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that also meets the definition for an oxidizing gas (see § 171.8 of this subchapter) must be labeled OXIDIZER.

(g) *Division 2.3 materials.* In addition to the label specified in Column 6 of the § 172.101 Table, each package of Division 2.3 material that also meets the definition for:

- (1) Division 2.1, must be labeled Flammable Gas;
- (2) Division 5.1, must be labeled Oxidizer; and
- (3) Class 8, must be labeled Corrosive.

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172-139, 59 FR 67490, Dec. 29, 1994; Amdt. 172-140, 60 FR 26805, May 18, 1995; Amdt. 172-149, 61 FR 27173, May 30, 1996; 62 FR 39405, July 22, 1997]

§172.403 Class 7 (radioactive) material.

(a) Unless excepted from labeling by §§ 173.421 through 173.428 of this subchap-

ter, each package of radioactive material must be labeled as provided in this section.

(b) The proper label to affix to a package of Class 7 (radioactive) material is based on the radiation level at the surface of the package and the transport index. The proper category of label must be determined in accordance with paragraph (c) of this section. The label to be applied must be the highest category required for any of the two determining conditions for the package. RADIOACTIVE WHITE-I is the lowest category and RADIOACTIVE YELLOW-III is the highest. For example, a package with a transport index of 0.8 and a maximum surface radiation level of 0.6 millisievert (60 millirems) per hour must bear a RADIOACTIVE YELLOW-III label.

(c) Category of label to be applied to Class 7 (radioactive) materials packages:

Transport index	Maximum radiation level at any point on the external surface	Label category ¹
0 ²	Less than or equal to 0.005 mSv/h (0.5 mrem/h)	WHITE-I.
More than 0 but not more than 1	Greater than 0.005 mSv/h (0.5 mrem/h) but less than or equal to 0.5 mSv/h (50 mrem/h)	YELLOW-II.
More than 1 but not more than 10	Greater than 0.5 mSv/h (50 mrem/h) but less than or equal to 2 mSv/h (200 mrem/h)	YELLOW-III.
More than 10	Greater than 2 mSv/h (200 mrem/h) but less than or equal to 10 mSv/h (1,000 mrem/h)	YELLOW-III (Must be shipped under exclusive use provisions; see 173.441(b) of this subchapter).

¹ Any package containing a "highway route controlled quantity" (§ 173.403 of this subchapter) must be labelled as RADIOACTIVE YELLOW-III.

² If the measured TI is not greater than 0.05, the value may be considered to be zero.

(d) *EMPTY* label. See § 173.428(d) of this subchapter for EMPTY labeling requirements.

(e) [Reserved]

(f) Each package required by this section to be labeled with a RADIOACTIVE label must have two of these labels, affixed to opposite sides of the package. (See § 172.406(e)(3) for freight container label requirements).

(g) The following applicable items of information must be entered in the blank spaces on the RADIOACTIVE label by legible printing (manual or mechanical), using a durable weather resistant means of marking:

(1) *Contents.* The name of the radionuclides as taken from the listing of radionuclides in § 173.435 of this subchapter (symbols which conform to established radiation protection terminology are authorized, i.e., 99Mo, 60Co, etc.). For mixtures of radionuclides, with consideration of space available on the label, the radionuclides that must be shown must be determined in accordance with § 173.433(f) of this subchapter.

(2) *Activity.* Activity units must be expressed in appropriate SI units (e.g., Becquerels (Bq), Terabecquerels (TBq), etc.) or in both appropriate SI units and appropriate custom-

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ary units (Curies (Ci), milliCuries (mCi), microcuries (uCi), etc.). Alternatively, for domestic transport the activity may be expressed solely in terms of curies until April 1, 1997. Abbreviations are authorized. Except for plutonium-238, plutonium-239, and plutonium-241, the weight in grams or kilograms of fissile radionuclides may be inserted instead of activity units. For plutonium-238, plutonium-239, and plutonium-241, the weight in grams or kilograms of fissile radionuclides may be inserted in addition to the activity units.

(3) *Transport index.* (See § 173.403 of this subchapter.)

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40679, Sept. 20, 1976; Amdt. 172-78, 48 FR 10226, Mar. 10, 1983; 48 FR 13431, Mar. 31, 1983; 48 FR 31217, July 7, 1983; Amdt. 172-85, 48 FR 50459, Nov. 1, 1983; Amdt. 172-114, 53 FR 38274, Sept. 29, 1988; Amdt. 172-123, 55 FR 52594, Dec. 21, 1990; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995; Amdt. 172-143, 61 FR 20750, May 8, 1996]

§172.404 Labels for mixed and consolidated packaging.

(a) *Mixed packaging.* When hazardous materials having different hazard classes are packed within the same packaging, or within the same outside container or overpack as described in § 173.25 and authorized by § 173.21 of this subchapter, the packaging, outside container or overpack must be labeled as required for each class of hazardous material contained therein.

(b) *Consolidated packaging.* When two or more packages containing compatible hazardous material (see § 173.21 of this subchapter) are placed within the same outside container or overpack, the outside container or overpack must be labeled as required for each class of hazardous material contained therein.

§172.405 Authorized label modifications.

(a) For Classes 1, 2, 3, 4, 5, 6, and 8, text indicating a hazard (for example FLAMMABLE LIQUID) is not required on a primary or subsidiary label when—

(1) The label otherwise conforms to the provisions of this subpart, and

(2) The hazard class or, for Division 5.1 or 5.2 the division number, is displayed in the lower corner of the label, if the label corresponds to the primary hazard class of the hazardous material.

(b) For a package containing Oxygen, compressed, or Oxygen, refrigerated liquid, the OXIDIZER label specified in § 172.426 of this subpart, modified to display the word “OXYGEN” instead of “OXIDIZER”, and the class number “2” instead of “5.1”, may be used in place of the NON-FLAMMABLE GAS and OXIDIZER labels. Notwithstanding the provisions of paragraph (a) of this section, the word “OXYGEN” must appear on the label.

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992]

§172.406 Placement of labels.

(a) *General.*

(1) Except as provided in paragraphs (b) and (e) of this section, each label required by this subpart must—

(i) Be printed on or affixed to a surface (other than the bottom) of the package or containment device containing the hazardous material; and

(ii) Be located on the same surface of the package and near the proper shipping name marking, if the package dimensions are adequate.

(2) Except as provided in paragraph (e) of this section, duplicate labeling is not required on a package or containment device (such as to satisfy redundant labeling requirements).

(b) *Exceptions.* A label may be printed on or placed on a securely affixed tag, or may be affixed by other suitable means to:

(1) A package that contains no radioactive material and which has dimensions less than those of the required label;

(2) A cylinder; and

(3) A package which has such an irregular surface that a label cannot be satisfactorily affixed.

(c) *Placement of multiple labels.* When primary and subsidiary hazard labels are required, they must be displayed next to each other. Placement conforms to this require-

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ment if labels are within 150 mm (6 inches) of one another.

(d) *Contrast with background.* Each label must be printed on or affixed to a background of contrasting color, or must have a dotted or solid line outer border.

(e) *Duplicate labeling.* Generally, only one of each different required label must be displayed on a package. However, duplicate labels must be displayed on at least two sides or two ends (other than the bottom) of—

(1) Each package or overpack having a volume of 1.8 m³ (64 cubic feet) or more;

(2) Each non-bulk package containing a radioactive material;

(3) Each DOT 106 or 110 multi-unit tank car tank. Labels must be displayed on each end;

(4) Each portable tank of less than 3,785 L (1000 gallons) capacity; and

(5) Each freight container or aircraft unit load device having a volume of 1.8 m³ (64 cubic feet) or more, but less than 18 m³ (640 cubic feet). One of each required label must be displayed on or near the closure.

(f) *Visibility.* A label must be clearly visible and may not be obscured by markings or attachments.

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993]

§172.407 Label specifications.

(a) *Durability.* Each label, whether printed on or affixed to a package, must be durable and weather resistant. A label on a package must be able to withstand, without deterioration or a substantial change in color, a 30-day exposure to conditions incident to transportation that reasonably could be expected to be encountered by the labeled package.

(b) *Design.*

(1) Except for size and color, the printing, inner border, and symbol on each label must be as shown in §§ 172.411 through 172.448 of this subpart, as appropriate.

(2) The dotted line border shown on each label is not part of the label specification, except when used as an alternative for the solid line outer border to meet the requirements of § 172.406(d) of this subpart.

(c) *Size.*

(1) Each diamond (square-on-point) label prescribed in this subpart must be at least 100 mm (3.9 inches) on each side with each side having a solid line inner border 5.0 to 6.3 mm (0.2 to 0.25 inches) from the edge.

(2) The CARGO AIRCRAFT ONLY label must be a rectangle measuring at least 110 mm (4.3 inches) in height by 120 mm (4.7 inches) in width. The word “DANGER” must be shown in letters measuring at least 12.7 mm (0.5 inches) in height.

(3) Except as otherwise provided in this subpart, the hazard class number, or division number, as appropriate, must be at least 6.3 mm (0.25 inches) and not greater than 12.7 mm (0.5 inches).

(4) When text indicating a hazard is displayed on a label, the label name must be shown in letters measuring at least 7.6 mm (0.3 inches) in height except that—

(i) For a SPONTANEOUSLY COMBUSTIBLE or DANGEROUS WHEN WET label, respectively, the words “Spontaneously” and “When Wet” must be shown in letters measuring at least 5.1 mm (0.2 inches) in height.

(ii) For a KEEP AWAY FROM FOOD label, the word “HARMFUL” must be shown in letters measuring at least 7.6 mm (0.3 inches) in height.

(5) The symbol on each label must be proportionate in size to that shown in the appropriate section of this subpart.

(d) *Color.*

(1) The background color on each label must be as prescribed in §§ 172.411 through 172.448 of this subpart, as appropriate.

(2) The symbol, text, numbers, and border must be shown in black on a label except that—

(i) White may be used on a label with a one color background of green, red or blue; and

(ii) White must be used for the text and class number for the CORROSIVE label.

(3) Black and any color on a label must be able to withstand, without substantial change, a 72-hour fadeometer test (for a description of equipment designed for this purpose, see ASTM G 23-69 (1975) or ASTM G 26-70).

(4)(i) A color on a label, upon visual examination, must fall within the color tolerances—

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(A) Displayed on color charts conforming to the technical specifications for charts set forth in Table 1 or 2 in appendix A to this part; or

(B) For labels printed on packaging surfaces, specified in Table 3 in appendix A to this part.

(ii) Color charts conforming to appendix A to this part are on display in Room 8421, Nassif Building, 400 Seventh Street, SW., Washington DC 20590-0001.

(5) The specified label color must extend to the edge of the label in the area designated on each label except the CORROSIVE, RADIOACTIVE YELLOW-II AND RADIOACTIVE YELLOW-III labels on which the color must extend only to the inner border.

(e) *Form identification.* A label may contain form identification information, including the name of its maker, provided that information is printed outside the solid line inner border in no larger than 10-point type.

(f) *Exceptions.* A label conforming to specifications in the UN Recommendations may be used in place of a corresponding label which conforms to the requirements of this subpart.

(g) *Trefoil symbol.* The trefoil symbol on the RADIOACTIVE WHITE-I, RADIOACTIVE YELLOW-II, and RADIOACTIVE YELLOW-III labels must meet the appropriate specifications in Appendix B of this part.

[Amdt. 172-123, 55 FR 52595, Dec. 21, 1990, as amended at 56 FR 66256, Dec. 20, 1991; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995]

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

(a) Except for size and color, the EXPLOSIVE 1.1, EXPLOSIVE 1.2 and EXPLOSIVE 1.3 labels must be as follows:



(b) In addition to complying with § 172.407, the background color on the EXPLOSIVE 1.1, EXPLOSIVE 1.2 and EXPLOSIVE 1.3 labels must be orange. The “***” shall be replaced with the appropriate division number and compatibility group. The compatibility group letter must be the same size as the division number and must be shown as a capitalized Roman letter.

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

EXPLOSIVE 1.4:



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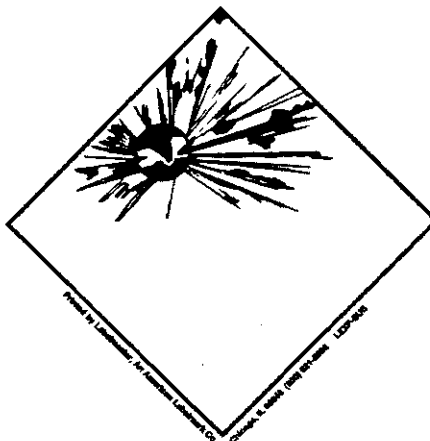
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EXPLOSIVE 1.5:



EXPLOSIVE SUBSIDIARY LABEL:



EXPLOSIVE 1.6:



(d) In addition to complying with § 172.407, the background color on the EXPLOSIVE 1.4, EXPLOSIVE 1.5, EXPLOSIVE 1.6, and EXPLOSIVE Subsidiary label must be orange. Except for the EXPLOSIVE subsidiary label, the “*” shall be replaced with the appropriate compatibility group. The compatibility group letter must be shown as a capitalized Roman letter. Except for the EXPLOSIVE subsidiary label, division numerals must measure at least 30 mm (1.2 inches) in height and at least 5 mm (0.2 inches) in width.

[Amdt. 172-123, 56 FR 66256, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§172.415 NON-FLAMMABLE GAS Label.

(a) Except for size and color, the NON-FLAMMABLE GAS label must be as follows:

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(b) In addition to complying with § 172.407, the background color on the NON-FLAMMABLE GAS label must be green.

[Amdt. 172-123, 56 FR 66256, Dec. 20, 1991]

§172.416 POISON GAS label.

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



(b) In addition to complying with § 172.407, the background on the POISON GAS label and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond

must be 14 mm (0.54 inches) above the horizontal center line.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994; 62 FR 1217, Jan. 08, 1997; 62 FR 39405, July 22, 1997]

§172.417 FLAMMABLE GAS label.

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



(b) In addition to complying with § 172.407, the background color on the FLAMMABLE GAS label must be red.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§172.419 FLAMMABLE LIQUID label.

(a) Except for size and color the FLAMMABLE LIQUID label must be as follows:



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(b) In addition to complying with § 172.407, the background color on the FLAMMABLE LIQUID label must be red.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§172.420 FLAMMABLE SOLID label.

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



(b) In addition to complying with § 172.407, the background on the FLAMMABLE SOLID label must be white with vertical red stripes equally spaced on each side of a red stripe placed in the center of the label. The red vertical stripes must be spaced so that, visually, they appear equal in width to the white spaces between them. The symbol (flame) and text (when used) must be overprinted. The text "FLAMMABLE SOLID" may be placed in a white rectangle.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§172.422 SPONTANEOUSLY COMBUSTIBLE label.

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



(b) In addition to complying with § 172.407, the background color on the lower half of the SPONTANEOUSLY COMBUSTIBLE label must be red and the upper half must be white.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991, as amended at 57 FR 45458, Oct. 1, 1992]

§172.423 DANGEROUS WHEN WET label.

(a) Except for size and color, the DANGEROUS WHEN WET label must be as follows:



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(b) In addition to complying with § 172.407, the background color on the DANGEROUS WHEN WET label must be blue.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§172.426 OXIDIZER label.

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



(b) In addition to complying with § 172.407, the background color on the OXIDIZER label must be yellow.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§172.427 ORGANIC PEROXIDE label.

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



(b) In addition to complying with § 172.407, the background color on the ORGANIC PEROXIDE label must be yellow.

[Amdt. 172-123, 56 FR 66258, Dec. 20, 1991]

§§ 172.429 POISON INHALATION HAZARD label.

(a) Except for size and color, the POISON INHALATION HAZARD label must be as follows:



(b) In addition to complying with § 172.407, the background on the POISON INHALATION HAZARD label and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 14 mm (0.54 inches) above the horizontal center line.

[62 FR 1229, January 08, 1997; 62 FR 39408, July 22, 1997]

§172.430 POISON label.

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

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(b) In addition to complying with § 172.407, the background on the POISON label must be white. The word "TOXIC" may be used in lieu of the word "POISON".

[Amdt. 172-123, 56 FR 66258, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§172.431 KEEP AWAY FROM FOOD label.

(a) Except for size and color, the KEEP AWAY FROM FOOD label must be as follows:



(b) In addition to complying with § 172.407, the background on the KEEP AWAY FROM FOOD label must be white.

[Amdt. 172-123, 56 FR 66258, Dec. 20, 1991]

§172.432 INFECTIOUS SUBSTANCE label.

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



(b) In addition to complying with § 172.407, the background on the INFECTIOUS SUBSTANCE label must be white.

[Amdt. 172-123, 56 FR 66258, Dec. 20, 1991]

§172.436 RADIOACTIVE WHITE-I label.

(a) Except for size and color, the RADIOACTIVE WHITE-I label must be as follows:

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(b) In addition to complying with § 172.407, the background on the RADIOACTIVE WHITE-I label must be white. The printing and symbol must be black, except for the "I" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§172.438 RADIOACTIVE YELLOW-II label.

(a) Except for size and color, the RADIOACTIVE YELLOW-II must be as follows:



(b) In addition to complying with § 172.407, the background color on the RADIOACTIVE YELLOW-II label must be yellow in the top half and white in the lower half. The printing

and symbol must be black, except for the "II" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§172.440 RADIOACTIVE YELLOW-III label.

(a) Except for size and color, the RADIOACTIVE YELLOW-III label must be as follows:



(b) In addition to complying with § 172.407, the background color on the RADIOACTIVE YELLOW-III label must be yellow in the top half and white in the lower half. The printing and symbol must be black, except for the "III" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

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§172.442 CORROSIVE label.

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



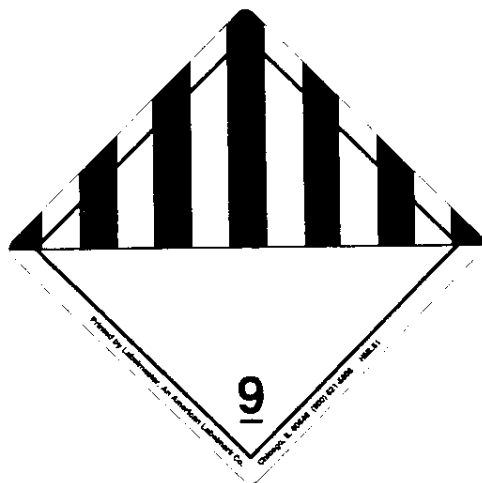
(b) In addition to complying with § 172.407, the background on the CORROSIVE label must be white in the top half and black in the lower half.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§172.444 [Reserved]

§172.446 CLASS 9 label.

(a) Except for size and color, the "CLASS 9" (miscellaneous hazardous materials) label must be as follows:



(b) In addition to complying with § 172.407, the background on the CLASS 9 label must be white with seven black vertical stripes on the top half. The black vertical stripes must be spaced, so that, visually, they appear equal in width to the six white spaces between them. The lower half of the label must be white with the class number "9" underlined and centered at the bottom.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§172.448 CARGO AIRCRAFT ONLY label.

(a) Except for size and color, the CARGO AIRCRAFT ONLY label must be as follows:



(b) The CARGO AIRCRAFT ONLY label must be black on an orange background.

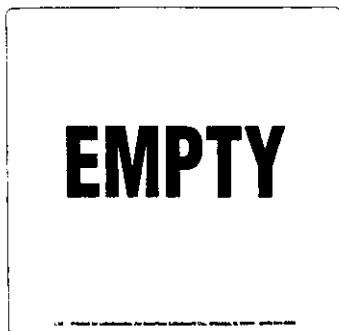
[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

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§172.450 EMPTY label.

(a) Each EMPTY label, except for size, must be as follows:



(1) Each side must be at least 6 inches (152 mm.) with each letter at least 1 inch (25.4 mm.) in height.

(2) The label must be white with black printing.

(b) [Reserved]

Subpart F—Placarding

§172.500 Applicability of placarding requirements.

(a) Each person who offers for transportation or transports any hazardous material subject to this subchapter shall comply with the applicable placarding requirements of this subpart.

(b) This subpart does not apply to-

(1) Infectious substances;

(2) Hazardous materials classed as ORM-D;

(3) Hazardous materials authorized by this subchapter to be offered for transportation as Limited Quantities when identified as such on shipping papers in accordance with § 172.203(b);

(4) Hazardous materials prepared in accordance with § 173.13 of this subchapter;

(5) Hazardous materials which are packaged as small quantities under the provisions of § 173.4 of this subchapter; and

(6) Combustible liquids in non-bulk packagings.

[Amdt. 172-123, 55 FR 52599, Dec. 21, 1990, as amended by Amdt. 172-149, 61 FR 27173, May 30, 1996]

§172.502 Prohibited and permissive placarding.

(a) *Prohibited placarding.* Except as provided in paragraph (b) of this section, no person may affix or display on a packaging, freight container, unit load device, motor vehicle or rail car-

(1) Any placard described in this subpart unless-

(i) The material being offered or transported is a hazardous material;

(ii) The placard represents a hazard of the hazardous material being offered or transported; and

(iii) Any placarding conforms to the requirements of this subpart.

(2) Any sign, advertisement, slogan (such as "Drive Safely"), or device that, by its color, design, shape or content, could be confused with any placard prescribed in this subpart.

(b) *Exceptions.*

(1) The restrictions in paragraph (a) of this section do not apply to a bulk packaging, freight container, unit load device, transport vehicle or rail car which is placarded in conformance with the TDG Regulations, the IMDG Code or the UN Recommendations.

(2) The restrictions of paragraph (a) of this section do not apply to the display of an identification number on a white square-on-point configuration in accordance with § 172.336(b) of this part.

(3) The restrictions in paragraph (a)(2) of this section do not apply until October 1, 2001 to a safety sign or safety slogan (e.g., "Drive Safely" or "Drive Carefully"), which was permanently marked on a transport vehicle, bulk packaging, or freight container on or before August 21, 1997.

(c) *Permissive placarding.* Placards may be displayed for a hazardous material, even when not required, if the placarding otherwise conforms to the requirements of this subpart.

[Amdt. 172-123, 55 FR 52599, Dec. 21, 1990, as amended at 56 FR 66259, Dec. 20, 1991; 62 FR 1217, Jan. 08, 1997; 62 FR 39408, July 22, 1997]

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§172.503 Identification number display on placards.

For procedures and limitations pertaining to the display of identification numbers on placards, see § 172.334.

[Amdt. 172-58, 45 FR 34701, May 22, 1980]

§172.504 General placarding requirements.

(a) *General.* Except as otherwise provided in this subchapter, each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material must be placarded on each side and each end with the type of placards specified in Tables 1 and 2 of this section and in accordance with other placarding requirements of this subpart, including the specifications for the placards named in the tables and described in detail in §§ 172.519 through 172.560.

(b) *DANGEROUS placard.* A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packages with two or more categories of hazardous materials that require different placards specified in Table 2 of paragraph (e) of this section may be placarded with a DANGEROUS placard instead of the separate placarding specified for each of the materials in Table 2 of paragraph (e) of this section. However, when 1,000 kg (2,205 pounds) aggregate gross weight or more of one category of material is loaded therein at one loading facility on a

freight container, unit load device, transport vehicle, or rail car, the placard specified in Table 2 of paragraph (e) of this section for that category must be applied.

(c) *Exception for less than 454 kg (1,001 pounds).* Except for bulk packagings and hazardous materials subject to § 172.505, when hazardous materials covered by Table 2 of this section are transported by highway or rail, placards are not required on—

(1) A transport vehicle or freight container which contains less than 454 kg (1001 pounds) aggregate gross weight of hazardous materials covered by Table 2 of paragraph (e) of this section; or

(2) A rail car loaded with transport vehicles or freight containers, none of which is required to be placarded.

The exceptions provided in paragraph (c) of this section do not prohibit the display of placards in the manner prescribed in this subpart, if not otherwise prohibited (see § 172.502), on transport vehicles or freight containers which are not required to be placarded.

(d) *Exception for empty non-bulk packages.* A non-bulk packaging that contains only the residue of a hazardous material covered by Table 2 of paragraph (e) of this section need not be included in determining placarding requirements.

(e) *Placarding tables.* Placards are specified for hazardous materials in accordance with the following tables:

TABLE 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1	EXPLOSIVES 1.1	172.522
1.2	EXPLOSIVES 1.2	172.522
1.3	EXPLOSIVES 1.3	172.522
2.3	POISON GAS	172.540
4.3	DANGEROUS WHEN WET	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE	172.552
6.1 (inhalation hazard, Zone A or B)	POISON INHALATION HAZARD	172.555
7 (Radioactive Yellow III label only)	RADIOACTIVE ¹	172.556

¹ RADIOACTIVE placard also required for exclusive use shipments of low specific activity material in accordance with § 173.425 (b) or (c) of this subchapter.

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TABLE 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (\$)
1.4.....	EXPLOSIVES 1.4.....	172.523
1.5.....	EXPLOSIVES 1.5.....	172.524
1.6.....	EXPLOSIVES 1.6.....	172.525
2.1.....	FLAMMABLE GAS.....	172.532
2.2.....	NON-FLAMMABLE GAS.....	172.528
3.....	FLAMMABLE.....	172.542
Combustible liquid.....	COMBUSTIBLE.....	172.544
4.1.....	FLAMMABLE SOLID.....	172.546
4.2.....	SPONTANEOUSLY COMBUSTIBLE.....	172.547
5.1.....	OXIDIZER.....	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).....	ORGANIC PEROXIDE.....	172.552
6.1 (PG I or II, other than Zone A or B inhalation hazard).....	POISON.....	172.554
6.1 (PG III).....	KEEP AWAY FROM FOOD.....	172.553
6.2.....	(None).....	
8.....	CORROSIVE.....	172.558
9.....	CLASS 9.....	172.560
ORM-D.....	(None).....	

(f) *Additional placarding exceptions.*

(1) When more than one division placard is required for Class 1 materials on a transport vehicle, rail car, freight container or unit load device, only the placard representing the lowest division number must be displayed.

(2) A FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on-

(i) A cargo tank or portable tank.

(ii) A compartmented tank car which contains both flammable and combustible liquids.

(3) A NON-FLAMMABLE GAS placard is not required on a transport vehicle which contains non-flammable gas if the transport vehicle also contains flammable gas or oxygen and it is placarded with FLAMMABLE GAS or OXYGEN placards, as required.

(4) OXIDIZER placards are not required for Division 5.1 materials on freight containers, unit load devices, transport vehicles or rail cars which also contain Division 1.1 or 1.2 materials and which are placarded with EXPLOSIVES 1.1 or 1.2 placards, as required.

(5) For transportation by transport vehicle or rail car only, an OXIDIZER placard is not

required for Division 5.1 materials on a transport vehicle, rail car or freight container which also contains Division 1.5 explosives and is placarded with EXPLOSIVES 1.5 placards, as required.

(6) The EXPLOSIVE 1.4 placard is not required for those Division 1.4 Compatibility Group S (1.4S) materials that are not required to be labeled 1.4S.

(7) For domestic transportation of oxygen, compressed or oxygen, refrigerated liquid, the OXYGEN placard in § 172.530 of this subpart may be used in place of a NON-FLAMMABLE GAS placard.

(8) Except for a material classed as a combustible liquid that also meets the definition of a Class 9 material, a COMBUSTIBLE placard is not required for a material classed as a combustible liquid when transported in a non-bulk packaging. For a material in a non-bulk packaging classed as a combustible liquid that also meets the definition of a Class 9 material, the CLASS 9 placard may be substituted for the COMBUSTIBLE placard.

(9) For domestic transportation, a Class 9 placard is not required. A bulk packaging con-

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taining a Class 9 material must be marked with the appropriate identification number displayed on a Class 9 placard, an orange panel or a white-square-on-point display configuration as required by subpart D of this part.

(10) For domestic transportation of Division 6.1, PG III materials, a POISON placard may be used in place of a KEEP AWAY FROM FOOD placard.

(g) For shipments of Class 1 (explosive) materials by aircraft or vessel, the applicable compatibility group letter must be displayed on the placards required by this section.

[Amdt. 172-123, 55 FR 52600, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-123, 57 FR 59310, Dec. 15, 1992; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995; Amdt. 172-150, 61 FR 50624, Sept. 26, 1996; 62 FR 1217, Jan. 08, 1997; 62 FR 39407, July 22, 1997]

§172.505 Placarding for subsidiary hazards.

(a) Each transport vehicle, freight container, portable tank, unit load device, or rail car that contains a poisonous material subject to the "Poison Inhalation Hazard" shipping description of § 172.203(m)(3) must be placarded with a POISON INHALATION HAZARD or POISON GAS placard, as appropriate, on each side and each end, in addition to any other placard required for that material in § 172.504. Duplication of the POISON INHALATION HAZARD or POISON GAS placard is not required.

(b) In addition to the RADIOACTIVE placard which may be required by § 172.504(e) of this subpart, each transport vehicle, portable tank or freight container that contains 454 kg (1001 pounds) or more gross weight of fissile or low specific activity uranium hexafluoride shall be placarded with a CORROSIVE placard on each side and each end.

(c) Each transport vehicle, portable tank, freight container or unit load device that contains a material which has a subsidiary hazard of being dangerous when wet, as defined in § 173.124 of this subchapter, shall be placarded with DANGEROUS WHEN WET placards, on each side and each end, in addition to the placards required by § 172.504.

(d) Hazardous materials that possess secondary hazards may exhibit subsidiary placards that correspond to the placards described in this part, even when not required by this part (see also § 172.519(b)(4) of this subpart).

[Amdt. 172-123, 55 FR 52601, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-127, 59 FR 49133, Sept. 26, 1994; 62 FR 1217, Jan. 08, 1997]

§172.506 Providing and affixing placards: Highway.

(a) Each person offering a motor carrier a hazardous material for transportation by highway shall provide to the motor carrier the required placards for the material being offered prior to or at the same time the material is offered for transportation, unless the carrier's motor vehicle is already placarded for the material as required by this subpart.

(1) No motor carrier may transport a hazardous material in a motor vehicle, unless the placards required for the hazardous material are affixed thereto as required by this subpart.

(2) [Reserved]

(b) [Reserved]

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40679, Sept. 20, 1976]

§172.507 Special placarding provisions: Highway.

(a) Each motor vehicle used to transport a package of highway route controlled quantity Class 7 (radioactive) materials (see § 173.403 of this subchapter) must have the required RADIOACTIVE warning placard placed on a square background as described in § 172.527.

(b) A nurse tank, meeting the provisions of § 173.315(m) of this subchapter, is not required to be placarded on an end containing valves, fittings, regulators or gauges when those appurtenances prevent the markings and placard from being properly placed and visible.

[Amdt. 172-103, 51 FR 5971, Feb. 18, 1986, as amended by Amdt. 172-143, 60 FR 50305, Sept. 28, 1995]

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§172.508 Placarding and affixing placards: Rail.

(a) Each person offering a hazardous material for transportation by rail shall affix to the rail car containing the material, the placards specified by this subpart. Placards displayed on motor vehicles, transport containers, or portable tanks may be used to satisfy this requirement, if the placards otherwise conform to the provisions of this subpart.

(b) No rail carrier may accept a rail car containing a hazardous material for transportation unless the placards for the hazardous material are affixed thereto as required by this subpart.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-123, 55 FR 52601, Dec. 21, 1990]

§172.510 Special placarding provisions: Rail.

(a) *White square background.* The following must have the specified placards placed on a white square background, as described in § 172.527:

(1) Division 1.1 and 1.2 (explosive) materials which require EXPLOSIVES 1.1 or EXPLOSIVES 1.2 placards affixed to the rail car;

(2) Materials classed in Division 2.3 Hazard Zone A or 6.1 Packing Group I Hazard Zone A which require POISON GAS or POISON placards affixed to the rail car, including tank cars containing only a residue of the material; and

(3) Class DOT 113 tank cars used to transport a Division 2.1 (flammable gas) material, including tank cars containing only a residue of the material.

(b) *Chemical ammunition.* Each rail car containing Division 1.1 or 1.2 (explosive) ammunition which also meets the definition of a material poisonous by inhalation (see § 171.8 of this subchapter) must be placarded EXPLOSIVES 1.1 or EXPLOSIVES 1.2 and POISON GAS or POISON INHALATION HAZARD.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-103, 51 FR 5971, Feb. 18, 1986; Amdt. 172-110, 52 FR 29528, Aug. 10, 1987; Amdt. 172-111, 52 FR 36671, Sept. 30, 1987; Amdt. 172-123, 55 FR 52601, Dec. 21, 1990; 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-

248, 61 FR 28676, June 5, 1996; 62 FR 1217, Jan. 08, 1997]

§172.512 Freight containers and aircraft unit load devices.

(a) *Capacity of 640 cubic feet or more.* Each person who offers for transportation, and each person who loads and transports, a hazardous material in a freight container or aircraft unit load device having a capacity of 640 cubic feet or more shall affix to the freight container or aircraft unit load device the placards specified for the material in accordance with § 172.504. However:

(1) The placarding exception provided in § 172.504(c) applies to motor vehicles transporting freight containers and aircraft unit load devices,

(2) The placarding exception provided in § 172.504(c) applies to each freight container and aircraft unit load device being transported for delivery to a consignee immediately following an air or water shipment, and,

(3) Placarding is not required on a freight container or aircraft unit load device if it is only transported by air and is identified as containing a hazardous material in the manner provided in part 5, chapter 2, section 2.7, of the ICAO Technical Instructions.

(b) *Capacity less than 18 m³ (640 cubic feet).* Each person who offers for transportation by air, and each person who loads and transports by air, a hazardous material in a freight container or aircraft unit load device having a capacity of less than 18 m³ (640 cubic feet) shall affix one placard of the type specified by paragraph (a) of this section unless the freight container or aircraft unit load device:

(1) Is labeled in accordance with subpart E of this part, including § 172.406(e);

(2) Contains radioactive materials requiring the Radioactive Yellow III label and is placarded with one Radioactive placard and is labeled in accordance with subpart E of this part, including § 172.406(e); or,

(3) Is identified as containing a hazardous material in the manner provided in part 5, chapter 2, section 2.7, of the ICAO Technical Instructions.

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When hazardous materials are offered for transportation, not involving air transportation, in a freight container having a capacity of less than 640 cubic feet the freight container need not be placarded. However, if not placarded it must be labeled in accordance with subpart E of this part.

(c) Notwithstanding paragraphs (a) and (b) of this section, packages containing hazardous materials, other than ORM-D, offered for transportation by air in freight containers are subject to the inspection requirements of § 175.30 of this chapter.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40680, Sept. 20, 1976; Amdt. 172-87, 48 FR 53712, Nov. 29, 1983; 48 FR 55469, Dec. 13, 1983; Amdt. 172-103, 51 FR 5971, Feb. 18, 1986; Amdt. 172-111, 52 FR 36671, Sept. 30, 1987; Amdt. 172-123, 55 FR 52601, Dec. 21, 1990]

§172.514 Bulk packagings.

(a) Except as provided in paragraph (c) of this section, each person who offers for transportation a bulk packaging which contains a hazardous material, shall affix the placards specified for the material in §§ 172.504 and 172.505.

(b) Each bulk packaging that is required to be placarded when it contains a hazardous material, must remain placarded when it is emptied, unless it is-

(1) Sufficiently cleaned of residue and purged of vapors to remove any potential hazard; or

(2) Refilled, with a material requiring different placards or no placards, to such an extent that any residue remaining in the packaging is no longer hazardous.

(c) Exceptions. The following packagings may be placarded on only two opposite sides or, alternatively, may be labeled instead of placarded in accordance with subpart E of this part:

(1) A portable tank having a capacity of less than 3,785 L (1000 gallons);

(2) A DOT 106 or 110 multi-unit tank car tank;

(3) A bulk packaging other than a portable tank, cargo tank, or tank car (e.g., a bulk bag or box) with a volumetric capacity of less than 18 m³ (640 cubic feet); and

(4) An intermediate bulk container.

[Amdt. 172-123, 55 FR 52601, Dec. 21, 1990, as amended by Amdt. 172-136, 59 FR 38064, July 26, 1994; Amdt. 172-148, 61 FR 50255, Sept. 25, 1996]

§172.516 Visibility and display of placards.

(a) Each placard on a motor vehicle and each placard on a rail car must be readily visible from the direction it faces except from the direction of another motor vehicle or rail car to which the motor vehicle or rail car is coupled. This requirement may be met by the placards displayed on the freight containers or portable tanks loaded on a motor vehicle or rail car.

(b) The required placarding of the front of a motor vehicle may be on the front of a truck-tractor instead of or in addition to the placarding on the front of the cargo body to which a truck-tractor is attached.

(c) Each placard on a transport vehicle, bulk packaging, freight container or aircraft unit load device must-

(1) Be securely attached or affixed thereto or placed in a holder thereon. (See appendix C to this part.);

(2) Be located clear of appurtenances and devices such as ladders, pipes, doors, and tarpaulins;

(3) So far as practicable, be located so that dirt or water is not directed to it from the wheels of the transport vehicle;

(4) Be located away from any marking (such as advertising) that could substantially reduce its effectiveness, and in any case at least 3 inches (76.0 mm.) away from such marking;

(5) Have the words or identification number (when authorized) printed on it displayed horizontally, reading from left to right.

(6) Be maintained by the carrier in a condition so that the format, legibility, color, and visibility of the placard will not be substantially reduced due to damage, deterioration, or obscurement by dirt or other matter.

(7) Be affixed to a background of contrasting color, or must have a dotted or solid line outer border which contrasts with the background color.

(d) Recommended specifications for a placard holder are set forth in appendix C of this

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part. Except for a placard holder similar to that contained in appendix C to this part, the means used to attach a placard may not obscure any part of its surface other than the borders.

(e) A placard or placard holder may be hinged provided the required format, color, and legibility of the placard are maintained.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-101, 45 FR 74668, Nov. 10, 1980; Amdt. 172-123, 55 FR 52601, Dec. 21, 1990]

§172.519 General specifications for placards.

(a) *Strength and durability.* Placards must conform to the following:

(1) A placard may be made of any plastic, metal or other material capable of withstanding, without deterioration or a substantial reduction in effectiveness, a 30-day exposure to open weather conditions.

(2) A placard made of tagboard must be at least equal to that designated commercially as white tagboard. Tagboard must have a weight of at least 80 kg (176 pounds) per ream of 610 by 910 mm (24 by 36-inch) sheets, waterproofing materials included. In addition, each placard made of tagboard must be able to pass a 414 kPa (60 p.s.i.) Mullen test.

(3) Reflective or retroreflective materials may be used on a placard if the prescribed colors, strength and durability are maintained.

(b) *Design.*

(1) Except as provided in § 172.332 of this part, each placard must be as described in this subpart, and except for size and color, the printing, inner border and symbol must be as shown in §§ 172.521 through 172.560 of this subpart, as appropriate.

(2) The dotted line border shown on each placard is not part of the placard specification. However, a dotted or solid line outer border may be used when needed to indicate the full size of a placard that is part of a larger format or is on a background of a non-contrasting color.

(3) For other than Class 7 or the OXYGEN placard, text indicating a hazard (for example, "FLAMMABLE") is not required.

(4) For a placard corresponding to the primary hazard class of a material, the hazard

class or division number must be displayed in the lower corner of the placard. However, no hazard class or division number may be displayed on a placard corresponding to a subsidiary hazard of the material.

(c) *Size.*

(1) Each placard prescribed in this subpart must measure at least 273 mm (10.8 inches) on each side and must have a solid line inner border approximately 12.7 mm (0.5 inches) from each edge.

(2) Except as otherwise provided in this subpart, the hazard class or division number, as appropriate, must be shown in numerals measuring at least 41 mm (1.6 inches) in height.

(3) Except as otherwise provided in this subpart, when text indicating a hazard is displayed on a placard, the printing must be in letters measuring at least 41 mm (1.6 inches) in height.

(d) *Color.*

(1) The background color, symbol, text, numerals and inner border on a placard must be as specified in §§ 172.521 through 172.560 of this subpart, as appropriate.

(2) Black and any color on a placard must be able to withstand, without substantial change-

(i) A 72-hour fadeometer test (for a description of equipment designed for this purpose, see ASTM G 23-69 or ASTM G 26-70); and

(ii) A 30-day exposure to open weather.

(3) Upon visual examination, a color on a placard must fall within the color tolerances displayed on the appropriate Hazardous Materials Label and Placard Color Tolerance Chart (see § 172.407(d) (4)).

(4) The placard color must extend to the inner border and may extend to the edge of the placard in the area designated on each placard except the color on the CORROSIVE and RADIOACTIVE placards (black and yellow, respectively) must extend only to the inner border.

(e) *Form identification.* A placard may contain form identification information, including the name of its maker, provided that information is printed outside of the solid line inner border in no larger than 10-point type.

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(f) *Exceptions.* For a shipment under the provisions of §§ 171.11, 171.12 or § 171.12a of this subchapter, a placard conforming to specifications in the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, respectively, may be used in place of a corresponding placard which conforms to the requirements of this subpart.

(g) *Trefoil symbol.* The trefoil symbol on the RADIOACTIVE placard must meet the appropriate specification in Appendix B of this part.

[Amdt. 172-123, 55 FR 52601, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995]

§172.521 DANGEROUS placard.

(a) Except for size and color, the DANGEROUS placard must be as follows:



(b) In addition to meeting the requirements of § 172.519, and appendix B to this part, the DANGEROUS placard must have a red upper and lower triangle. The placard center area and 1/2-inch (12.7 mm.) border must be white. The inscription must be black with the 1/8-inch (3.2 mm.) border marker in the white area at each end of the inscription red.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 76, as amended by Amdt. 172-29A, 41 FR 40680, Sept. 20, 1976]

§172.522 EXPLOSIVES 1.1, EXPLOSIVES 1.2 and EXPLOSIVES 1.3 placards.

(a) Except for size and color, the EXPLOSIVES 1.1, EXPLOSIVES 1.2 and EXPLOSIVES 1.3 placards must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the EXPLOSIVES 1.1, EXPLOSIVES 1.2, and EXPLOSIVES 1.3 placards must be orange. The "*" shall be replaced with the appropriate division number and, when required, appropriate compatibility group letter. The symbol, text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991]

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§172.523 EXPLOSIVES 1.4 placard.

(a) Except for size and color, the EXPLOSIVES 1.4 placard must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the EXPLOSIVES 1.4 placard must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.4, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991]

§172.524 EXPLOSIVES 1.5 placard.

(a) Except for size and color, the EXPLOSIVES 1.5 placard must be as follows:



(b) In addition to complying with the § 172.519 of this subpart, the background color on EXPLOSIVES 1.5 placard must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.5, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991]

§172.525 EXPLOSIVES 1.6 placard.

(a) Except for size and color the EXPLOSIVES 1.6 placard must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the EXPLOSIVES 1.6 placard must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.6, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52603, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993]

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§172.527 Background requirements for certain placards.

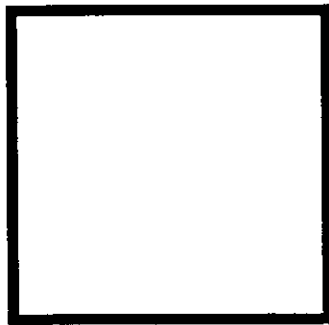
(a) Except for size and color, the square background required by § 172.510(a) for cer-

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tain placards on rail cars, and § 172.507 for placards on motor vehicles containing a package of highway route controlled quantity radioactive materials, must be as follows:



(b) In addition to meeting the requirements of § 172.519 for minimum durability and strength, the square background must consist of a white square measuring 14 1/4 inches (362.0 mm.) on each side surrounded by a black border extending to 15 1/4 inches (387.0 mm.) on each side.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-64, 46 FR 5316, Jan. 19, 1981; Amdt. 172-78, 48 FR 10226, Mar. 10, 1983]

§172.528 NON-FLAMMABLE GAS placard.

(a) Except for size and color, the NON-FLAMMABLE GAS placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the NON-FLAMMABLE GAS placard must be green. The letters in both words must be at least 38 mm (1.5 inches) high. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66261, Dec. 20, 1991]

§172.530 OXYGEN placard.

(a) Except for size and color, the OXYGEN placard must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the OXYGEN placard must be yellow. The sym-

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bol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§172.532 **FLAMMABLE GAS placard.**

(a) Except for size and color, the FLAMMABLE GAS placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the FLAMMABLE GAS placard must be red. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§172.536 [Reserved]

§172.540 **POISON GAS placard.**

(a) Except for size and color, the POISON GAS placard must be as follows:



(b) In addition to complying with § 172.519, the background on the POISON GAS placard and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 65 mm (2-5/8 inches) above the horizontal center line. The text, class number, and inner border must be black.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994; 62 FR 1217, Jan. 08, 1997; 62 FR 39408, July 22, 1997]

§172.542 **FLAMMABLE placard.**

(a) Except for size and color, the FLAMMABLE placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the FLAMMABLE

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placard must be red. The symbol, text, class number and inner border must be white.

(c) The word "GASOLINE" may be used in place of the word "FLAMMABLE" on a placard that is displayed on a cargo tank or a portable tank being used to transport gasoline by highway. The word "GASOLINE" must be shown in white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§172.544 COMBUSTIBLE placard.

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



(b) In addition to complying with § 172.519, the background color on the COMBUSTIBLE placard must be red. The symbol, text, class number and inner border must be white. On a COMBUSTIBLE placard with a white bottom as prescribed by § 172.332(c)(4), the class number must be red or black.

(c) The words "FUEL OIL" may be used in place of the word "COMBUSTIBLE" on a placard that is displayed on a cargo tank or portable tank being used to transport by highway fuel oil that is not classed as a flammable liquid. The words "FUEL OIL" must be white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

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§172.546 FLAMMABLE SOLID placard.

(a) Except for size and color, the FLAMMABLE SOLID placard must be as follows:



(b) In addition to complying with § 172.519, the background on the FLAMMABLE SOLID placard must be white with seven vertical red stripes. The stripes must be equally spaced, with one red stripe placed in the center of the label. Each red stripe and each white space between two red stripes must be 25 mm (1.0 inches) wide. The letters in the word "SOLID" must be at least 38.1 mm (1.5 inches) high. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§172.547 SPONTANEOUSLY COMBUSTIBLE placard.

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

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(b) In addition to complying with § 172.519, the background color on the SPONTANEOUSLY COMBUSTIBLE placard must be red in the lower half and white in upper half. The letters in the word "SPONTANEOUSLY" must be at least 12 mm (0.5 inch) high. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§172.548 DANGEROUS WHEN WET placard.

(a) Except for size and color, the DANGEROUS WHEN WET placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the DANGEROUS WHEN WET placard must be blue. The letters in the words "WHEN WET" must be at least 25 mm (1.0 inches) high. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§172.550 OXIDIZER placard.

(a) Except for size and color, the OXIDIZER placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the OXIDIZER placard must be yellow. The symbol, text, division number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§172.552 ORGANIC PEROXIDE placard.

(a) Except for size and color, the ORGANIC PEROXIDE placard must be as follows:

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(b) In addition to complying with § 172.519, the background color on the ORGANIC PEROXIDE placard must be yellow. The symbol, text, division number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§172.553 KEEP AWAY FROM FOOD placard.

(a) Except for size and color, the KEEP AWAY FROM FOOD placard must be as follows:



(b) In addition to complying with § 172.519, the background on the KEEP AWAY FROM FOOD placard must be white. The size of the lettering below the word "HARMFUL" must

be proportional to that shown. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§172.554 POISON placard.

(a) Except for size and color, the POISON placard must be as follows:



(b) In addition to complying with § 172.519, the background on the POISON placard must be white. The symbol, text, class number and inner border must be black. The word "TOXIC" may be used in lieu of the word "POISON".

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§172.555 POISON INHALATION HAZARD placard.

(a) Except for size and color, the POISON INHALATION HAZARD placard must be as follows:

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(b) In addition to complying with § 172.519, the background on the POISON INHALATION HAZARD placard and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 65 mm (2-5/8 inches) above the horizontal center line. The text, class number, and inner border must be black.

[62 FR 1217, January 08, 1997; 62 FR 39409, July 22, 1997]

§172.556 RADIOACTIVE placard.

(a) Except for size and color, the RADIOACTIVE placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the RADIOACTIVE placard must be white in the lower portion with a yellow triangle in the upper portion. The base of the yellow triangle must be 29 mm ± 5 mm (1.1 inches ± 0.2 inches) above the placard horizontal center line. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993]

§172.558 CORROSIVE placard.

(a) Except for size and color, the CORROSIVE placard must be as follows:



(b) In addition to complying with § 172.519, the background color on the CORROSIVE placard must be black in the lower portion with a white triangle in the upper portion. The base of the white triangle must be 38 mm ± 5 mm (1.5 inches ± 0.2 inches) above the placard horizontal center line. The text and class number must be white. The symbol and inner border must be black.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991]

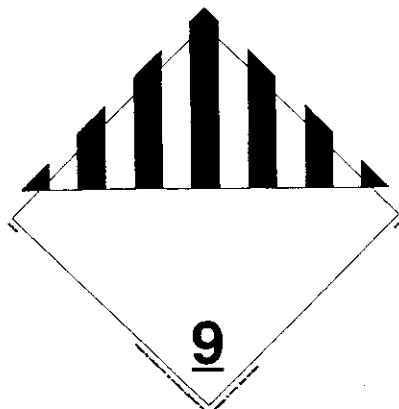
§172.560 CLASS 9 placard.

(a) Except for size and color the CLASS 9 (miscellaneous hazardous materials) placard must be as follows:

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(b) In addition to conformance with § 172.519, the background on the CLASS 9 placard must be white with seven black vertical stripes on the top half extending from the top of the placard to one inch above the horizontal centerline. The black vertical stripes must be spaced so that, visually, they appear equal in width to the six white spaces between them. The space below the vertical lines must be white with the class number 9 underlined and centered at the bottom.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991, as amended at 57 FR 45460, Oct. 1, 1992]

Subpart G—Emergency Response Information

§172.600 Applicability and general requirements.

(a) *Scope.* Except as provided in paragraph (d) of this section, this subpart prescribes requirements for providing and maintaining emergency response information during transportation and at facilities where hazardous materials are loaded for transportation, stored incidental to transportation or otherwise handled during any phase of transportation.

(b) *Applicability.* This subpart applies to persons who offer for transportation, accept for transportation, transfer or otherwise handle hazardous materials during transportation.

(c) *General requirements.* No person to whom this subpart applies may offer for transportation, accept for transportation, transfer, store or otherwise handle during transportation a hazardous material unless:

(1) Emergency response information conforming to this subpart is immediately available for use at all times the hazardous material is present; and

(2) Emergency response information, including the emergency response telephone number, required by this subpart is immediately available to any person who, as a representative of a Federal, State or local government agency, responds to an incident involving a hazardous material, or is conducting an investigation which involves a hazardous material.

(d) *Exceptions.* The requirements of this subpart do not apply to hazardous material which is excepted from the shipping paper requirements of this subchapter or a material properly classified as an ORM-D.

[Amdt. 172-116, 54 FR 27145, June 27, 1989; 54 FR 28750, July 5, 1989, as amended at 55 FR 33712, Aug. 17, 1990; 172-127, 59 FR 49133, Sept. 26, 1994; Amdt. 172-149, 61 FR 27173, May 30, 1996]

§172.602 Emergency response information.

(a) *Information required.* For purposes of this subpart, the term "emergency response information" means information that can be used in the mitigation of an incident involving hazardous materials and, as a minimum, must contain the following information:

(1) The basic description and technical name of the hazardous material as required by §§ 172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate;

(2) Immediate hazards to health;

(3) Risks of fire or explosion;

(4) Immediate precautions to be taken in the event of an accident or incident;

(5) Immediate methods for handling fires;

(6) Initial methods for handling spills or leaks in the absence of fire; and

(7) Preliminary first aid measures.

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(b) *Form of information.* The information required for a hazardous material by paragraph (a) of this section must be:

- (1) Printed legibly in English;
- (2) Available for use away from the package containing the hazardous material; and
- (3) Presented—
 - (i) On a shipping paper;
 - (ii) In a document, other than a shipping paper, that includes both the basic description and technical name of the hazardous material as required by §§ 172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate, and the emergency response information required by this subpart (e.g., a material safety data sheet); or
 - (iii) Related to the information on a shipping paper, a written notification to pilot-in-command, or a dangerous cargo manifest, in a separate document (e.g., an emergency response guidance document), in a manner that cross-references the description of the hazardous material on the shipping paper with the emergency response information contained in the document. Aboard aircraft, the ICAO "Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods" and, aboard vessels, the IMO "Emergency Procedures for Ships Carrying Dangerous Goods", or equivalent documents, may be used to satisfy the requirements of this section for a separate document.

(c) *Maintenance of information.* Emergency response information shall be maintained as follows:

- (1) *Carriers.* Each carrier who transports a hazardous material shall maintain the information specified in paragraph (a) of this section and § 172.606 of this part in the same manner as prescribed for shipping papers, except that the information must be maintained in the same manner aboard aircraft as the notification of pilot-in-command, and aboard vessels in the same manner as the dangerous cargo manifest. This information must be immediately accessible to train crew personnel, drivers of motor vehicles, flight crew members, and bridge personnel on vessels for use in the event of incidents involving hazardous materials.

(2) *Facility operators.* Each operator of a facility where a hazardous material is received, stored or handled during transportation, shall maintain the information required by paragraph (a) of this section whenever the hazardous material is present. This information must be in a location that is immediately accessible to facility personnel in the event of an incident involving the hazardous material.

[Amdt. 172-116, 54 FR 27146, June 27, 1989; 54 FR 28750, July 5, 1989, as amended by Amdt. 172-116, 55 FR 875, Jan. 10, 1990; 62 FR 1217, Jan. 08, 1997]

§172.604 Emergency response telephone number.

(a) A person who offers a hazardous material for transportation must provide a 24-hour emergency response telephone number (including the area code or international access code) for use in the event of an emergency involving the hazardous material. The telephone number must be—

- (1) Monitored at all times the hazardous material is in transportation, including storage incidental to transportation;
- (2) The number of a person who is either knowledgeable of the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information; and

(3) Entered on a shipping paper, as follows:

- (i) Immediately following the description of the hazardous material required by subpart C of this part; or
- (ii) Entered once on the shipping paper in a clearly visible location. This provision may be used only if the telephone number applies to each hazardous material entered on the shipping paper, and if it is indicated that the telephone number is for emergency response information (for example: "EMERGENCY CONTACT: * * *").

(b) The telephone number required by paragraph (a) of this section must be the number of the person offering the hazardous material for transportation or the number of an agency or organization capable of, and accepting responsibility for, providing the detailed information concerning the hazardous material. A

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person offering a hazardous material for transportation who lists the telephone number of an agency or organization shall ensure that agency or organization has received current information on the material, as required by paragraph (a)(2) of this section before it is offered for transportation.

(c) The requirements of this section do not apply to—

(1) Hazardous materials that are offered for transportation under the provisions applicable to limited quantities; and

(2) Materials properly described under the shipping names "Engines, internal combustion", "Battery powered equipment", "Battery powered vehicle", "Wheelchair, electric", "Carbon dioxide, solid", "Dry ice", "Fish meal, stabilized", "Fish scrap, stabilized", "Castor bean", "Castor meal", "Castor flake", "Castor pomace", or "Refrigerating machine".

[Amdt. 172-116, 54 FR 27145, June 27, 1989, as amended at 55 FR 33713, Aug. 17, 1990; Amdt. 172-127, 59 FR 49133, Sept. 26, 1994; Amdt. 172-149, 61 FR 27173, May 30, 1996]

§172.606 Carrier information contact.

Each carrier who transports or accepts for transportation a hazardous material for which a shipping paper is required—

(a) Shall instruct the operator of a motor vehicle, train, aircraft, or vessel to contact the carrier (e.g., by telephone or mobile radio) in the event of an incident involving the hazardous material.

(b) For transportation by highway, if a transport vehicle, (e.g., a semi-trailer or freight container-on-chassis) contains hazardous material for which a shipping paper is required and the vehicle is separated from its motive power and parked at a location other than a consignee's, consignor's, or carrier's facility, the carrier shall—

(1) Comply with the emergency response information requirements for facility operators specified in § 172.602(c)(2);

(2) Mark the transport vehicle with the telephone number of the motor carrier on the front of the transport vehicle near the brake hose and electrical connections; or

(3) Have the shipping paper and emergency response information readily available on the transport vehicle.

(c) The requirements specified in paragraph (b) of this section do not apply to an unattended motor vehicle separated from its motive power when the motor vehicle is marked on an orange panel, a placard, or a plain white square-on-point configuration with the identification number of each hazardous material loaded therein, and the marking or placard is visible on the outside of the motor vehicle.

[62 FR 1234, January 08, 1997; 62 FR 39409, July 22, 1997]

Subpart H—Training

SOURCE: Amdt. 172-126, 57 FR 20952, May 15, 1992, unless otherwise noted.

§172.700 Purpose and scope.

(a) *Purpose.* This subpart prescribes requirements for training hazmat employees.

(b) *Scope.* Training as used in this subpart means a systematic program that ensures a hazmat employee has familiarity with the general provisions of this subchapter, is able to recognize and identify hazardous materials, has knowledge of specific requirements of this subchapter applicable to functions performed by the employee, and has knowledge of emergency response information, self-protection measures and accident prevention methods and procedures (see § 172.704).

(c) *Modal-specific training requirements.* Additional training requirements for the individual modes of transportation are prescribed in parts 174, 175, 176, and 177 of this subchapter.

§172.701 Federal-State relationship.

This subpart and the parts referenced in § 172.700(c) prescribe minimum training requirements for the transportation of hazardous materials. For motor vehicle drivers, however, a State may impose more stringent training requirements only if those requirements—

(a) Do not conflict with the training requirements in this subpart and in part 177 of this subchapter; and

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(b) Apply only to drivers domiciled in that State.

§172.702 Applicability and responsibility for training and testing.

(a) A hazmat employer shall ensure that each of its hazmat employees is trained in accordance with the requirements prescribed in this subpart.

(b) Except as provided in § 172.704(c)(1), a hazmat employee who performs any function subject to the requirements of this subchapter may not perform that function unless instructed in the requirements of this subchapter that apply to that function. It is the duty of each hazmat employer to comply with the applicable requirements of this subchapter and to thoroughly instruct each hazmat employee in relation thereto.

(c) Training may be provided by the hazmat employer or other public or private sources.

(d) A hazmat employer shall ensure that each of its hazmat employees is tested by appropriate means on the training subjects covered in § 172.704.

[Amdt. 172-126, 57 FR 20952, May 15, 1992; 57 FR 22182, May 27, 1992, as amended by Amdt. 172-149, 61 FR 27173, May 30, 1996]

§172.704 Training requirements.

(a) Hazmat employee training shall include the following:

(1) *General awareness/familiarization training.* Each hazmat employee shall be provided general awareness/familiarization training designed to provide familiarity with the requirements of this subchapter, and to enable the employee to recognize and identify hazardous materials consistent with the hazard communication standards of this subchapter.

(2) *Function-specific training.*

(i) Each hazmat employee shall be provided function-specific training concerning requirements of this subchapter, or exemptions issued under subchapter A of this chapter, which are specifically applicable to the functions the employee performs.

(ii) As an alternative to function-specific training on the requirements of this subchapter, training relating to the requirements of

the ICAO Technical Instructions and the IMDG Code may be provided to the extent such training addresses functions authorized by §§ 171.11 and 171.12 of this subchapter.

(3) *Safety training.* Each hazmat employee shall receive safety training concerning—

(i) Emergency response information required by subpart G of part 172;

(ii) Measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed in the work place, including specific measures the hazmat employer has implemented to protect employees from exposure; and

(iii) Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.

(b) *OSHA or EPA Training.* Training conducted by employers to comply with the hazard communication programs required by the Occupational Safety and Health Administration (OSHA) of the Department of Labor (29 CFR 1910.120) or the Environmental Protection Agency (EPA) (40 CFR 311.1), to the extent that training addresses the training specified in paragraph (a) of this section, may be used to satisfy the training requirements in paragraph (a) of this section, in order to avoid unnecessary duplication of training.

(c) *Initial and recurrent training*

(1) *Initial training.* A new hazmat employee, or a hazmat employee who changes job functions may perform those functions prior to the completion of training provided—

(i) The employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee; and

(ii) The training is completed within 90 days after employment or a change in job function.

(2) *Recurrent training.* A hazmat employee shall receive the training required by this subpart at least once every three years.

(3) *Relevant Training.* Relevant training received from a previous employer or other source may be used to satisfy the requirements of this subpart provided a current record of training is obtained from hazmat employees' previous employer.

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(4) *Compliance.* Each hazmat employer is responsible for compliance with the requirements of this subchapter regardless of whether the training required by this subpart has been completed.

(d) *Recordkeeping.* A record of current training, inclusive of the preceding three years, in accordance with this section shall be created and retained by each hazmat employer for as long as that employee is employed by that employer as a hazmat employee and for 90 days thereafter. The record shall include:

- (1) The hazmat employee's name;
- (2) The most recent training completion date of the hazmat employee's training;
- (3) A description, copy, or the location of the training materials used to meet the requirements in paragraph (a) of this section;
- (4) The name and address of the person providing the training; and
- (5) Certification that the hazmat employee has been trained and tested, as required by this subpart.

(e) *Limitation.* A hazmat employee who repairs, modifies, reconditions, or tests packages as qualified for use in the transportation of hazardous materials, and who does not perform any other function subject to the requirements of this subchapter, is not subject to the safety training requirement of paragraph (a)(3) of this section.

[Amdt. 172-126, 57 FR 20952, May 15, 1992, as amended by Amdt. 172-126, 58 FR 5851, Jan. 22,

1993; Amdt. 172-145, 60 FR 49110, Sept. 21, 1995; Amdt. 172-149, 61 FR 27173, May 30, 1996]

Subpart I—[Removed]

Removed by Direct Final rule published in the Federal Register dated September 2, 1997. No confirmation of the effective date was published as of October 1, 1997.

APPENDIX A TO PART 172—OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION COLOR TOLERANCE CHARTS AND TABLES

The following are Munsell notations and Commission Internationale de L'Eclairage (CIE) coordinates which describe the Office of Hazardous Materials Transportation Label and Placard Color Tolerance Charts in Tables 1 and 2, and the CIE coordinates for the color tolerances specified in Table 3. Central colors and tolerances described in Table 2 approximate those described in Table 1 while allowing for differences in production methods and materials used to manufacture labels and placards surfaced with printing inks. Primarily, the color charts based on Table 1 are for label or placard colors applied as opaque coatings such as paint, enamel or plastic, whereas color charts based on Table 2 are intended for use with labels and placards surfaced only with inks.

For labels printed directly on packaging surfaces, Table 3 may be used, although compliance with either Table 1 or Table 2 is sufficient. However, if visual reference indicates that the colors of labels printed directly on package surfaces are outside the Table 1 or 2 tolerances, a spectrophotometer or other instrumentation may be required to insure compliance with Table 3.

TABLE 1—SPECIFICATIONS FOR COLOR TOLERANCE CHARTS FOR USE WITH LABELS AND PLACARDS SURFACED WITH PAINT, LACQUER, ENAMEL, PLASTIC, OTHER OPAQUE COATINGS, OR INK¹

Color	Munsell notations	CIE data for source C		
		Y	x	y
Red:				
Central color.....	7.5R 4.0/14.....	12.00	.5959	3269
Orange.....	6.5R 4.0/14.....	12.00	.6037	3389
Purple and vivid.....	6.5R 4.0/14.....	12.00	.5869	3184
Grayish.....	7.5R 4.0/12.....	12.00	.5603	3321
Vivid.....	7.5R 4.0/16.....	12.00	.6260	3192
Light.....	7.5R 4.5/14.....	15.57	.5775	3320
Dark.....	7.5R 3.5/14.....	09.00	.6226	3141
Orange:				
Central color.....	5.OYR 6.0/15.....	30.05	.5510	4214
Yellow and Grayish.....	6.25YR 6.0/15.....	30.05	.5452	4329
Red and vivid.....	3.75YR 6.0/15.....	30.05	.5552	4091
Grayish.....	5.OYR 6.0/13.....	30.05	.5311	4154
Vivid.....	5.OYR 6.0/16.....	30.05	.5597	4239

NOTES