable liquid	NA1933	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,2	1	
	Nitrostarch, wet with not less than 20% water	Flammable solid	UN1337	Flammable solid	173.153	173.184	25 pounds	100 pounds	1	4	
	Nitrosyl chloride	Nonflammable gas	UN1069	Nonflammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1	4	
E	Nitrotoluene (*RQ-1000/454*)	ORM-E	UN1664	None	None	173.510	No limit	No limit	2	2	
	Nitrourea. See High explosive										
	Nitrous oxide	Nonflammable gas	UN1070	Nonflammable gas	173.306	173.304 173.315	150 pounds	300 pounds	1,2	1,2	Under deck stowage must be in well-ventilated space
	Nitroxylol	Poison B	NA1665	Poison	173.345	173.246	1 quart	55 gallons	1,2	1	
	Nonflammable gas, n.o.s. *See* Compressed gas, n.o.s.		UN1956								
	Nonliquefied hydrocarbon gas	Flammable gas	NA1964	Flammable gas	173.306	173.300	Forbidden	300 pounds	1,2	1	
	Nonyltrichlorosilane	Corrosive material	UN1799	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Nordhausen acid. *See* Sulfuric acid		NA1830								
W	Oakum	ORM-C		None	173.505	173.1035			1,2	1,2	
	Octadecyltrichlorosilane	Corrosive material	UN1800	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Octane	Flammable liquid	UN1262	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Octyltrichlorosilane	Corrosive material	UN1801	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Oil, *described as oil*, n.o.s., petroleum oil, *or* petroleum oil, n.o.s.	Combustible liquid	NA1270	None	173.118a	None	No limit	No limit	1,2	1,2	
	Oil, *described as oil*, oil, n.o.s., petroleum oil, *or* petroleum oil, n.o.s.	Flammable liquid	NA1270	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Oil of mirbane. See Nitrobenzol, liquid		UN1662								
	Oil of vitriol. *See* Sulfuric acid		NA1830								
	Oil well cartridge	Class C explosive	UN0278	Class C explosive	None	173.112	50 pounds	150 pounds	1,3	1,3	
	Oiled clothing (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material		NA1856								
AW	Oiled material (*manufactured article properly dried to prevent spontaneous heating*)	ORM-C	NA9033	None	173.505	173.1035	No limit	No limit	1,3	1,3	
	Oiled paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material		NA1379								
E	Oleum (*sulfuric acid fuming*) (*RQ-1000/454*)	Corrosive material	NA1831	Corrosive	None	173.272	Forbidden	5 pints	1,2	1	Under deck stowage must be in metal drums only. Keep dry.
	Organic peroxide, liquid, *or* solution, n.o.s.	Organic peroxide	NA9185	Organic peroxide	173.153	173.221	Forbidden	1 quart	1,2	1,2	Stow separate from combustible materials, explosives, or acids.
	Organic peroxide liquid *or* solution, n.o.s.	Flammable liquid	NA1993	Organic peroxide and Flammable liquid	None	173.119	Forbidden	1 quart	1,2	5	Stow separate from combustible materials, explosives, or acids

§172.101 Hazardous Materials Table (cont'd)

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	Organic peroxide, solid, n.o.s.	Organic peroxide	NA9187	Organic peroxide	173.153	173.154	Forbidden	25 pounds	1,2	1,2	Stow separate from combustible materials, explosives, or acids.
	Organic phosphate mixture, organic phosphate compound mixture, *or* organic phosphorus compound mixture, liquid	Poison B	NA2783	Poison	173.359	173.359	1/2 pint	1 quart	1,2	5	
	Organic phosphate mixture, organic phosphate compound mixture, *or* organic phosphorus compound mixture, solid *or* dry	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	4	
	Organic phosphate, organic phosphate compound, *or* organic phosphorus compound; mixed with compressed gas	Poison A	NA1955	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Organic phosphate, organic phosphate compound, *or* organic phosphorus compound; liquid	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,2	5	
	Organic phosphate, organic phosphate compound, *or* organic phosphorus compound; solid *or* dry	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	4	
A	ORM-A, n.o.s.	ORM-A	NA1693	None	173.505	173.510	No limit	No limit			
A	ORM-B, n.o.s.	ORM-B	NA1760	None	173.505	173.510	No limit	No limit			
	ORM-C See 173.500 and 176.900										
	Orthonitroaniline. *See* Nitroaniline		UN1661								
	Oxidizer material packed with other articles. See 173.152										
	Oxidizer, *or* Oxidizing material, n.o.s.	Oxidizer	UN1479	Oxidizer	173.153	173.154	25 pounds	25 pounds	1,2	1,2	
	Oxygen	Nonflammable gas	NA1072	Oxidizer	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	Under deck stowage must be in well ventilated space
	Oxygen, pressurized liquid	Nonflammable gas	NA1073	Oxidizer	None	173.304	Forbidden	Forbidden	1,3	1,3	Stow separate from acetylene. Do not overstow with other cargo
	Paint drier, liquid	Combustible liquid	UN1168	None	173.118a	None	No limit	No limit	1,2	1,2	
	Paint drier, liquid	Flammable liquid	UN1168	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Paint, enamel, lacquer, stain, shellac, *or* varnish, aluminum, bronze, gold, wood filler, liquid *or* lacquer base, liquid	Combustible liquid	NA1263	None	173.118a	None	No limit	No limit	1,2	1,2	
	Paint, enamel, lacquer, stain, shellac, *or* varnish, aluminum, bronze, gold, wood filler, liquid *or* lacquer base, liquid	Flammable liquid	NA1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Paint, reducing or thinning compound. See Compound, lacquer, paint, *or* varnish, reducing *or* thinning liquid, etc.		NA1142								
	Paper caps. See Toy caps										
W	Paper scrap (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1075			1,2	1,2	
	Paper stock, wet	Flammable solid	NA1325	Flammable solid	None	173.185	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Paper waste, wet. *See* Waste Paper, wet		NA1325								
	Paper waste (*when dry, clean, and free from oil*). *See* Paper scrap										
EA	Paraformaldehyde (*RQ-1000/454*)	ORM-A	UN2213	None	None	173.510	25 pounds	200 pounds	2	2	
	Paramenthane hydroperoxide	Organic peroxide	UN2125	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Paranitroaniline, solid. *See* Nitroaniline		NA1661								
E	Parathion and compressed gas mixture (*RQ-1/.454*)	Poison A	NA1967	Poison gas	None	173.334	Forbidden	Forbidden	1,3	5	
E	Parathion, liquid (*RQ-1/.454*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,3		
*E	Parathion mixture, dry (*RQ-1/.454*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,3	1,3	
E	Parathion mixture, liquid (*RQ-1/.454*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,3	1,3	
	Paris green, solid. *See* Copper acetoarsenite, solid		UN1585								
E	PCBs. *See* Polychlorinated biphenyls										
	Pentaborane	Flammable liquid	UN1380	Poison and Flammable liquid	None	173.138	Forbidden	Forbidden	1	5	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Pentachlorophenol (*RQ-10/4.54*)	ORM-E	NA2020	None	None	173.510	No limit	No limit	2	2	
	Pentaerythrite tetranitrate. See Initiating explosive										
	Pentaerythrite tetranitrate, desensitized, wet. See High explosive										
	Pentane	Flammable liquid	UN1265	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Pentolite, dry. See High explosive										
	Peracetic acid solution, *not over 40% peracetic acid and not over 6% hydrogen peroxide*	Organic peroxide	NA2131	Organic peroxide	173.223	173.223	1 pint	5 pints	1	4	Shade from radiant heat
	Perchlorate, n.o.s.	Oxidizer	NA1481	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
	Perchloric acid, *exceeding 50% but* not exceeding 72% strength	Oxidizer	UN1873	Oxidizer	None	173.269	Forbidden	5 pints	1	5	Segregation same as for corrosive materials. Stow away from hydrazine.
	Perchloric acid exceeding 72% strength	Forbidden									
	Perchloric acid, not over 50% acid	Oxidizer	UN1802	Oxidizer	173.244	173.269	Forbidden	5 pints	1	1	Segregation same as for corrosive materials. Stow away from hydrazine
	Perchloromethylmercaptan	Poison B	UN1670	Poison	173.345	173.360	Forbidden	10 pounds	1	4	
	Percussion cap	Class C explosive	NA0044	Explosive C	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Percussion fuze	Class C explosive	NA0257	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
A	Perfluoro-2-butene	ORM-A	NA2422	None	173.505	173.510 173.605	10 gallons	55 gallons			
	Permanganate, n.o.s.	Oxidizer	NA1482	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds, hydrogen peroxide, and acids
	Permanganate of potash. See Potassium permanganate		UN1490								
	Peroxide, organic. See Organic Peroxide										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Special requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
W	Pesticide, water reactive, *Including but not limited to fungicides, and herbicides, etc., which contain manganese ethylenebisdithiocarbamate*	ORM-C	NA2210	None	173.505	173.1949			2	2	Keep dry
W	Petroleum coke (*uncalcined*)	ORM-C		None	173.505	173.1045			1,2	1,2	Not permitted if temperature of material is at or above 130 deg F
	Petroleum crude. See Crude oil		NA1267								
	Petroleum distillate	Combustible liquid	UN1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Petroleum distillate	Flammable liquid	UN1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Petroleum ether	Flammable liquid	UN1271	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Petroleum gas, liquefied. See Liquefied petroleum gas		UN1075								
	Petroleum naphtha	Combustible liquid	UN1255	None	173.118a	None	No limit	No limit	1,2	1,2	
	Petroleum naphtha	Flammable liquid	UN1255	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Phencapton	ORM-A	NA2783	None	173.505	173.510	No limit	No limit			
	Phenol. *See* Carbolic acid		UN1671								
	Phenyldichloroarsine	Poison B	NA2810	Poison	None	173.355	Forbidden	30 gallons	1	5	
	Phenyltrichlorosilane	Corrosive material	UN1804	Corrosive	None	173.290	Forbidden	10 gallons	1	1	Keep dry
A	Phenyenediamine, meta or para, solid	ORM-A	UN1673	None	173.505	173.510	No limit	No limit			
E	Phosgene (diphosgene) (*RQ-5000/2270*)	Poison A	UN1076	Poison gas	None	173.332	Forbidden	Forbidden	1	5	
	Phosphine	Poison A	UN2199	Flammable gas and Poison gas	None	173.328	Forbidden	Forbidden	1	5	
E	Phosphoric acid *or* Phosphoric Acid Solution (*RQ-5000/2270*)	Corrosive material	UN1805	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Phosphoric acid triethylenemine. *See* Tris-(1-aziridinyl phosphine oxide)		NA2501								
	Phosphoric anhydride (*phosphorus pentoxide*)	Corrosive material	NA1807	Corrosive	None	173.183	Forbidden	100 pounds	1,2	1,2	Keep dry. Glass bottles not permitted under deck
E	Phosphorus, amorphous, red (*RQ-1/.454*)	Flammable solid	UN1338	Flammable solid	None	173.180	Forbidden	11 pounds	1,2	1,2	
	Phosphorus bromide. *See* Phosphorus tribromide		UN1808								
	Phosphorus chloride. *See* Phosphorus trichloride		UN1809								
	Phosphorus heptasulfide	Flammable solid	UN1339	Flammable solid	None	173.223	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus oxybromide	Corrosive material	UN1939	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus oxychloride (*RQ-5000/2270*)	Corrosive material	UN1810	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Phosphorus pentachloride, solid	Corrosive material	UN1806	Corrosive	None	173.191	Forbidden	5 pounds	1	1	Keep dry
E	Phosphorus pentasulfide (*RQ-1000/454*)	Flammable solid	UN1340	Flammable solid and Dangerous when wet	None	173.223	Forbidden	11 pounds	1,2	1,2	Separate from oxidizing material
	Phosphorus sesquisulfide	Flammable solid	UN1341	Flammable solid and Dangerous when wet	None	173.223	Forbidden	11 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus tribromide	Corrosive material	UN1808	Corrosive	None	173.270	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus trichloride (*RQ-5000/2270*)	Corrosive material	UN1809	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Phosphorus trisulfide	Flammable solid	UN1343	Flammable solid	None	173.223	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
E	Phosphorus, white *or* yellow, dry (*RQ-1/.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Phosphorus, white *or* yellow, in water (*RQ-1/.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	25 pounds	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Phosphoryl chloride. *See* Phosphorus oxychloride		UN1810								
	Photographic film. See Film										
	Photographic flash powder. See Fireworks, special *or* Low explosives										
	Picrate, dry. See High explosive										
	Picrate of ammonia. See High explosive										
	Picric acid, dry. See High explosive										
	Picric acid, wet, with not less than 10% water	Flammable solid	NA1344	Flammable solid	None	173.192 173.193	1 pound	25 pounds	1	5	Under deck stowage permitted on cargo vessels if wet with more than 20% water. Stow away from heavy metals and their compounds
	Picric acid, wet with not less than 10% water, over 25 pounds. See High explosive										
	Pinane hydroperoxide solution *not over 45% peroxide.*	Organic peroxide	NA2162	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Pine oil	Combustible liquid	UN1272	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pinwheels. *See* Fireworks, common										
	Pivaloyl chloride. *See* Trimethyl acetylchloride		UN2438								
	Plastic solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Plastic solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Plutonium nitrate solution	Radioactive material	NA9185	Radioactive (See Sec. 172.403)	173.393	173.396			1,2	1,2	
	Poisonous liquid, n.o.s. *or* Poison B, liquid, n.o.s.	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Poisonous liquid *or* gas, n.o.s.	Poison A	NA9035	Poison gas	None	173.328	Forbidden	Forbidden	1	5	
	Poisonous solid, n.o.s. *or* Poison B, solid, n.o.s.	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1	
	Polish, metal, stove, furniture *or* wood, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Polish, metal, stove, furniture *or* wood, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.129	1 quart	55 gallons	1,2	1	
E	Polychlorinated biphenyls (*RQ-10/4.54*)	ORM-E	UN2315	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Polymerizable material				173.21						
E	Potassium arsenate, solid (*RQ-1000/454*)	Poison B	UN1677	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Potassium arsenite, solid (*RQ-1000/454*)	Poison B	UN1678	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Potassium bifluoride solution. *See* Potassium hydrogen fluoride solution		UN1811								
	Potassium bromate	Oxidizer	UN1484	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
	Potassium chlorate (*potash chlorate*)	Oxidizer	UN1485	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
E	Potassium chromate (*RQ-1000/454*)	ORM-E	NA9142	None	None	173.510	No limit	No limit	2	2	
E	Potassium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
*E	Potassium cyanide solution (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.345	173.352	1 quart	55 gallons	1,2	1,2	Stow away from acids
	Potassium dichloro isocyanurate. See Potassium dichloro-s-triazinetrione		NA2465								
	Potassium dichloro-s-triazinetrione, *dry (containing more than 39% available chlorine)*	Oxidizer	NA2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
EA	Potassium dichromate (*RQ-1000/454*)	ORM-A	NA1464	None	173.505	173.510	No limit	No limit			
A	Potassium fluoride	ORM-B	UN1812	None	173.505	173.510	No limit	No limit			
	Potassium fluoride solution	Corrosive material	UN1812	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Potassium hydrate. *See* Potassium hydroxide		NA1814								
	Potassium hydrogen fluoride solution	Corrosive material	NA1811	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
A	Potassium hydrogen sulfate, solid	ORM-B	UN2509	None	173.505	173.510 173.800	25 pounds	100 pounds			
E	Potassium hydroxide, dry solid, flake, bead, *or* granular (*RQ-1000/454*)	Corrosive material	NA1813	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry. Do not stow with metals or alloys such as brass, copper, tin, zinc, aluminum, solder, or lead
*E	Potassium hydroxide, liquid *or* solution (*RQ-1000/454*)	Corrosive material	UN1814	Corrosive	173.244	173.249	1 quart	10 gallons	1,2	1,2	
	Potassium hypochlorite solution. *See* Hypochlorite solutions containing more than 7% available chlorine by weight		NA1791								
A	Potassium metabisulfite	ORM-B		None	173.505	173.510	No limit	No limit			
	Potassium, metal	Flammable solid	UN2257	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium, metal, liquid alloy	Flammable solid	UN1420	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium nitrate	Oxidizer	UN1486	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Potassium nitrate mixed (*fused*) with sodium nitrite	Oxidizer	UN1487	Oxidizer	173.153	173.183	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and cyanides. Stow away from foodstuffs
	Potassium nitrite	Oxidizer	UN1488	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separates from ammonium compounds and cyanides. Stow away from foodstuffs
	Potassium perchlorate	Oxidizer	UN1489	Oxidizer	173.153	173.219	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
E	Potassium permanganate (*RQ-100/45.4*)	Oxidizer	UN1490	Oxidizer	173.153	173.154 173.194	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Potassium peroxide	Oxidizer	UN1491	Oxidizer	None	173.154	Forbidden	100 pounds	1,2	1,2	Keep dry
	Potassium sulfide	Flammable solid	NA1382	Flammable solid	173.153	173.207	25 pounds	300 pounds	1,2	1,2	Separate from liquid acids, flammable gases or liquids, oxidizing materials or organic peroxides
	Pressurized product. See Compressed gas, n.o.s.										
	Primer, detonating. See Detonating primer										
	Primer. See Cannon primer, combination primer, or small-arm primer										
	Projectile, explosive. See Explosive projectile										
	Projectile, gas, nonexplosive. See Chemical ammunition, containing Poison or Irritating Material										
	Projectile, gas, smoke, or incendiary, with burster or booster with or without detonating fuze. See Explosive projectile										
	Projectile, illuminating, incendiary or smoke, with expelling charge but without bursting charge. See Fireworks, special										
	Projectile, sand-loaded, empty or solid. See 173.55										
	Propane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas		UN1978								
E	Propargite (*RQ-10/4.54*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	2		
	Propellant explosive	Class A explosive		Explosive A	None	173.64	Forbidden	Forbidden	6	5	
	Propellant explosive in water (*Smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not exempted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Propellant explosive in water, unstable, condemned, *or* deteriorated (*smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized
	Propellant explosive, liquid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,2	5	Magazine stowage authorized
	Propellant explosive, solid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,3	5	Magazine stowage authorized
	Propellant explosive (*solid, Class B, and small-arms primer*). *See* Propellant										
	Propionaldehyde	Flammable liquid	UN1275	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Propionic acid (*RQ-5000/2270*)	Corrosive material	UN1848	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
*E	Propionic acid solution (*RQ-5000/2270*)	Corrosive material	NA1848	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
E	Propionic anhydride (*RQ-5000/2270*)	Corrosive material	UN2496	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1	Keep dry
	Propyl acetate	Flammable liquid	UN1276	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl alcohol. *See* Alcohol, n.o.s.		UN1274								
	Propyl chloride	Flammable liquid	UN1278	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propyl formate	Flammable liquid	UN1281	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl mercaptan	Flammable liquid	UN2704	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	5	
	Propyl trichlorosilane	Corrosive material	UN1816	Corrosive	None	173.239	Forbidden	10 gallons	1	1	Keep dry
	Propylamine	Flammable liquid	UN1277	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propylene diamine	Flammable liquid	UN2258	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Propylene dichloride (*RQ-5000/2270*)	Flammable liquid	UN1279	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propylene imine, inhibited	Flammable liquid	UN1921	Flammable liquid	None	173.189	Forbidden	5 pints	1,2	1	
	Propylene *or* Liquefied petroleum gas. *See* Liquefied petroleum gas		UN1077								
E	Propylene oxide (*RQ-5000/2270*)	Flammable liquid	UN1280	Flammable liquid	173.118	173.119	Forbidden	1 gallon	1,3	4	
	Prussic acid. See Hydrocyanic acid (*prussic*), liquid *or* unstabilized										
E	Pyrethrins (*RQ-1000/454*)	ORM-E	NA9184	None	None	173.510	No limit	No limit	2	2	
	Pyridine	Flammable liquid	UN1282	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyrophoric liquid, *or* Pyroforic liquids, n.o.s.	Flammable liquid	UN2845	Flammable liquid	None	173.154	Forbidden	Forbidden	1	5	Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Pyrosulfuryl chloride	Corrosive material	UN1817	Corrosive	173.244	173.247	1 quart	1 quart	1	4	Keep dry. Glass carboys not permitted on passenger vessels
	Pyroxylin plastic scrap	Flammable solid	NA2006	Flammable solid	None	173.185	Forbidden	Forbidden	1	5	Shade from radiant heat
	Pyroxylin plastics, rods, sheets, rolls, or tubes	Flammable solid	NA2006	Flammable solid	173.107		50 pounds	250 pounds	1,3	1	
	Pyroxylin solution	Combustible liquid	NA2060	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solution	Flammable liquid	NA2060	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyroxylin solvent, n.o.s.	Combustible liquid	NA2060	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solvent, n.o.s.	Flammable liquid	NA2060	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyrrolidine	Flammable liquid	UN1922	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,2	1	
	Quicklime. *See* Calcium oxide		NA1910								
E	Quinoline (*RQ-1000/454*)	ORM-E	UN2656	None	None	173.510	No limit	No limit	2	2	
	Radioactive device, n.o.s.	Radioactive material	UN2909	None	173.391				1,2	1,2	
	Radioactive material, fissile, n.o.s.	Radioactive material	UN2918	Radioactive	173.403	173.420			1,2	1,2	
	Radioactive material, limited quantity, n.o.s.	Radioactive material	UN2910	None	173.391				1,2	1,2	
	Radioactive material, low specific activity *or* LSA, n.o.s.	Radioactive material	UN2912	Radioactive	173.392	173.423			1,2	1,2	
	Radioactive material, n.o.s.	Radioactive material	NA9181	Radioactive	173.403	173.425			1,2	1,2	
	Radioactive material, special form, n.o.s.	Radioactive material	NA9182	Radioactive	173.403	173.424			1,2	1,2	
	Rags, oily	Flammable solid	UN1856	Flammable solid	None	173.189	Forbidden	Forbidden	1,2	1,2	Keep dry. Separate from flammable gases, or liquids, oxidizing materials, or organic peroxides
	Rags, wet	Flammable solid	NA1325	Flammable solid	None	173.200	Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Railway Fusee. See Fusee										
	Railway torpedo. *See* Torpedo, railway										
	Range oil. *See* Fuel oil		NA1993								
	Reducing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint *or* varnish, etc., removing, reducing, *or* thinning, liquid										
	Refrigerant gas. *See* Dispersant Gas		UN1078								
	Refrigerating machine	Nonflammable gas	UN2857	Nonflammable gas	173.306		No limit	No limit	1,3	1,3	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Refrigerating machine	Flammable gas	NA1954	Flammable gas	173.306		No limit	No limit	1,3	1,3	
	Refrigerating machine	Flammable liquid	NA1993	Flammable liquid	173.130	173.306	No limit	No limit	1,2	1	
	Removing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint, *or* varnish, etc., removing, reducing, *or* thinning, liquid										
	Resin solution (*resin compound, liquid*)	Combustible liquid	NA2868	None	173.118a	None	No limit	No limit	1,2	1,2	
	Resin solution (*resin compound, liquid*)	Flammable liquid	NA1866	Flammable liquid	173.118	173.119	1 quart	55 gallons	1,2	1	
E	Resorcinol (*RQ-5000/2270*)	ORM-E	NA9166	None	None	173.510	No limit	No limit	2	2	
	Rifle grenade. See Grenade, hand or rifle, explosive										
	Rifle powder. See Propellant explosive, or Black powder										
	Road asphalt *or* tar, liquid *See* Asphalt, cut back		NA1993								
	Road asphalt *or* tar (*when heated to or above its flash point*). *See* Asphalt		NA1268								
	Road oil	Combustible liquid	NA1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Rocket ammunition with empty projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket ammunition with explosive projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with gas projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with illuminating projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with incendiary projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with inert loaded projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket ammunition with smoke projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with solid projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket body, with electric primer or electric squib. See 173.55										
	Rocket engine, liquid	Class B explosive		Explosive B	None	173.95	Forbidden	Forbidden	1,2	5	Magazine stowage authorized
	Rocket fireworks. See Fireworks, common										
	Rocket head. *See* Explosive projectile										
	Rocket motor	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
*	Rocket motor	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Roman candle. See Fireworks, common										
W	Rosin (*colophony*) *or* Resin	ORM-C		None	173.505	173.1060			1,2	1,2	
	Rough ammoniate tankage (*7% or more moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Temperature of tankage must not exceed 100 deg F
	Rough ammoniate tankage (*less than 7% moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	
W	Rubber curing compound (*solid*)	ORM-C		None	173.505	173.1065			1,2	1,2	
	Rubber scrap *or* rubber buffings	Flammable solid	NA1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	
	Rubber shoddy, regenerated rubber, *or* reclaimed	Flammable solid	NA1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	
	Rubidium metal	Flammable solid	UN1423	Flammable solid and Dangerous when wet	None	173.206	Forbidden	225 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Rubidium metal, in cartridges	Flammable solid	NA1423	Flammable solid and Dangerous when wet	173.206		1 pound	25 pounds	1,2	4	Segregation same as for flammable solid labeled Dangerous When Wet
	Rum, denatured	Flammable liquid	NA1992	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Rust preventive coating	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Safety fuse. *See* Fuse, safety		UN0105								
	Safety squib	Class C explosive	NA0206	Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Salute. See Fireworks common *or* special										
	Sand acid. *See* Hydrofluorosilicic acid		UN1778								
W	Sawdust (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1070			1,2	1,2	Keep dry
	Selenic acid, liquid	Corrosive material	UN1905	Corrosive	None	173.245	Forbidden	5 pints	1,2	1,2	
E	Selenium oxide (*RQ-1000/454*)	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
	Self-lighting cigarette	Flammable solid	NA1325	Flammable solid	173.21		Fobidden	Forbidden	1,2	1,2	Keep dry
	Self propelled vehicle. *See* Motor vehicle										
	Shaped charge, commercial. See High explosive 173.65(h)										
	Shell, fireworks. *See* Fireworks, common *or* special										
	Shellac. *See* Paint, enamel, lacquer, stain, shellac, varnish, etc.		UN1263								
	Ship, distress signal. See Fireworks, special										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Signal flare	Class C explosive	NA0191	Explosive C	None	173.103	50 pounds	200 pounds	1,2	1,2	
	Silicofluoric acid. *See* Hydrofluorosilicic acid		UN1778								
	Silicon chloride *or* silicon tetrachloride	Corrosive material	UN1818	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Silicon chrome, exothermic. *See* Exothermic ferrochrome										
	Silicon tetrafluoride	Nonflammable gas	UN1859	Nonflammable gas	173.303	173.302	Forbidden	200 pounds	1	4	Stow away from foodstuffs
	Silver-cyanide	Poison B	UN1684	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Silver nitrate (*RQ-1/.454*)	Oxidizer	UN1493	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Sisal. See Fibers		UN1906								
	Sludge acid. See Acid, sludge										
	Small arms ammunition	Class C explosive	NA0012	None	173.101		50 pounds	150 pounds	1,3	1,3	
	Small arms ammunition, irritating (*tear gas*) cartridge	Class C explosive	NA0001	Irritant	None	173.101	Forbidden	150 pounds	1,3	1,3	
	Small arms primer	Class C explosive	NA0378	Explosive C	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Smoke candle	Class C explosive	NA0197	Explosive C	None	173.103	50 pounds	200 pounds	1,3	1,3	
	Smoke generator. See Chemical ammunition, Poison A or B Material										
	Smoke grenade	Class C explosive	NA0197	Explosive C	None	173.103	50 pounds	150 pounds	1,3	1,3	
	Smoke pot	Class C explosive	NA0197	Explosive C	None	173.103	50 pounds	200 pounds	1,3	1,3	
	Smoke projectile with bursting charge. See Explosive projectile										
	Smoke projectile with expelling charge but without bursting charge. See Fireworks, special										
	Smoke signal	Class C explosive	NA0197	Explosive C	None	173.103	50 pounds	200 pounds	1,3	1,3	
	Smokeless powder for cannon or small arms. See Propellant explosive, Class A *or* B										
	Smokeless powder for small arms (*100 pounds or less*)	Flammable solid	NA1325	Flammable solid	173.93	173.197a	Forbidden	Forbidden	1,3	1,3	Segregation same as for explosives
	Soda amatol. See High explosive										
	Soda lime, solid	Corrosive material	NA1907	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
A	Sodium aluminate, solid	ORM-B	UN2812	None	173.505	173.510 173.520	25 pounds	100 pounds			
	Sodium aluminate solution	Corrosive material	UN1819	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Sodium aluminum hydride	Flammable solid	UN2835	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium amide	Flammable solid	UN1425	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium arsenate (*RQ-1000/454*)	Poison B	UN1685	Poison	173.294	173.295 173.298	50 pounds	200 pounds	1,2	1,2	
*E	Sodium arsenite (*solution*) liquid (*RQ-1000/454*)	Poison B	UN1686	Poison	173.245	173.249	1 quart	55 gallons	1,2	1,2	
	Sodium azide	Poison B	UN1687	Poison	173.294	173.375	50 pounds	100 pounds	1,2	1,2	Stow away from heavy metals, especially lead and its compounds. Stow separate from acids
E	Sodium bifluoride, solid (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245b	25 pounds	100 pounds	2	2	
E	Sodium bifluoride, solution (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245	1 quart	5 gallons	2	2	
	Sodium bisulfate, solid *or* solution. *See appropriate* Sodium hydrogen sulfate *entry*		NA1821							&S18	
	Sodium bisulfite, solid. *See* Sodium hydrogen sulfite, solid		NA2693								
	Sodium bromate	Oxidizer	UN1494	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorate (*soda chlorate*)	Oxidizer	UN1495	Oxidizer	173.153	173.153	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite	Oxidizer	UN1496	Oxidizer	None	173.160	Forbidden	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite solution (*not exceeding 42% sodium chlorite*)	Corrosive material	NA1908	Corrosive	173.244	173.203	1 quart	4 gallons	1,2	1	Glass carboys in hampers not permitted under deck
E	Sodium chromate (*RQ-1000/454*)	ORM-E	NA9145	None	None	173.510	No limit	No limit	2	2	
E	Sodium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1689	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
*E	Sodium cyanide solution (*RQ-10/4.54*)	Poison B	NA1689	Poison	173.245	173.252	1 quart	55 gallons	1,2	1,2	Stow away from acids
	Sodium dichlorosocyanurate. *See* Sodium dichloro-s-triazinetrione		UN2465								
	Sodium dichloro-s-triazinetrione (*dry, containing more than 39% available chlorine*)	Oxidizer	UN2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
EA	Sodium dichromate (*RQ-1000/454*)	ORM-A	NA1464	None	173.505	173.510	No limit	No limit			
E	Sodium dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9140	None	None	173.510	No limit	No limit	2	2	
EA	Sodium fluoride, solid (*RQ-5000/2270*)	ORM-B	UN1690	None	173.505	173.510	No limit	No limit			
*E	Sodium fluoride solution (*RQ-5000/2270*)	Corrosive material	NA1690	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Stow away from acids
	Sodium hydrate. *See* Sodium hydroxide		UN1824								

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Sodium hydride	Flammable solid	UN1427	Flammable solid and Dangerous when wet	None	173.198	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
A	Sodium hydrogen sulfate, solid	ORM-B	UN1821	None	173.505	173.510 173.800	25 pounds	100 pounds			
	Sodium hydrogen sulfate solution	Corrosive material	UN2837	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
EA	Sodium hydrogen sulfite, solid (*RQ-5000/2270*)	ORM-B	NA2693	None	173.505	173.800	25 pounds	100 pounds			
E	Sodium hydrosulfide, solid (*RQ-5000/2270*)	Flammable solid	UN2318	Flammable solid	173.153	173.154	25 pounds	100 pounds	2	2	
E	Sodium hydrosulfide, solution (*RQ-5000/2270*)	Corrosive material	UN1760	Corrosive	173.244	173.245	1 quart	5 gallons	2	2	
	Sodium hydrosulfite (*sodium dithionite*)	Flammable solid	UN1384	Flammable solid	173.153	173.204	25 pounds	100 pounds	1,2	1,2	Keep dry. Below deck stowage in metal drums only. Separate from flammable gases, liquids, oxidizing materials, or organic peroxides
E	Sodium hydroxide, dry solid, flake, bead, *or* granular (*RQ-1000/454*)	Corrosive material	UN1823	Corrosive	173.244	173.245b	25 pounds	200 pounds	1,2	1,2	Keep dry
*E	Sodium hydroxide, liquid *or* solution (*RQ-1000/454*)	Corrosive material	UN1824	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
E	*Sodium hypochlorite. See* Hypochlorite solution *or* Hypochlorite solution containing not more than 7% available chlorine										
A	Sodium metabisulfite	ORM-B		None	173.505	173.510	No limit	No limit			
E	Sodium, metal dispersion in organic solvent (*RQ-1000/454*)	Flammable solid	UN1429	Flammable solid and Dangerous when wet	None	173.230	Forbidden	10 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal liquid alloy (*RQ-1000/454*)	Flammable solid	NA1421	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal *or* metallic (*RQ-1000/454*)	Flammable solid	UN1428	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Combustible liquid	NA1289	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Flammable liquid	NA1289	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Corrosive material	NA1289	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
E	Sodium methylate, dry (*RQ-1000/454*)	Flammable solid	UN1431	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium monoxide, solid	Corrosive material	UN1825	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Sodium nitrate	Oxidizer	UN1498	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Sodium nitrate bags. See Bags, sodium nitrate, empty and unwashed										
	Sodium nitrite mixed (*fused*) with potassium nitrate	Oxidizer	UN1487	Oxidizer	173.153	173.183	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides
	Sodium nitrite mixture (*sodium nitrate, sodium nitrite, and potassium nitrate*)	Oxidizer	NA1487	Oxidizer	173.153	173.234	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides
E	Sodium nitrite (*RQ-100/45.4*)	Oxidizer	UN1500	Oxidizer	173.153	173.234	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides. Bagged material not permitted on passenger vessels
A	Sodium pentachlorophenate	ORM-A	UN2567	None	173.505	173.510	No limit	No limit			
	Sodium perchlorate	Oxidizer	UN1502	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
	Sodium permanganate	Oxidizer	UN1503	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Sodium peroxide	Oxidizer	UN1504	Oxidizer	None	173.187	Forbidden	100 pounds	1,2	1	Keep dry. Stow away from powdered metals, permanganates, combustible packing of other cargo, and combustible foodstuffs
	Sodium phenolate, solid	Corrosive material	UN2497	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
E	Sodium phosphate, dibasic (*RQ-5000/2270*)	ORM-E	UN9147	None	None	173.510	No limit	No limit	2	2	
E	Sodium phosphate, tribasic (*RQ-5000/2270*)	ORM-E	UN9148	None	None	173.510	No limit	No limit	2	2	
	Sodium phosphide	Flammable solid	UN1432	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	
	Sodium picramate, wet (*with at least 20% water*)	Flammable solid	UN1349	Flammable solid	None	173.205	Forbidden	25 pounds	1,2	5	Stow away from heavy metals, especially lead, and its compounds
	Sodium potassium alloy	Flammable solid	UN1422	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Under deck stowage must be readily accessible. Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium selenite (*RQ-1000/454*)	Poison B	NA2630	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
	Sodium sulfate, acid. *See appropriate* Sodium-hydrogen sulfate *entry*										
	Sodium sulfide, anhydrous	Flammable solid	UN1385	Flammable solid	173.153	173.207	25 pounds	300 pounds	1,2	1,2	Stow separate from liquid acids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Sparklers. See Fireworks, common										
	Spent iron mass. See Iron mass, spent		NA1376								
	Spent iron sponge. See Iron sponge, spent		UN1376								
	Spent mixed acid. See Nitrating acid, spent		NA1826								
	Spent sulfuric acid. See sulfuric acid, spent		UN1832								

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Spirits of nitroglycerin, (*1 to 10%*)	Flammable liquid	NA1204	Flammable liquid	None	173.153	Forbidden	6 quarts	1,2	5	Segregation same as for explosives
	Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight	Flammable liquid	NA1204	Flammable liquid	173.118	173.153	1 quart	6 quarts	1,2	1	
	Spirits of salt. *See* Hydrochloric acid		UN1789								
	Sporting powder. See Black powder *or* Propellant explosive, solid, Class B explosive										
	Spray starting fluid. See Engine starting fluid										
	Spreader cartridge. See Fireworks, special										
	Squib, electric or safety. See Electric squib *or* Safety squib										
	Stain. *See* Paint, enamel, lacquer, stain, shellac, varnish, etc.		UN1263								
	Stannic phosphide	Flammable solid	UN1433	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	Segregation same as for flammable solid labeled Dangerous When Wet
A	Stannous chloride, solid	ORM-B	NA1759	None	173.505	173.510	No limit	No limit			
	Starter cartridge	Class B explosive		Explosive B	None	173.92	Forbidden	200 pounds	1,3	5	
	Starter cartridge	Class C explosive	NA0276	Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Storage battery wet. See Battery, electric storage, wet										
	Straw. *See* Hay		UN1327								
	Strontium arsenite, solid	Poison B	UN1691	Poison	173.554	173.555	50 pounds	200 pounds	1,2	1,2	
	Strontium chlorate	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Strontium chlorate, wet	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
E	Strontium chromate (*RQ-1000/454*)	ORM-E	NA9149	None	None	173.510	No limit	No limit	2	2	
	Strontium nitrate	Oxidizer	UN1507	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Strontium peroxide	Oxidizer	UN1509	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
*E	Strychnine salt, solid (*RQ-10/4.54*)	Poison B	UN1692	Poison	173.554	173.555	50 pounds	200 pounds	1,2	1,2	
E	Strychnine, solid (*RQ-10/4.54*)	Poison B	UN1692	Poison	None	173.577	Forbidden	200 pounds	1,2	1,2	
	Styphnate of lead. See Initiating explosive										
E	Styrene monomer, inhibited (*RQ-1000/454*)	Flammable liquid	UN2055	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Succinic acid peroxide	Organic peroxide	UN2135	Organic peroxide	173.153	173.157 173.158	Forbidden	25 pounds	1	1	
E	Sulfur chloride (*mono and di*) (*RQ-1000/454*)	Corrosive material	UN1828	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Sulfur dioxide	Nonflammable gas	UN1079	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	200 pounds	1,2	4	Stow away from living quarters
	Sulfur flower. *See* Sulfur										
	Sulfur hexafluoride	Nonflammable gas	UN1080	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
W	Sulfur, solid	ORM-C	UN1350	None	173.505	173.1050			1,2	1,2	Protect from sparks and open flame. Stow separate from oxidizing materials. Segregation same as for flammable solids
	Sulfur trioxide, stabilized	Corrosive material	UN1829	Corrosive	173.244	173.273	Forbidden	1 gallon	1,2	1,2	Keep dry. Glass bottles not permitted under deck
E	Sulfuric acid (*For fuming sulfuric acid, see Oleum*) (*RQ-1000/454*)	Corrosive material	UN1830	Corrosive	173.244	173.272	1 quart	1 gallon	1	1	Keep dry. Under deck stowage is permitted on cargo vessels only in metal drums
E	Sulfuric acid, spent (*RQ-1000/454*)	Corrosive material	UN1832	Corrosive	None	173.248	Forbidden	1 quart	1	1	Under deck stowage is permitted on cargo vessels only in metal drums
	Sulfuric anhydride. *See* Sulfur trioxide, stabilized		UN1829								
	Sulfurous acid	Corrosive material	UN1833	Corrosive	173.244	173.245	2 gallons	2 gallons	1,2	1	Glass carboys in hampers not permitted under deck
	Sulfuryl chloride	Corrosive material	UN1834	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Sulfuryl fluoride	Nonflammable gas	UN2191	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,3	1	
	Sulphur. *See* Sulfur		UN1350								
	Supplementary charge (explosive)	Class A explosive		Explosive A	None	173.89	Forbidden	Forbidden	6	5	
EA	2,4,5-T amines, esters, *or* salts. *See* 2,4,5-Trichlorophenoxyacetic acid, amines, esters, *or* salts		NA2765								
EA	2,4,5-T. *See* 2,4,5-Trichlorophenoxyacetic acid.		NA2765								
	Tank car, containing residual phosphorus and filled with water or inert gas. See 173.190										
	Tank car, empty (*previously used for a hazardous material*), *See* 173.29										
	Tank car, empty (*previously used for a Poison A material*), *See* 172.510 and 173.29										
	Tank, portable, empty (*previously used for a hazardous material*). *See* 172.510, 173.29 and 172.514										
	Tank truck, empty. *See* 172.510, 172.514 and 173.29										
	Tankage fertilizer	Flammable solid	NA1325	Flammable solid	None	173.209	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Tankage, rough ammoniate	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Tankage. See Garbage tankage										
	Tar, liquid	Combustible liquid	UN1999	None	173.118a	None	No limit	No limit	1,2	1,2	

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§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Tar, liquid	Flammable liquid	UN1999	Flammable liquid	173.118	173.131	1 quart	10 gallons	1,2	1	
E	TDE (*1,1-dichloro-2,2-bis(para-chlorophenyl) ethane*) (*RQ-1/0.454*)	ORM-A	NA2761	None	None	173.510	50 pounds	No limit	2	2	
	Tear gas ammunition. See Chemical ammunition (containing an irritant material)										
	Tear gas candle	Irritating material	UN1700	Irritant	None	173.385	Forbidden	75 pounds	1	5	Stow away from living quarters
	Tear gas cartridge. See Small arms ammunition irritating (*tear gas*) cartridge										
	Tear gas grenade. See Grenade, tear gas										
	Tertiary alcohol. See Alcohol, n.o.s.										
	Tertiary butyl isopropyl benzene hydroperoxide	Organic peroxide	UN2091	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
AW	Tetrachloroethane	ORM-A	UN1702	None	173.505	173.620	1 quart	10 gallons	1,2	1,2	
A	Tetrachloroethylene *or* Perchloroethylene	ORM-A	UN1897	None	173.505	173.510-173.605	10 gallons	55 gallons			
	Tetraethyl dithiopyrophosphate and compressed gas mixture	Poison A	UN1703	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for non-flammable gases
	Tetraethyl dithiopyrophosphate, liquid	Poison B	UN1704	Poison	None	173.358	Forbidden	1 quart	1	5	
	Tetraethyl dithiopyrophosphate mixture, dry	Poison B	UN1704	Poison	None	173.377	Forbidden	200 pounds	1	5	
	Tetraethyl dithiopyrophosphate mixture, liquid	Poison B	UN1704	Poison	None	173.359	Forbidden	1 quart	1	5	
E	Tetraethyl lead, liquid (*including flash point for export shipment by water*) (*RQ-100/45.4*)	Poison B	NA1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flash point is 141 deg F. or less, segregation must be the same as for flammable liquids
E	Tetraethyl pyrophosphate and compressed gas mixture (*RQ-100/45.4*)	Poison A	UN1705	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for non-flammable gases
E	Tetraethyl pyrophosphate, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,2	5	
E	Tetraethyl pyrophosphate mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	5	
E	Tetraethyl pyrophosphate mixture, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,2	5	
	Tetrafluoroethylene, inhibited	Flammable gas	UN1081	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	1,2	Stow away from living quarters
	1,2,3,6-Tetrahydrobenzaldehyde	Corrosive material	UN2498	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Tetrahydrofuran	Flammable liquid	UN2056	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Tetramethylammonium hydroxide, liquid	Corrosive material	UN1835	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
A	Tetramethylmethylenediamine	ORM-A	NA9069	None	173.505	173.510	No limit	No limit			
	Tetranitromethane	Oxidizer	UN1510	Oxidizer	None	173.203	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from foodstuffs
	Tetrazene (guanyl nitrosamino guanyltetrazene). See Initiating explosive										
	Tetryl. See High explosive										
	Textile treating compound mixture, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245 173.249a	1 quart	10 gallons	1,2	1,2	
	Textile waste. *See* Cotton waste										
	Textile waste, wet	Flammable solid	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Thallium salt, solid, n.o.s.	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Thallium sulfate, solid (*RQ-1000/454*)	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Thinner for rust preventive coating. *See* Rust preventive coating		NA1142								
	Thinning compound, paint, varnish, lacquer etc. See Paint, enamel, lacquer, stain, shellac, varnish, etc.		UN1263								
	Thiocarbonyl-chloride. See Thiophosgene										
	Thioglycolic acid	Corrosive material	UN1940	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	Glass carboys in hampers not permitted under deck
	Thionyl chloride	Corrosive material	UN1836	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Thiophosgene	Poison B	UN2474	Poison	None	173.356	Forbidden	1 gallon	1	5	Shade from radiant heat
	Thiophosphoryl chloride	Corrosive material	UN1837	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
A	Thiram	ORM-A	NA2771	None	173.505	173.510	No limit	No limit			
	Thorium metal, pyrophoric	Radioactive material	NA9170	Radioactive and Flammable solid	173.226	173.226			1,2	1,2	
	Thorium nitrate	Radioactive material	NA9171	Radioactive and Oxidizer	173.392	173.393			1,2	1,2	Separate longitudinally by a complete hold or compartment from explosives
	Time fuze. See Fuze, time, non-detonating										
	Tin chloride, fuming. *See* Tin tetrachloride, anhydrous		UN1827								
	Tin perchloride. *See* Tin tetrachloride, anhydrous		NA1827								
	Tin tetrachloride, anhydrous	Corrosive material	UN1827	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Tinning flux. *See* Zinc chloride solution		NA1840								
	Titanium metal powder, dry or wet *with less than 20% water*	Flammable solid	NA2546	Flammable solid	None	173.208	Forbidden	75 pounds	1,2	5	
	Titanium metal powder, wet with 20% or more water	Flammable solid	NA1352	Flammable solid	None	173.208	Forbidden	150 pounds	1,2	5	
	Titanium sulfate solution *containing not more than 45% sulfuric acid*	Corrosive material	UN1760	Corrosive	173.244	173.297	1 quart	1 gallon	1	4	Shade from radiant heat. Keep dry

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Titanium tetrachloride	Corrosive material	UN1838	Corrosive	173.244	173.247	1 quart	10 gallons	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Toluene diisocyanate	Poison B	UN2078	Poison	173.345	173.346	Forbidden	55 gallons	1,3	1,3	Shade from radiant heat
	Toluene sulfonic acid, liquid	Corrosive material	NA2584	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Toluene (*toluol*) (*RQ-1000/454*)	Flammable liquid	UN1294	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Toluenediamine	ORM-A	NA1709	None	173.505	173.510	No limit	No limit			
	Torch. See Fireworks, common										
	Torpedo, railway	Class B explosive		Explosive B	None	173.91	Forbidden	200 pounds	1,2	1,2	Passenger vessels in metal lockers only
E	Toxaphene (*RQ-1/0.454*)	ORM-A	NA2761	None	None	173.510	25 pounds	100 pounds	2	2	
	Toy caps	Class C explosive	NA0337	Explosive C	None	173.100 173.109	50 pounds	150 pounds	1,3	1,3	
	Toy propellant device	Class C explosive	NA0336	Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
	Toy smoke device	Class C explosive	NA0337	Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
	Toy torpedo. See Fireworks, special										
E	2,4,5-TP esters. *See* 2,4,5-Trichlorophenoxypropionic acid esters		NA2765								
E	2,4,5-TP. *See* 2,4,5-Trichlorophenoxypropionic acid		NA2765								
	Tracer	Class C explosive	NA0306	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Tracer fuze	Class C explosive	NA0306	Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Tractor. *See* Motor vehicle										
	Trailer or truck body with refrigeration or heating equipment. *See* Motor vehicle										
	Treated paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
	Treated textile (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.										
E	Trichlorfon (*RQ-1000/454*)	ORM-A	NA2783	None	None	173.510	25 pounds	100 pounds	2	2	
	Trichloro-s-triazinetrione *dry, containing over 39% available chlorine*	Oxidizer	UN2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,3	1,3	Keep dry
	(mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry (*containing over 39% available chlorine*)	Oxidizer	NA2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,3	1,3	Keep dry
	Trichloroacetic acid, solid	Corrosive material	UN1839	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1	
	Trichloroacetic acid solution	Corrosive material	UN2564	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
EA	Trichloroethylene (*RQ-1000/454*)	ORM-A	UN1710	None	173.505	173.510 173.605	10 gallons	55 gallons			
E	Trichlorophenol (*RQ-10/4.54*)	ORM-A	NA2020	None	None	173.510	100 pounds	No limit	2	2	
EA	2,4,5-Trichlorophenoxyacetic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	None	173.510	50 pounds	No limit	2	2	
EA	2,4,5-Trichlorophenoxyacetic acid amines, esters, or salts (*RQ-100/45.4*)	ORM-A	NA2765	None	None	173.510	50 pounds	No limit	2	2	
EA	2,4,5-Trichlorophenoxypropionic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	None	173.510	50 pounds	No limit	2	2	
EA	2,4,5-Trichlorophenoxypropionic acid esters (*RQ-100/45.4*)	ORM-A	NA2765	None	None	173.510	50 pounds	No limit	2	2	
	Trichlorosilane	Flammable liquid	UN1295	Flammable liquid	None	173.156	Forbidden	10 gallons	1	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Trick matches	Class C explosive	NA0337	Explosive C	None	173.111	Forbidden	Forbidden	1,3	1,3	
	Trick noise maker, explosive	Class C explosive	NA0337	Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
E	Triethanolamine dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9151	None	None	173.510	No limit	No limit	2	2	
E	Triethylamine (*RQ-5000/2270*)	Flammable liquid	UN1296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Trifluorochlorethylene	Flammable gas	UN1082	Flammable gas	173.306	173.304 173.314	Forbidden	10 gallons	1,2	1	
	Trimethyl acetyl chloride	Corrosive material	UN2438	Corrosive	173.244	173.247	1 quart	1 quart	1,2	1,2	
E	Trimethylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1083	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
*E	Trimethylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	NA1297	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	Stow away from mercury and mercury compounds
	Trimethylchlorosilane	Flammable liquid	UN1298	Flammable liquid	None	173.155	Forbidden	10 gallons	1,2	1	
	Trinitrobenzene, dry. See High explosive										
	Trinitrobenzene, wet *containing at least 10% water*	Flammable solid	NA1354	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Trinitrobenzoic acid, dry. See High explosive										
	Trinitrobenzoic acid, wet, *containing at least 10% water*	Flammable solid	NA1355	Flammable solid	None	173.192 173.193	1 pound	25 pounds	1	5	Stow away from heavy metals and their compounds
	Trinitrobenzoic acid, wet, containing at least 10% water, over 25 pounds in one outside packaging. See High explosives										
	Trinitroresorcinol. See High explosive										
	Trinitrotoluene, dry. See High explosive										
	Trinitrotoluene, wet *containing at least 10% water*	Flammable solid	NA1356	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Tris-(1-aziridinyl) phosphine oxide	Corrosive material	UN2501	Corrosive	173.244	173.299a	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
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	Tungsten hexafluoride	Corrosive material	UN2196	Corrosive	None	173.284	Forbidden	110 pounds	1	5	Segregation same as for nonflammable gases.
	Turpentine	Combustible liquid	UN1299	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine	Flammable liquid	UN1299	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Turpentine substitute	Combustible liquid	UN1300	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine substitute	Flammable liquid	UN1300	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
W	Twisted jute packing (*rope*) (*treated or untreated*). *See* Oakum										
	Uranium hexafluoride, fissile (containing more than 0.7% U-235)	Radioactive material	NA9173	Radioactive and Corrosive	173.393	173.398			1,2	1,2	
	Uranium hexafluoride, low specific activity (*containing 0.7% or less U-235*)	Radioactive material	NA9174	Radioactive and Corrosive	173.392	173.393			1,2	1,2	
	Uranium metal, pyrophoric	Radioactive material	NA9175	Radioactive and Flammable solid	173.392	173.393 173.396			1,2	1,2	
E	Uranyl acetate (*RQ-5000/2270*)	Radioactive material	NA9180	Radioactive material	173.391	173.395	Not applicable	Not applicable	2	2	
	Uranyl nitrate hexahydrate solution	Radioactive material	NA9178	Radioactive and Corrosive	173.392	173.393 173.395 173.396			1,2	1,2	
E	Uranyl nitrate, solid (*RQ-5000/2270*)	Radioactive material	NA9177	Radioactive and Oxidizer	173.392	173.393 173.396			1,2	1,2	Separate longitudinally by an intervening hold or compartment from explosives
	Urea nitrate, dry. See High explosive										
	Urea nitrate, wet *with 10% or more water*	Flammable solid	NA1357	Flammable solid	None	173.192 173.193	1 pound	25 pounds	1,2	1,2	
	Urea nitrate, wet with 10% or more water, over 25 pounds in one outside packaging. See High explosive										
	Urea peroxide	Organic peroxide	NA1511	Organic peroxide	173.153	173.227	2 pounds	25 pounds	1	4	Keep dry. Shade from radiant heat
	Valeric acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Valeryl chloride	Corrosive material	UN2502	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Vanadium oxytrichloride	Corrosive material	UN2443	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
	Vanadium oxytrichloride and titanium tetrachloride mixture	Corrosive material	NA2444	Corrosive	None	173.245 173.245a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadium pentoxide (*RQ-1000/454*)	Poison B	NA2862	Poison	173.384	173.365	50 pounds	200 pounds	2	2	
	Vanadium tetrachloride	Corrosive material	UN2444	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadyl sulfate (*RQ-1000/454*)	ORM-E	NA9152	None	None	173.510	No limit	No limit	2	2	
	Varnish drier. See Paint drier, liquid		NA1168								
	Varnish remover or reducer. See Compound, lacquer, paint or varnish removing, reducing, or thinning liquid		NA1142								
	Varnish. *See* Paint, enamel, lacquer, stain, shellac, varnish, etc.		NA1263								
	Varnish thinning compound. See Compound, lacquer, paint, or varnish removing, reducing, or thinning liquid		NA1263								
	Very signal cartridge	Class C explosive	NA0312	Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
E	Vinyl acetate (*RQ-1000/454*)	Flammable liquid	UN1301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Vinyl chloride	Flammable gas	UN1086	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow away from living quarters
	Vinyl ethyl ether, inhibited	Flammable liquid	UN1302	Flammable liquid	None	173.119	Forbidden	1 gallon	1,3	5	
	Vinyl fluoride, inhibited	Flammable gas	UN1860	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
	Vinyl isobutyl ether	Flammable liquid	UN1304	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Vinyl methyl ether	Flammable gas	UN1087	Flammable gas	173.306	173.304 173.314	Forbidden	20 pounds	1,2	1	Stow away from living quarters
	Vinyl trichlorosilane	Flammable liquid	UN1305	Flammable liquid	None	173.135	Forbidden	10 gallons	1,2	1	
E	Vinylidene chloride, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1303	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Vitriol, oil of. *See* Sulfuric acid		NA1830								
	War head. See Explosive projectile										
	Waste paper, wet	Flammable solid	NA1325	Flammable solid	None	173.186	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste textile, wet	Flammable solid	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste wool, wet	Flammable solid	UN1387	Flammable solid	None	173.213	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Water pump system tank charged with compressed air or nitrogen	Nonflammable gas	NA1956	None	173.306		Forbidden	Forbidden	1,2	1,2	
	Water reactive solid, n.o.s.	Flammable solid	UN2813	Flammable solid and Dangerous when wet	173.153	173.154	Forbidden	25 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
*/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	ID Number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Water treatment compounds, liquid	Corrosive material	NA1760	Corrosive	173.244	173.149	1 quart	10 gallons	1	1	
	Wax, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Wet hair. See Hair, wet		NA1325								
	Wet textile waste. *See* Waste textile, wet		UN1857								
	White acid (*ammonium bifluoride and hydrochloric acid mixture*)	Corrosive material	NA1760	Corrosive	173.244	173.264	1 quart	1 gallon	1	1	
	Wood filler, liquid. *See* Paint, varnish, lacquer, stain, shellac, enamel, etc.		NA1263								
	Wood shavings (*when dry, clean and free from oil*). *See* Sawdust										
	Wool waste. *See* Cotton waste										
	Wool waste, wet. See Waste wool, wet		UN1387								
	X-ray film. *See* Film										
	Xenon	Nonflammable gas	UN2036	Nonflammable gas	173.306	173.302	150 pounds	500 pounds	1,2	1,2	
E	Xylene (*xylol*) (*RQ-1000/454*)	Flammable liquid	UN1307	Flammable liquid	173.118	173.119	1 quart	1 quart	1,2	1,2	
E	Xylenol (*RQ-1000/454*)	ORM-E	UN2261	None	None	173.510	No limit	No limit	2	2	
	Xylyl bromide	Irritating material	UN1701	Irritant	None	173.383	Forbidden	75 pounds	1	5	Stow away from living quarters
A	Yeast, active, *in liquid or pressed form*	ORM-C		None	None	173.1065	No limit	No limit			
E	Zinc acetate (*RQ-1000/454*)	ORM-E	NA9153	None	None	173.510	No limit	No limit	2	2	
E	Zinc ammonium chloride (*RQ-5000/2270*)	ORM-E	NA9154	None	None	173.510	No limit	No limit	2	2	
	Zinc ammonium nitrite	Oxidizer	UN1512	Oxidizer	None	173.208	25 pounds	100 pounds	1,2	5	This material may be forbidden in water transportation by certain countries
	Zinc arsenate	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Zinc arsenate, solid	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Zinc borate (*RQ-1000/454*)	ORM-E	NA9155	None	None	173.510	No limit	No limit	2	2	
E	Zinc bromide (*RQ-5000/2270*)	ORM-E	NA9156	None	None	173.510	No limit	No limit	2	2	
E	Zinc carbonate (*RQ-1000/454*)	ORM-E	NA9157	None	None	173.510	No limit	No limit	2	2	
	Zinc chlorate	Oxidizer	UN1513	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and away from powdered metals
E	Zinc chloride, solid (*RQ-5000/2270*)	ORM-E	NA2331	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc chloride solution (*RQ-5000/2270*)	Corrosive material	UN1840	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
E	Zinc cyanide (*RQ-10/4.54*)	Poison B	UN1713	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Zinc ethyl. See Pyrophoric liquids, n.o.s.		NA1366								
E	Zinc fluoride (*RQ-1000/454*)	ORM-E	NA9158	None	None	173.510	No limit	No limit	2	2	
E	Zinc formate (*RQ-1000/454*)	ORM-E	NA9159	None	None	173.510	No limit	No limit	2	2	
E	Zinc hydrosulfite (*RQ-1000/454*)	Flammable solid	NA1931	Flammable solid	173.153	173.154	25 pounds	100 pounds	2	2	
	Zinc muriate solution. See Zinc chloride solution		NA1840								
E	Zinc nitrate (*RQ-5000/2270*)	Oxidizer	UN1514	Oxidizer	173.153	173.182	25 pounds	100 pounds	2	2	
	Zinc permanganate	Oxidizer	UN1515	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Zinc peroxide	Oxidizer	UN1516	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
E	Zinc phenolsulfonate (*RQ-5000/2270*)	ORM-E	NA9160	None	None	173.510	No limit	No limit	2	2	
E	Zinc phosphide (*RQ-1000/454*)	Flammable solid	UN1714	Flammable solid and Poison	173.153	173.154	Forbidden	25 pounds	2	2	Keep away from oxidizing agents.
E	Zinc silicofluoride (*RQ-5000/2270*)	ORM-E	UN2855	None	None	173.510	No limit	No limit	2	2	
E	Zinc sulfate (*RQ-1000/454*)	ORM-E	NA9161	None	None	173.510	No limit	No limit	2	2	
	Zirconium hydride	Flammable solid	UN1437	Flammable solid and Dangerous when wet	None	173.206	Forbidden	150 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Zirconium metal, dry, *chemically produced, finer than 20 mesh particle size*	Flammable solid	NA2008	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium metal, dry, *mechanically produced, finer than 270 mesh particle size*	Flammable solid	NA2009	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium, metal, liquid, suspensions	Flammable liquid	NA1308	Flammable liquid	None	173.149	Forbidden	5 gallons	1	5	
	Zirconium metal, wet, *chemically produced, finer than 20 mesh particle size*	Flammable solid	NA1358	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
	Zirconium metal, wet, *mechanically produced, finer than 270 mesh particle size*	Flammable solid	NA1358	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
E	Zirconium nitrate (*RQ-5000/2270*)	Oxidizer	UN2728	Oxidizer	173.153	173.154	25 pounds	100 pounds	2	2	
	Zirconium picramate, wet *with at least 20% of water*	Flammable solid	UN1517	Flammable solid	None	173.216	Forbidden	25 pounds	1	1	Stow away from heavy metals and their salts
E	Zirconium potassium fluoride (*RQ-5000/2270*)	ORM-E	NA9162	None	None	173.510	No limit	No limit	2	2	
	Zirconium scrap (*borings, clippings, shavings, sheets, or turnings*)	Flammable-solid	UN1932	Flammable solid	173.153	173.229	Forbidden	Forbidden	1	4	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
EA	Zirconium sulfate (*RQ-5000/2270*)	ORM-B	NA9163	None	None	173.510	100 pounds	No limit	2	2	
E	Zirconium tetrachloride, solid (*RQ-5000/2270*)	Corrosive material	UN2503	Corrosive	173.244	173.243	25 pounds	100 pounds	1,2	1,2	

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3. In § 172.202 paragraph (a)(3) would be added and paragraph (b) would be revised to read as follows:

§ 172.202 Description of hazardous material on shipping papers.

(a) * * *

(3) The identification number assigned to the material in § 172.101.

* * * * *

(b) The basic description specified in paragraphs (a)(1), (2) and (3) of this section must be shown in sequence except that the technical name of the material may be entered between the proper shipping name and the class. For example: "Gasoline, Flammable liquid UN 1203;" "Flammable solid n.o.s. UN 1325;" or "Corrosive liquid n.o.s. (Caprylyl chloride) Corrosive material UN 1760."

* * * * *

4. Section 172.300 would be revised to read as follows:

§ 172.300 General marking requirements.

Except as provided by this subchapter, each person who offers a package containing a hazardous material for transportation shall mark the package with the proper shipping name and identification number assigned to the material in § 172.101. However, when it has been determined by the shipper that a package has been previously marked as required for the material it contains, it need not be remarked. This section does not apply to portable tanks, cargo tanks and tank cars.

5. In § 172.326 paragraphs (a) and (b) would be revised to read as follows:

§ 172.326 Portable tanks.

(a) No person may offer for transportation or transport a portable tank containing a hazardous material unless it is marked legibly—

(1) On each side and each end with the identification number specified for the material in § 172.101 on a panel as specified by § 172.332, and

(2) On each side with the proper shipping name of the material in lettering no less than two inches (50.8mm.) in height.

(b) A portable tank marked with the identification number or name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material in the portable tank, whichever is appropriate.

* * * * *

6. In § 172.328 paragraphs (a), and (b) and (e) would be revised to read as follows:

§ 172.328 Cargo tanks.

(a) No person may offer for transportation or transport a hazardous material in a cargo tank unless the cargo tank is marked on each side and each end with the identification number specified for the material in § 172.101 on a panel as specified in § 172.332.

(1) A person who offers a motor carrier a hazardous material for transportation in a cargo tank shall provide to the motor carrier the required identification numbers on panels prior to or at the time the material is offered for transportation unless the cargo tank is already marked with identification numbers as required by this subpart.

(2) A person who offers a cargo tank containing a hazardous material for transportation, shall affix the required identification numbers on panels prior to or at the time the material is offered for transportation unless the cargo tank is already marked with identification numbers as required by this subpart.

(3) As an alternative, the marking required by paragraph (a) of this section on the front of a cargo tank may be on the front of a truck-tractor instead of or in addition to the marking on the front of the cargo tank to which the truck-tractor is attached.

(4) Identification numbers are not required on nurse tanks meeting the provisions of § 173.315(m) of this subchapter.

(b) Except as specified in paragraph (a) of this section, when the name of a material or other marking is required by this subchapter to be marked on a cargo tank, it must be legibly displayed in lettering or numbers no less than two inches (50.8mm.) in height.

* * * * *

(e) A cargo tank marked with the identification number or name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material the cargo tank contains, whichever is appropriate.

7 Section 172.330 would be revised to read as follows:

§ 172.330 Tank cars.

(a) No person may offer for transportation or transport a hazardous material in a tank car unless the tank car is marked on each side and each end with the identification number specified for the material in § 172.101 on a panel as specified in § 172.322. Also, when required to be marked by Part 173 or 179 of this subchapter, each tank car and tank car tank (DOT 106 or 110) used to transport a hazardous material must be marked as specified in this subpart with the—

(1) Proper shipping name, or

(2) Common name authorized in this subchapter for the material such as "Refrigerant Gas."

(b) The letters in the marking of a proper shipping or common name must be 4 inches (101.6mm.) or more in height with at least a ⅝ inch (15.9mm.) stroke. The separation between each letter must be at least ¾ inch (19.0mm.).

(c) The marked proper shipping or common name must be—

(1) Affixed to both sides of the tank car tank, and

(2) Except for tank cars transporting DOT 106 and 110 multi-unit tank car tanks, readily visible when viewed from each side of the tank car.

(d) A tank car and a tank car marked with the identification number or name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material the tank car or tank car tank contains, whichever is appropriate.

(e) For a hazardous material in a DOT 106 or 110 tank car tank,

(1) The identification number specified for the material in § 172.101 must be marked on one panel as specified in § 172.332 that is affixed to the side of the tank,

(2) A motor vehicle or rail car used to transport the tank car tank must be marked on each side and each end with the identification number specified for the material in § 172.101 on a panel as specified in § 172.332, and

(3) If the tank car tank contains chlorine, marking of the name "Chlorine" is not required when the CHLORINE label is used as provided in § 172.405(b).

8. Section 172.332 would be added to read as follows:

§ 172.332 Identification number markings and orange panel specifications.

(a) The orange panel for portable tanks, cargo tanks and tank cars shall be 6¼ inches (16 cm.) high by 16¼ inches (41.5 cm.) wide with a 7/16 of an inch (12 mm.) black outer boarder. An identification number shall be displayed in 4-inch (100 mm.) black Helvetica Medium numerals. Measurements may vary from those specified plus or minus 0.1 of an inch (3 mm.).

(b) The orange display panel may be made of any durable material prescribed for placards in § 172.519, and shall be of the orange color specified for labels or placards in Appendix A to this Part.

(c) The name of a material respresented by an identification

number may be shown in the upper left border of the orange panel in letters not more than 18 points (¼-inch) high.

(d) Except for size and color, the orange panel and identification numbers are illustrated as follows:

(e) The identification number on an orange panel shall be displayed in proximity to any placard required by §172.504.

(49 U.S.C. 1803, 1804; 1808; 49 CFR 1.53, App. A to Part 1, and paragraph (a)(4) of App. A, Part 106.)

Note. The Materials Transportation Bureau has determined that this document does not contain a major proposal requiring preparation of an economic statement under Executive Order 12044 and DOT implementing procedures (43 FR 9582) nor an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.).

A regulatory evaluation is available in the public docket.

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Alan I. Roberts,

Associate Director for Hazardous Materials Regulation Materials Transportation Bureau.

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