

(b) *Display of hazard class on labels.* The appropriate hazard class or division number must be displayed in the lower corner of a primary hazard label and a subsidiary hazard label. A subsidiary label meeting the specifications of this section which were in effect on September 30, 2001, such as, a label without the hazard class or division number displayed in the lower corner of the label) may continue to be used as a subsidiary label in domestic transportation by rail or highway until October 1, 2005, provided the color tolerances are maintained and are in accordance with the display requirements in this subchapter.

(c) *Cargo Aircraft Only label.* Each person who offers for transportation or transports by aircraft a package containing a hazardous material which is authorized on cargo aircraft only shall label the package with a CARGO AIRCRAFT ONLY label specified in §172.448 of this subpart.

(d) *Class 7 (Radioactive) Materials.* Except as otherwise provided in this paragraph, each package containing a Class 7 material that also meets the definition of one or more additional hazard classes must be labeled as a Class 7 material as required by §172.403 and for each additional hazard.

(1) For a package containing a Class 7 material that also meets the definition of one or more additional hazard classes, whether or not the material satisfies §173.4(a)(1)(iv) of this subchapter, a subsidiary label is not required on the package if the material conforms to the remaining criteria in §173.4 of this subchapter.

(2) Each package or overpack containing fissile material, other than fissile-excepted material (see §173.453 of this subchapter) must bear two FISSILE labels, affixed to opposite sides of the package or overpack, which conforms to the figure shown in §172.441; such labels, where applicable, must be affixed adjacent to the labels for radioactive materials.

(e) *Class 1 (explosive) Materials.* In addition to the label specified in column 6 of the §172.101 table, each package of Class 1 material that also meets the definition for:

(1) Division 6.1, Packing Groups I or II, shall be labeled POISON or POISON

INHALATION HAZARD, as appropriate.

(2) Class 7, shall be labeled in accordance with §172.403 of this subpart.

(f) *Division 2.2 materials.* In addition to the label specified in column 6 of the §172.101 table, each package of Division 2.2 material 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; 66 FR 33425, June 21, 2001; 69 FR 3668, Jan. 26, 2004]

#### § 172.403 Class 7 (radioactive) material.

(a) Unless excepted from labeling by §§173.421 through 173.427 of this subchapter, 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 <sup>1</sup>
0 <sup>2</sup> .....	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).

<sup>1</sup> Any package containing a “highway route controlled quantity” (§ 173.403 of this subchapter) must be labelled as RADIOACTIVE YELLOW-III.

<sup>2</sup> 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) *FISSILE* label. For packages required in §172.402 to bear a FISSILE label, each such label must be completed with the criticality safety index (CSI) assigned in the NRC or DOE package design approval, or in the certificate of approval for special arrangement or the certificate of approval for the package design issued by the Competent Authority for import and export shipments. For overpacks and freight containers required in §172.402 to bear a FISSILE label, the CSI on the label must be the sum of the CSIs for all of the packages contained in the overpack or freight container.

(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*. Except for LSA-1 material, the names 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., <sup>99</sup>Mo, <sup>60</sup>Co, 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(g) of this subchapter. For LSA-I material, the term “LSA-I” may be

used in place of the names of the radionuclides.

(2) *Activity*. The activity in the package must be expressed in appropriate SI units (e.g., Becquerels (Bq), Terabecquerels (TBq), etc.). The activity may also be stated in appropriate customary units (Curies (Ci), millicuries (mCi), microCuries (uCi), etc.) in parentheses following the SI units. Abbreviations are authorized. Except for plutonium-239 and plutonium-241, the weight in grams or kilograms of fissile radionuclides may be inserted instead of activity units. For plutonium-239 and plutonium-241, the weight in grams of fissile radionuclides may be inserted in addition to the activity units.

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

(h) When one or more packages of Class 7 (radioactive) material are placed within an overpack, the overpack must be labeled as prescribed in this section, except as follows:

(1) The “contents” entry on the label may state “mixed” in place of the names of the radionuclides unless each inside package contains the same radionuclide(s).

(2) The “activity” entry on the label must be determined by adding together the number of becquerels of the Class 7 (radioactive) materials packages contained therein.

(3) For an overpack, the transport index (TI) must be determined by adding together the transport indices of the Class 7 (radioactive) materials packages contained therein, except that for a rigid overpack, the transport

index (TI) may alternatively be determined by direct measurement as prescribed in §173.403 of this subchapter under the definition for “transport index,” taken by the person initially offering the packages contained within the overpack for shipment.

(4) The category of Class 7 label for the overpack must be determined from the table in §172.403(c) using the TI derived according to paragraph (h)(3) of this section, and the maximum radiation level on the surface of the overpack.

(5) The category of the Class 7 label of the overpack, and not that of any of the packages contained therein, must be used in accordance with Table 1 of §172.504(e) to determine when the transport vehicle must be placarded.

(6) For fissile material, the criticality safety index which must be entered on the overpack FISSILE label is the sum of the criticality safety indices of the individual packages in the overpack, as stated in the certificate of approval for the package design issued by the NRC or the U.S. Competent Authority.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.403, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

#### § 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.

(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.

(c) For a package containing a Division 6.1, Packing Group III material, the POISON label specified in §172.430 may be modified to display the text “PG III” instead of “POISON” or “TOXIC” below the mid line of the label. Also see §172.313(d).

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; 64 FR 10776, Mar. 5, 1999; 66 FR 33425, June 21, 2001]

#### § 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