



CHEMICAL MANUFACTURERS ASSOCIATION

September 29, 1992

Dr. Charles Ke
Chief, Science Group
Office of Hazardous Materials Technology
U.S. Department of Transportation
400 Seventh St., S.W.
Washington, D.C. 20590-0001

Dear Dr. Ke:

Thank you for meeting with representatives of the CMA Vinyl Chloride Panel on August 12, 1992, to discuss the Panel's request to allow the vinyl chloride industry to use either "vinyl chloride" or "vinyl chloride, inhibited," as appropriate, on the shipping label. The basis for the Panel's request was described in my January 16, 1992, letter to Mr. Edward Mazzullo of the DOT Office of Hazardous Materials Standards. A copy of the January 16, 1992, letter is enclosed for your ready reference (Attachment 1). At our August 12, 1992 meeting, you requested additional information on VCM shipping practices in Europe, Asia and the Pacific Rim. I contacted our Panel member companies, and now have received the requested information. This information is described below.

VCM domestically and in foreign countries is shipped mainly by railcars, pipelines or marine vessels. Most domestic VCM shipments by railcars and pipelines are uninhibited, i.e., no chemical inhibitor is added. Export marine shipments are either chemically inhibited or uninhibited. There are three classes of vessels that carry VCM. These are fully refrigerated, semi-refrigerated, and pressure vessels. The fully refrigerated ships operate at temperatures of -15°C with relief valve settings of 2 to 3 psig. Semi-refrigerated ships can load VCM at ambient temperatures but normal operation is also to cool the VCM to the customer's requirements or to fully refrigerated conditions. The tanks are rated for 45 to 100 psig. Pressure vessels operate at ambient temperature and have tank ratings of 150 to 200 psig. Auto polymerization in the refrigerated or semi-refrigerated class of vessels is unlikely due to the low product temperatures maintained. Pressure vessels are very similar to tank cars and carry the same low risk of auto polymerization as tank cars.

Vessel shipments of VCM from the US do not require an inhibitor as long as the tanks are purged with inert gas until the oxygen content is below 0.1%, and the tanks are carried under positive pressure. The attached IMO regulations govern the VCM shipping practices (Attachment 2). US Coast Guard regulations are not clear, but the Coast Guard is aware of both inhibited and uninhibited VCM shipments from the US.

Dr. Charles Ke
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While the risk of polymerization is remote and the IMO regulations do not specifically require VCM to be inhibited, the actual practice is mixed. Most shipping contracts call for "properly inhibited" VCM. The term "properly inhibited" has never been defined. U.S. shipments to the Far East and Europe are almost always inhibited. Most shipments to Mexico are not inhibited. A typical voyage to the Far East from the US is 30 days while the time to Mexico is 3 to 5 days.

In Europe, when Far East shipments are made in large ships, they are inhibited with Hydroquinone. Generally, the ships have other products in the same hold previous to VCM and have too high an oxygen concentration, probably greater than 1000 ppm oxygen by volume. It is too expensive to purge the large ship tanks to a lower specification suitable to prevent polymerization, and, therefore, the monomer is inhibited by chemical addition. The distance has some bearing whether to inhibit VCM, but the decision to inhibit or not probably is made based on cost to lower the oxygen content of huge ship tanks to below 0.1%.

Each country's handling of vinyl chloride monomer is different. One place in Europe does not inhibit while in storage and during transportation to the polymer plants. This is due to the dedicated service of pipelines, etc. Some companies in Japan inhibit monomer going into storage and to polymer plants and small shuttle ships, where another Japanese company does not inhibit monomer handled on land. The Koreans do not inhibit monomer domestically. The Saudis do inhibit their VCM storages.

As we discussed over the phone about two weeks ago, the domestic VCM name plate capacity is about 12 billion pounds, and about 6 billion pounds are shipped internally by railcars. The two other methods of transportation of vinyl chloride are by pipelines or marine vessel.

In conclusion, the CMA Vinyl Chloride Panel requests that the U.S. DOT add "Vinyl Chloride" to the 49 CFR 172.102 table as a separate shipping name for those shipments that do not contain a chemical inhibitor.

If you have any questions concerning the information in this letter, please call me at (202) 887-1192.

Sincerely,



Hasmukh C. Shah, Ph.D.
Manager, Vinyl Chloride Panel

Enclosure

cc: George Cushmac
Vinyl Chloride Panel

CMA 111214



CHEMICAL MANUFACTURERS ASSOCIATION

January 16, 1992

Mr. Edward Mazzullo
DHM-10
Director, Office of Hazardous Materials Standards
U.S. Department of Transportation
400 7th St, SW
Washington, D.C. 20590-0001

Dear Mr. Mazzullo:

The Chemical Manufacturers Association Vinyl Chloride Panel hereby requests that the Department of Transportation reconsider the shipping label name for vinyl chloride containers. The DOT Hazardous Materials Regulations (HMR: 49 CFR Parts 171-180) that have been converted to United Nations Standards have changed the proper shipping name of vinyl chloride from "Vinyl Chloride" to "Vinyl Chloride, inhibited." This change has concerned vinyl chloride producers because an inhibitor is not added to the monomer for purposes of domestic shipments and on some international shipments. Industry recognizes inhibiting vinyl chloride as the addition of a chemical, such as hydroquinone, that would prevent self polymerization. Removing oxygen to low parts per million quantities or cooling the liquid monomer is considered an inhibiting step by Dr. Charles Ke of DOT. These processes are understood to be a requirement for storing and shipping vinyl chloride and not an inhibiting step for the monomer as Dr. Ke has suggested. Labeling containers such as tank cars with the inhibitor statement will create confusion for all handlers of this product.

There has not been a problem with vinyl chloride self polymerizing while in a shipping container and in route to shipping locations. For this reason, most producers and shippers do not inhibit vinyl chloride for domestic tank car, truck, and water transportation. The chemical inhibitor would interfere with the conversion of vinyl chloride to a polymer.

The addition of "Inhibited" as part of the vinyl chloride proper shipping name would be an incorrect marking of most packages shipped today. Markings on all bulk transportation equipment, non-bulk packages and shipping documents would require the addition of the "Inhibited" description.

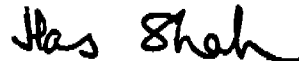
The Vinyl Chloride Panel, therefore, petitions for reconsideration to add "Vinyl Chloride" as a separate proper shipping name for those shipments that do not contain a chemical inhibitor. Placing a symbol

Mr. Edward Mazzullo
January 16, 1992
Page 2

in column 1 of 49 CFR 172.102 table representing transportation in North America is recommended. This would not change vinyl chloride's hazard class or the response to hazardous materials incidents by emergency responders.

If you have any questions or need additional information, please contact me at (202) 887-1192.

Sincerely,



Hasnukh C. Shah, Ph.D.
Manager, Vinyl Chloride Panel

cc: Vinyl Chloride Panel

CMA 111216

Sea

As stated in the General Introduction to this Code in respect of class 2, it is difficult to reconcile the various main systems of regulation; definitions in this class are, therefore, of a general nature to cover all such systems. Moreover, since it has not been found possible to reconcile the two main systems of regulation in respect of differentiation between a liquefied gas exerting a low pressure at a certain temperature and a flammable liquid, this criterion has been omitted; both methods of differentiation are recognized.

2 This class comprises:

- 1 Permanent gases**
Gases which cannot be liquefied at ambient temperatures;
- 2 Liquefied gases**
Gases which can become liquid under pressure at ambient temperatures;
- 3 Dissolved gases**
Gases dissolved under pressure in a solvent, which may be absorbed in a porous material;
- 4 Deeply refrigerated permanent gases, e.g. liquid air, oxygen.**

3 Gases are normally carried under pressure varying from high pressure in the case of compressed permanent gases to low pressure in the case of deeply refrigerated gases.

4 According to their chemical properties or physiological effects, which may vary widely, gases may be:

flammable
non-flammable
poisonous
supporters of combustion
corrosive

or may possess two or more of these properties simultaneously.

4 1 Some gases are chemically and physiologically inert. Such gases as well as other gases, normally accepted as non toxic, will nevertheless be suffocating in high concentrations. Additionally, a number of gases have been identified as harmful to the marine environment (MARINE POLLUTANT), and this has been indicated in the individual schedules, where appropriate.

4 2 Many gases of this class have narcotic effects which may occur at comparatively low concentrations, or may evolve highly poisonous gases when involved in a fire.

4 3 All gases which are heavier than air will present a potential danger if allowed to accumulate in the bottom of cargo spaces.

4 4 Identification of gases according to hazard

4 4 1 For storage and segregation purposes, class 2 is subdivided further according to the hazards presented by gases during transportation, namely:

INDG CODE PAGE 2002
Ann. 75 89

- .1 Class 2.1 - Flammable gases;
- .2 Class 2.2 - Non-Flammable gases;
- .3 Class 2.3 - Poisonous gases.

1.4.4.2

In order to more accurately convey the hazards presented by gases, the information required by regulation 5 of part A of chapter VII of the International Convention for the Safety of Life at Sea 1974, as amended, should be supplemented to include an additional description, as necessary, of these hazards, i.e.:

- .1 Flammable gas (2.1);
- .2 Non-flammable gas (2.2);
- .3 Poisonous gas (2.3).

1. 2.

The characteristic properties, packing and storage provisions are given in the individual schedule, for each gas. Properties of each gas include an indication of its mass in relation to air. The figures in brackets give the density relative to air.

Games are described as:

- .1 "lighter than air" when the vapour density is down to half that of air;
- .2 "much lighter than air" when the vapour density is less than half that of air;
- .3 "heavier than air" when the density is up to twice that of air;
- .4 "much heavier than air" when the vapour density is more than twice that of air.

1.6

Some gases in this class, under conditions pertinent to transport, are liable to polymerize spontaneously with themselves or as in cause dangerous liberation of heat or gas, possibly resulting in rupture of the receptacle. These gaseous should not be transported unless they are properly stabilized; this is followed by the proper affixing of marks.

1.7

Redigendum

Because of the wide variety of trade names employed in respect of these gases (e.g. Freon, Arcton, Isocron, Frigen, etc.), the proper shipping name should normally be used for positive identification in view of the widely accepted use of the letter "W" followed by an identifying number for these gases. The appropriate references have been quoted as a guide on the schedules.

2. PACKING

2.1

This class includes gases carried in the compressed state, liquefied state or dissolved under pressure which are under pressure and require special containment systems (pressure vessels).

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April 25-69

ATTACHMENT 2

CMA 111217

alloys, and zinc,

and other acetylide-forming

loys,

ized steel, 2

her, 2

with greater than one per cent

ndent tanks only.

pendent tanks type C and the
sure of the cargo tank should
or vapour discharge unloading

7.2.4(b) should be used.

which readily form dangerous
lowed to form stagnant pockets
ther by.

in 7.2.4(b) with the condenser

ned system described in 7.2.4(a)
ect system described in 7.2.4(b)
rge tank, and designing the con-
es in which liquid could collect
ossible inhibited liquid should
a.

of such products with a ballast
a be removed prior to the ballast
etween such consecutive cargoes
only drained and purged before
carried out using either inert gas
stible. Practical steps should be
do not accumulate in the ship's

all butt welded joints in cargo
ed.

Sea

Chapter XVII

17.7 Bow or stern loading and discharge lines

Bow or stern loading and discharging lines should not be led past accommodation, service or control station spaces on Type IG ships. Bow and stern loading and discharging lines installed on Type IIG/IIPG ships should not be used for the transfer of toxic cargoes, unless specifically approved by the Administration.

17.8 Exclusion of air from vapour spaces

Air should be removed from the cargo tanks and associated piping before loading and then subsequently excluded by:

- introducing inert gas to maintain a positive pressure. Storage or production capacity of the inert gas should be sufficient to meet normal operating requirements and relief valve leakage. The oxygen content of inert gas should at no time be greater than 0.2 per cent by volume; or
- control of cargo temperature such that a positive pressure is maintained at all times.

17.9 Moisture control

For gases which are non-flammable and may become corrosive or react dangerously with water, moisture control is required to ensure that cargo tanks are dry before loading and that during discharge, dry air or cargo vapour is introduced to prevent negative pressures. For the purposes of this paragraph, dry air is air which has a dewpoint of -45°C or below at atmospheric pressure.

17.10 Inhibition

Care should be taken to ensure that the cargo is sufficiently inhibited to prevent polymerization at all times during the voyage. Ships should be provided with a certificate from the manufacturer stating:

- name and amount of inhibitor added;
- date inhibitor was added and the normally expected duration of its effectiveness;
- any temperature limitations affecting the inhibitor;
- the action to be taken should the length of the voyage exceed the effective lifetime of the inhibitors.

17.11 Permanently installed toxic gas detectors

17.11.1 Gas sampling lines should not be led into or through gas-safe spaces. Alarms referred to in 13.6.7 should be activated when the vapour concentration reaches the threshold limiting value.

17.11.2 The alternative of using portable equipment in accordance with 13.6.9 should not be permitted.

1110

Sea

with a chlorine absorbing plant
o piping system and the cargo
ould be capable of neutralizing
total cargo capacity at a reason-

go tanks, vapours should not be

d be provided capable of moni-
rs of at least 1 ppm by volume,
ted;

go hold spaces;

y relief valves;

absorbing plant;

ion systems for the accommoda-
machinery spaces;

nd, in the middle and at the aft
Only required to be used during
ing operations.)⁽⁴⁾

ould be provided with audible
int of 5 ppm.

itted with a high pressure alarm
sure equal to 10.5 kp/cm².

ven in 17.2 the following require-

s by 17.2.4 should be easily and
open deck and accommodation
being rapidly closed gas-tight.
e deck and the remainder of the
y means of an air-lock. The space
accommodate the entire crew of
n a source of uncontaminated air
n four hours. One of the decon-
by 17.2.2 should be located
&

sary equipment for filling the air-

equipment should be carried in
paragraph (i).

4(b) do not apply when it is

(iii) The chlorine content of the gas in the vapour space of the
cargo tank after loading should be greater than 80 per cent
by volume.

17.12.6 Vinyl chloride

In case polymerization of vinyl chloride is prevented by addition of an
inhibitor, 17.10 is applicable. In case no or insufficient inhibitor has been
added, any inert gas used for the purpose of 17.8 should contain not more
oxygen than 0.1 per cent. Before loading is started, inert gas samples from the
tanks and piping should be analysed. When vinyl chloride is carried, a positive
pressure should always be maintained in the tanks, also during ballast voyages
between successive cargoes.

17.12.7 Diethyl ether/vinyl ethyl ether

- (a) The cargo should be discharged only by deepwell pumps or by
hydraulically operated submerged pumps. These pumps should be
of a type designed to avoid liquid pressure against the shaft gland.
- (b) Inert gas displacement may be used for discharging cargo from
independent tanks type C provided the cargo system is designed
for the expected pressure.

17.12.8 Propylene oxide and mixtures of ethylene oxide/propylene oxide with ethylene oxide content not more than 30 per cent by weight⁽⁴⁾

- (a) Products transported under the provisions of this section should
be acetylene free.
- (b) For the purposes of this section the term "Independent" means
that a piping system or venting system, for example, is in no way
connected to another system and that there are no means available
for the potential connexion to other systems.
- (c) (i) Unless cargo tanks are properly cleaned, these products
should not be carried in tanks which have contained as one
of the three previous cargoes any product known to catalyse
polymerization, such as:
 - ammonia, anhydrous and ammonia solutions;
 - amines and amine solutions;
 - oxidizing substances (e.g. chlorine).
- (ii) Before loading, tanks should be thoroughly and effectively
cleaned to remove all traces of previous cargoes from tanks
and associated pipework, except where the immediate prior
cargo has been propylene oxide or ethylene oxide/propylene
oxide mixtures. Particular care should be taken in the case of
ammonia in tanks made of steel other than stainless steel.
- (iii) In all cases, the effectiveness of cleaning procedures for tanks
and associated pipework should be checked by suitable testing
or inspection to ascertain that no traces of acidic or alkaline
materials remain that might create a hazardous situation in
the presence of these products.

ADR Rego(?) and RID will
be similar. So applicable to

CLASS 2 Road and Rail.
GASES: COMPRESSED, LIQUEFIED OR DISSOLVED
UNDER PRESSURE

1. LIST OF SUBSTANCES

2200 (1) Among the substances and articles covered by the title of Class 2, only those listed in marginal 2201 are to be accepted for carriage, and then only subject to the requirements of this Annex and to the provisions of Annex B. These substances and articles to be accepted for carriage under certain conditions are to be considered as substances and articles of ADR.

(2) Substances having a critical temperature lower than 50°C or, at 50°C, a vapour pressure greater than 300 kPa (3 bar) are deemed to be substances of Class 2.

Note: For the classification of solutions and mixtures (such as preparations and wastes) containing one or more components listed in marginal 2201, see also marginal 2002 (8).

(3) The substances and articles of Class 2 are classified as follows:

A: Compressed gases having a critical temperature below -10°C;

B: Liquefied gases having a critical temperature of -10°C or above:

a. Liquefied gases having a critical temperature of 70°C or above;

b. Liquefied gases having a critical temperature of -10°C or above, but below 70°C;

C: Deeply-refrigerated liquefied gases;

D: Gases dissolved under pressure;

E: Aerosol dispensers and non-refillable containers of gas under pressure;

F: Gases subject to special requirements; and

G: Empty receptacles and empty tanks.

The substances and articles of Class 2 are subdivided according to their chemical properties, as follows:

(a) non-inflammable;

(a 1) non-inflammable, toxic

(b) inflammable;

(b 1) inflammable, toxic;

(c) chemically unstable;

(c 1) chemically unstable, toxic.

Unless otherwise specified, chemically unstable substances shall be considered to be inflammable.

The names of corrosive gases and of articles containing such gases shall be followed by the word "corrosive" in brackets.

(6) Substances of Class 2 which are listed among the chemically unstable gases are to be accepted for carriage only if the necessary steps have been taken to prevent their dangerous decomposition, distillation or polymerization during carriage.

To this end, care should in particular be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

2201 A. Compressed gases (see also marginal 2201a under (a). For gases of 1° (a) and (b) and 2° (a) in aerosol dispensers or in non-refillable containers for gases under pressure, see under 10° and 11°).

Gases having a critical temperature below -10°C are considered to be compressed gases for the purposes of ADR.

1° PURE GASES AND TECHNICALLY-PURE GASES

(a) Non-inflammable

Argon; nitrogen; helium; krypton; neon; oxygen; tetrafluoromethane (R 14).

(a 1) Non-inflammable, toxic

Fluorine (corrosive); boron trifluoride; silicon tetrafluoride (corrosive).

(b) Inflammable

Deuterium; hydrogen; methane.

ADR (continued)

Class 2

2224 receptacles (marginal 2207 (2)(a)), it shall, in addition, bear a label conforming to model No. 12.

2225 Every package containing aerosol dispensers of 10° (b) 2., 10° (b) 1) 2., 10° (c) or 10° (c) 1), or non-refillable containers of gas under pressure of 11° (b), 11° (b) 1), 11° (c) or 11° (c) 1), shall bear a label conforming to model No. 3.

((

Particulars in the transport document

2226

(1) The description of the goods in the transport document must be:

- (a) in the case of pure and technically-pure gases of 1°, 3°, 5°, 7° or 9°, of aerosol dispensers of 10°, of non-refillable containers of gas under pressure of 11°: one of the names in *italics* in marginal 2201;
- (b) in the case of mixtures of gases of 2°, 4°, 6°, 8°, 12° or 13°: "mixture of gases". This description must be supplemented by an indication of the composition of the mixture of gases in volume per cent or mass per cent. Constituents below one per cent need not be indicated. In the case of mixtures of gases of 2° (a), 2° (b), 2° (b) 1), 4° (a), 4° (b), 4° (c), 6° (a), 8° (a) or 8° (b), the descriptions or names customary in the trade which are in *italics* in marginal 2201 may likewise be used, without indication of the composition.

These descriptions must be underlined and followed by *particulars of the class, the item number (together with the letter, if any), and the initials "ADR" or "RID" (e.g., 2, 5° (a) 1), ADR).*

(2) In the case of consignments of gases which are listed among the chemically unstable gases, the sender shall certify as follows in the transport document: "The necessary steps have been taken to satisfy the requirements of ADR marginal 2200 74)". In the case of consignments of mixtures of gases of 12° or test gases of 13°, the sender shall certify as follows in the transport document: "The conditions laid down in ADR marginal 2201, 12° or 13°, have been complied with".

(3) In the case of consignments of chlorine trifluoride of 3° (a) 1), the sender shall certify as follows in the transport document: "After filling with chlorine trifluoride, the receptacle has been kept under observation for not less than seven days and its leakproofness has been verified".

(4) In the case of tanks containing gases of 7° (a) or 8° (a), other than carbon dioxide and nitrous oxide, the transport document shall bear the following entry:

"The tank is in permanent communication with the atmosphere".

2227-
2236

C. Empty packagings

2237

(1) Receptacles and tanks of 14° shall be closed in the same manner as if they were full.

(2) The description in the transport document shall conform to one of the names given in 14°, (e.g. "Empty receptacle, uncleaned, 2, 14°, ADR"). This text shall be underlined. The description shall be completed by adding the words "Last load", together with the name and item number of the goods last loaded, e.g., Last load: chlorine, 3° (a) 1).

(3) The receptacles of 14° referred to in marginal 2212 (1) (a), (b) and (d) may be transported after the expiry of the time-limit set for the periodic test prescribed in marginal 2215, for the purpose of undergoing the tests.

D. Transitional provisions

2238

The following transitional provisions shall apply to receptacles for compressed or liquefied gases or gases dissolved under pressure:

Federal Register

Thursday
October 1, 1992

Part IV

Department of Transportation

Research and Special Programs Administration

49 CFR Part 107, et al.

Hazardous Materials Regulations; Editorial and Technical Revisions; Final Rule

consistency with the referenced entry "Polychlorinated biphenyls".

gg. The entry "Phosphorous pentasulfide" is corrected, based on the merit of a petition requesting consistency with materials of similar hazards, by revising the bulk packaging authorization in Column (8C) to read "242".

hh. Special Provision 19 is added in Column (7) for "Propane" to permit the use of the identification number "UN1075" as an alternative to the identification number assigned as long as the identification number is consistent on package markings, shipping papers and emergency response information.

ii. The entry "1,2-Propylenediamine" is revised to correctly assign Packing Group II and reference the non-bulk packaging authorization "202". These corrections are consistent with UN provisions.

jj. The entry "Silicon tetrachloride" is revised by removing Special Provision N41 from Column (7) because this material does not pose an additional transportation hazard when packaged in certain metal packagings.

kk. In Column (7), for the entry "Sodium", Special Provision B48 is added to except sodium metal in portable tanks from hydrostatic testing requirements, and Special Provision T28 is removed and replaced with Special Provision T46 in appropriate alpha-numerical order.

ll. The entry "Sodium bisulfate, solid or solution; see Sodium hydrogen sulfate, solid, or solution" is revised to read "Sodium bisulfate, solution; see Sodium hydrogen sulfate, solution". RSPA has determined that this material in its solid state does not meet the definition of a Class 8 PG III material.

mm. The entry "Substances which in contact with water emit flammable gases, solid, n.o.s." in Packing Group III is editorially revised by changing the bulk packaging authorization in Column (8C) from "242" to "241".

nn. The entry "Sulfuric acid, fuming less than 30 percent free sulfur trioxide" is revised by removing "POISON" as a subsidiary hazard label in Column (8) because this material is not poisonous below their concentration.

oo. Special Provision B13 is added in Column (7) for the entry "Tars, liquid including road asphalt and oils, bitumen and cut backs" in both Packing Groups II and III to authorize certain non-specification bulk packagings.

pp. The entry "Titanium tetrachloride" is revised, based on the merit of petitions, by adding Special Provision B77 in Column (7), which authorizes other approved packagings.

qq. The entry (mono- (trichloro) ethyl) monopotasium is revised by removing the parenthesis preceding the first "mono".

rr. The entry "Vanadium trichloride" is revised by removing the "AW" in Column (1) to correspond with § 173.154 for consistency.

ss. Based on the merits of a petition, the entry "Vinyl chloride" with identification number "NA1006" and Special Provision 21 is added for domestic transportation only. Addition of this entry allows "Vinyl chloride" to be transported with or without an inhibitor, provided the requirements of Special Provision 21 are satisfied. This entry is separate from the entry for "Vinyl chloride, inhibited".

tt. The entry "White asbestos" (chrysotile, actinolite, anthophyllite, tremolite) is editorially revised to indicate that "[chrysotile, actinolite, anthophyllite, tremolite]" are not part of the proper shipping name.

The Air Transport Association requested that RSPA add an entry to the Table "Cosmetics, n.o.s. containing flammable aerosol and/or non-flammable aerosol and/or flammable liquid in small inner packagings" for consistency with the ICAO Technical Instructions. However, RSPA does not believe that maintaining consistency with ICAO is adequate justification for adopting piecemeal revisions, such as this entry. RSPA already offers limited quantity and consumer commodity exceptions for flammable liquids and aerosols. International consistency could be attained through a more fundamental approach, such as adopting consumer commodity provisions in international regulations.

Section 172.101 Appendix. In paragraph 2 of the appendix to § 172.101, the section reference is editorially revised to read

"§ 172.101(c)(8)".

Section 172.102. Special Provision 4 is corrected to reference "Hazard Zone D". Special Provision 19 is added to allow the use of either the specific

identification number assigned to a material or "UN1075" (the number assigned to "Petroleum gases, liquefied") for liquefied petroleum gases such as propane, butane, isobutane and butylene. Special Provision 21 is added to provide guidance as to when vinyl chloride that does not contain an inhibitor may be transported using the proper shipping name, "Vinyl chloride".

Based on the merit of a petition, Special Provisions B2, B3, B4, and B10 are revised to prohibit the use of MC 300, MC 301, MC 302, MC 303, and MC 305 cargo tanks. This revision is consistent with the prohibited use of an

MC 300 cargo tank. A new Special Provision B13 is added to provide relief from certain packaging requirements for liquid asphalts having a flash point below 37.8°C (100°F).

RSPA received several requests to revise Special Provision B14. RSPA is revising B14 to clarify that the requirement for tank and jacket protective coatings applies only to new construction or repair and is not a retrofit requirement. Other revisions to B14 are beyond the scope of this document and may be addressed in a future rulemaking.

The last two sentences in Special Provision B28 are revised for clarity. RSPA is adding Special Provision B39, based on the merits of a petition, to allow the alternative marking "Hydrocyanic acid, liquefied" on tank cars containing hydrogen cyanide. A new Special Provision B47 reinstates a provision of the pre-HM-161 regulations, which permits a safety relief device with a start-to-discharge pressure setting of 310 kPa (45 psig) for nitrating acid mixtures. Special Provision B60 is revised to include covered motor vehicles and portable tanks as authorized bulk packagings for solid sodium cyanide. Several "T" notes are editorially revised to facilitate use of the HM Tank Configurations.

Section 172.203. The phrase "or class entry" is added in paragraph (m)(1). The effect of this change is that the word "poison" does not need to be annotated in association with the basic shipping description if the hazard class entry indicates the material is a poison (i.e., a Division 6.1 material).

Section 172.312. The depiction of the ISO Standard orientation marking in the December 20, 1991 final rule displays more than the minimal ISO standard mark, which does not have a rectangular border surrounding the arrows. Therefore, a sentence is added in paragraph (a)(2) to clarify that a rectangular border around the orientation arrows is optional.

Section 172.330. The paragraph (a) heading is revised to include "identification number".

Section 172.405. The introductory text in paragraph (a) is revised to clarify that when use of text indicating a hazard is optional, this option applies to both primary and subsidiary labels.

Section 172.422. The correct SPONTANEOUSLY COMBUSTIBLE label is published, which indicates that the red color is the lower half of the label extends to the dotted line border.

Section 172.504. Paragraph (c) is revised to allow the 454 kg (1,001 pounds) placarding exception for any

§ 172.101, App. [Amended]

12. In the Appendix to § 172.101, in paragraph 2, the reference "§ 172.101(c)(9)" is revised to read "§ 172.101(c)(8)".

13. In § 172.102, the following special provisions are added, revised, or removed as indicated:

a. In paragraph (c)(1), Special Provisions 19 and 21 are added.

b. In paragraph (c)(3), Special Provisions B13, B35, and B47 are added and Special Provisions B14 and B69 are revised.

c. In paragraph (c)(7)(ii), T28 is redesignated as T46 and moved to its proper alpha-numeric order and Special Provisions T28, T39 and T43 are added.

§ 172.102 Special provisions.

(c) * * *

Code/Special Provisions

19. For domestic transportation only, the identification number "UN1075" may be used in place of the identification number specified in Column (4) of the § 172.101 Table. The identification number used must be consistent on package markings, shipping papers and emergency response information.

21. This material must be stabilized by appropriate means (e.g., addition of chemical inhibitor, purging to remove oxygen) to prevent dangerous polymerization (see § 173.21(i) of this subchapter).

(3) * * *

Code/Special Provisions

B13. A nonspecification cargo tank motor vehicle authorized in § 173.247 of this subchapter must be at least equivalent in design and in construction to a DOT 406 cargo tank or MC 306 cargo tank (if constructed before September 1, 1983), except as follows:

a. Packagings equivalent to MC 306 cargo tanks are excepted from §§ 178.340-10, certification; 178.341-4, vents; and 178.341-5, emergency flow control.

b. Packagings equivalent to DOT 406 cargo tanks are excepted from §§ 178.345-14, marking; 178.345-15, certification; 178.346-10, pressure relief; and 178.348-11, outlets.

c. Packagings are excepted from the design stress limits at elevated temperatures, as described in the ASME Code. However, the design stress limits may not exceed 25 per cent of the stress, as specified in § 178.65-5(b) of this subchapter, for 0 temper at the maximum design temperature of the cargo tank.

B14. Each tank, except a multi-unit tank car tank, must be insulated with at least 100 mm (3.9 inches) of cork or other suitable insulation material of sufficient thickness

that the overall thermal conductance at 13.5 °C (56 °F) is not more than 1.533 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulation systems must not promote corrosion to steel when wet. Tank and jacket protective coatings are required. Additionally, all tank car tanks constructed after October 1, 1986 and tanks repaired after October 1, 1983, where the entire jacket is removed during the repair, must have tank and jacket protective coatings. The jacket must be flashed around all openings so as to be weather tight.

B35. Tank cars containing hydrogen cyanide may be alternatively marked "Hydrocyanic acid, liquefied" if otherwise conforming to marking requirements in subpart D of this part.

B47. A safety relief device with a start-to-discharge pressure setting of 310 kPa (45 psig) is permitted.

B69. Dry sodium cyanide or potassium cyanide may be shipped in sift-proof weather-resistant metal covered hopper cars, covered motor vehicles, portable tanks or non-specification bins. Bins must be approved by the Associate Administrator for Hazardous Materials Safety. Flexible intermediate bulk containers (FIBCs) may also be used under conditions approved by the Associate Administrator for Hazardous Materials Safety.

(7) * * *

Code/Special Provisions

T28. See entry for T28 in the IM Tank Configuration Table in paragraph (c)(7)(i) of this section.

T39. See entry for T39 in the IM Tank Configuration Table in paragraph (c)(7)(i) of this section.

T43. See entry for T43 in the IM Tank Configuration Table in paragraph (c)(7)(i) of this section.

§ 172.102 [Amended]

14. In addition, in § 172.102, the following changes are made:

a. In paragraph (c)(1), in Special Provision 4, the wording "Hazard Zone C" is revised to read "Hazard Zone D".

b. In paragraph (c)(1), in Special Provision 12, the word "comply" is revised to read "conform".

c. In paragraph (c)(1), in Special Provision 28, the word "dihydrated" is revised to read "dehydrated".

d. In paragraph (c)(1), in Special Provision 31, the word "nonhazardous" is revised to read "non-hazardous".

e. In paragraph (c)(3), in Special Provisions B2, B3, B4, and B10, the wording "MC 306" is revised to read "MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306".

f. In paragraph (c)(3), in Special Provision B24, the wording "shall be" is revised to read "must be".

g. In paragraph (c)(3), in Special Provision B28, the last two sentences are revised to read "In addition, the material also must be covered with an inert gas or the container must be filled with water to the tank's capacity. After unloading, the residual material also must be covered with an inert gas or the container must be filled with water to the tank's capacity."

h. In paragraph (c)(3), in Special Provision B68, the wording "2069 kPa" is revised to read "2,069 kPa".

i. In paragraph (c)(3), in Special Provision B80, the wording "shall have" is revised to read "must have".

j. In paragraph (c)(3), in Special Provision B90, the wording "equivalent or" is revised to read "equivalent to".

§ 172.208 [Amended]

15. In § 172.203, in paragraph (m)(1), the wording "is not disclosed in the shipping name" is revised to read "is not disclosed in the shipping name or class entry".

§ 172.312 [Amended]

16. In § 172.312, in paragraph (a)(2), a second sentence is added at the end of the paragraph to read "Depicting a rectangular border around the arrows is optional."

§ 172.330 [Amended]

17. In § 172.330, in paragraph (a), the paragraph heading "Shipping name." is revised to read "Shipping name and identification number."

§ 172.405 [Amended]

18. In § 172.405, in paragraph (a) introductory text, the wording "is not required on a label when" is revised to read "is not required on a primary or subsidiary label when".

19. In § 172.422, paragraph (a) is revised to read as follows:

§ 172.422 SPONTANEOUSLY COMBUSTIBLE label.

(a) Except for size and color, the SPONTANEOUSLY COMBUSTIBLE label must be as follows:

BILLING CODE 4910-29-01