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(d) Any foreign-made packaging that meets the standards in ''IAEA Regulations for the Safe Transport of Radioactive Material No. TS-R-1'' (IBR, see §171.7 of this subchapter) and bears the marking ''Type A''. Such packagings may be used for domestic and export shipments of Class 7 (radioactive) materials provided the offeror obtains the applicable documentation of tests and engineering evaluations and maintains the documentation on file in accordance with paragraph (a) of this section. These packagings must conform with requirements of the country of origin (as indicated by the packaging marking) and the IAEA regulations applicable to Type A packagings.

[Amdt. 173–244, 60 FR 50307, Sept. 28, 1995, as amended at 67 FR 61014, Sept. 27, 2002; 68 FR 75742, Dec. 31, 2003; 69 FR 3673, Jan. 26, 2004; 69 FR 55117, Sept. 13, 2004]

§173.416 Authorized Type B packages.

Each of the following packages is authorized for shipment of quantities exceeding A_1 or A_2, as appropriate:

(a) Any Type B(U) or Type B(M) packaging that meets the applicable requirements of 10 CFR part 71 and that has been approved by the U.S. Nuclear Regulatory Commission may be shipped pursuant to §173.471.

(b) Any Type B(U) or B(M) packaging that meets the applicable requirements in ''IAEA Regulations for the Safe Transport of Radioactive Material, No. TS-R-1'' (IBR, see §171.7 of this subchapter) and for which the foreign Competent Authority Certificate has been revalidated by DOT pursuant to §173.473. These packagings are authorized only for export and import shipments.

(c) Continued use of an existing Type B packaging constructed to DOT Specification 6M, 20WC, or 21WC is authorized until October 1, 2008 if it conforms in all aspects to the requirements of this subchapter in effect on October 1, 2003.

[69 FR 3673, Jan. 26, 2004]

§173.417 Authorized fissile materials packages.

(a) Except as provided in §173.453, fissile materials containing not more than A_1 or A_2 as appropriate, must be packaged in one of the following packagings:

(1)(i) Any packaging listed in §173.415, limited to the Class 7 (radioactive) materials specified in 10 CFR part 71, subpart C;

(ii) Any Type AF, Type B(U)F, or Type B(M)F packaging that meets the applicable standards for fissile material packages in 10 CFR part 71; or

(iii) Any Type AF, Type B(U)F, or Type B(M)F packaging that meets the applicable requirements for fissile material packages in Section VI of the International Atomic Energy Agency ''Regulations for the Safe Transport of Radioactive Material, No. TS-R-1 (IBR, see §171.7 of this subchapter),'' and for which the foreign Competent Authority certificate has been revalidated by the U.S. Competent Authority, in accordance with §173.473. These packages are authorized only for export and import shipments.

(2) A residual ''heel'' of enriched solid uranium hexafluoride may be transported without a protective overpack in any metal cylinder that meets both the requirements of §173.415 and §178.350 of this subchapter for Specification 7A Type A packaging, and the requirements of §173.420 for packagings containing greater than 0.1 kg of uranium hexafluoride. Any such shipment must be made in accordance with Table 2, as follows:

TABLE 2—ALLOWABLE CONTENT OF URANIUM HEXAFLUORIDE (UF_6 "HEEL" IN A SPECIFICATION 7A CYLINDER)

Maximum cylinder diameter		Cylinder volume		Maximum Uranium 235-enrichment (weight) percent	Maximum "Heel" weight per cylinder			
					UF_6		Uranium-235	
Centimeters	Inches	Liters	Cubic feet		kg	lb	kg	lb
12.7	5	8.8	0.311	100.0	0.045	0.1	0.031	0.07
20.3	8	39.0	1.359	12.5	0.227	0.5	0.019	0.04
30.5	12	68.0	2.410	5.0	0.454	1.0	0.015	0.03
76.0	30	725.0	25.64	5.0	11.3	25.0	0.383	0.84
122.0	48	3,084.0	[1] 108.9	4.5	22.7	50.0	0.690	1.52
122.0	48	4,041.0	[2] 142.7	4.5	22.7	50.0	0.690	1.52

[1] 10 ton.
[2] 14 ton

(3) DOT Specification 20PF–1, 20PF–2, or 20PF–3 (see §178.356 of this subchapter), or Specification 21PF–1A, 21PF–1B, or 21PF–2 (see §178.358 of this subchapter) phenolic-foam insulated overpack with snug fittings inner metal cylinders, meeting all requirements of §§173.24, 173.410, 173.412, and 173.420 and the following:

(i) Handling procedures and packaging criteria must be in accordance with United States Enrichment Corporation Report No. USEC–651 or ANSI N14.1 (IBR, see §171.7 of this subchapter); and

(ii) Quantities of uranium hexafluoride are authorized as shown in Table 3 of this section, with each package assigned a minimum criticality safety index as also shown.

(b) Fissile Class 7 (radioactive) materials with radioactive content exceeding A_1 or A_2 must be packaged in one of the following packagings:

(1) Type B(U), or Type B(M) packaging that meets the standards for packaging of fissile materials in 10 CFR part 71, and is approved by the U.S. Nuclear Regulatory Commission and used in accordance with §173.471;

(2) Type B(U) or Type B(M) packaging that also meets the applicable requirements for fissile material packaging in Section VI of the International Atomic Energy Agency ''Regulations for the Safe Transport of Radioactive Material, No. TS-R-1,'' and for which the foreign Competent Authority certificate has been revalidated by the U.S. Competent Authority in accordance with §173.473. These packagings are authorized only for import and export shipments; or

(3) DOT Specifications 20PF–1, 20PF–2, or 20PF–3 (see §178.356 of this subchapter), for DOT Specifications 21PF–1A or 21PF–1B (see §178.356 of this subchapter) phenolic-foam insulated overpack with snug fitting inner metal cylinders, meeting all requirements of §§173.24, 173.410, and 173.412, and the following:

(i) Handling procedures and packaging criteria must be in accordance with United States Enrichment Corporation Report No. USEC–651 or ANSI N14.1; and

(ii) Quantities of uranium hexafluoride are authorized as shown in Table 3, with each package assigned a minimum criticality safety index as also shown:

TABLE 3—AUTHORIZED QUANTITIES OF URANIUM HEXAFLUORIDE

Protective overpack specification number	Maximum inner cyclinder diameter		Maximum weight of UF6 contents		Maximum U–235 enrichment (weight/percent)	Minimum criticality safety index
	Centimeters	Inches	Kilograms	Pounds		
20PF–1	12.7	5	25	55	100.0	0.1
20PF–2	20.3	8	116	255	12.5	0.4
20PF–3	30.5	12	209	460	5.0	1.1
21PF–1A[1] or 21PF–1B[1,2]	[2]76.0	[2]30	2,250	4,950	5.0	5.0
21PF–1A[1] or 21PF–1B[1]	[3]76.0	[3]30	2,282	5,020	5.0	5.0
21PF–2[1]	[2]76.0	[2]30	2,250	4,950	5.0	5.0

TABLE 3—AUTHORIZED QUANTITIES OF URANIUM HEXAFLUORIDE—Continued

Protective overpack specification number	Maximum inner cyclinder diameter		Maximum weight of UF6 contents		Maximum U–235 enrichment (weight/percent)	Minimum criticality safety index
	Centimeters	Inches	Kilograms	Pounds		
21PF–2[1]	[3]76.0	[3]30	2,282	5,020	5.0	5.0

[1] For 76 cm (30 in) cylinders, the maximum H/U atomic ratio is 0.088.
[2] Model 30A inner cylinder (reference USEC–651).
[3] Model 30B inner cylinder (reference USEC–651).

(c) Continued use of an existing fissile material packaging constructed to DOT Specification 6L, 6M, or 1A2, is authorized until October 1, 2008 if it conforms in all respects to the requirements of this subchapter in effect on October 1, 2003.

[69 FR 3673, Jan. 26, 2004; 69 FR 55118, Sept. 13, 2004]

§ 173.418 Authorized packages—pyrophoric Class 7 (radioactive) materials.

Pyrophoric Class 7 (radioactive) materials, as referenced in the § 172.101 table of this subchapter, in quantities not exceeding A_2 per package must be transported in DOT Specification 7A packagings constructed of materials that will not react with, nor be decomposed by, the contents. Contents of the package must be—

(a) In solid form and must not be fissile unless excepted by § 173.453;

(b) Contained in sealed and corrosion resistant receptacles with positive closures (friction or slip-fit covers or stoppers are not authorized);

(c) Free of water and contaminants that would increase the reactivity of the material; and

(d) Inerted to prevent self-ignition during transport by either—

(1) Mixing with large volumes of inerting materials, such as graphite, dry sand, or other suitable inerting material, or blended into a matrix of hardened concrete; or

(2) Filling the innermost receptacle with an appropriate inert gas or liquid.

(e) Pyrophoric Class 7 (radioactive) materials transported by aircraft must be packaged in Type B packages.

[Amdt. 173–244, 60 FR 50307, Sept. 28, 1995, as amended at 68 FR 45038, July 31, 2003; 70 FR 56098, Sept. 23, 2005]

§ 173.419 Authorized packages—oxidizing Class 7 (radioactive) materials.

(a) An oxidizing Class 7 (radioactive) material, as referenced in the § 172.101 table of this subchapter, is authorized in quantities not exceeding an A_2 per package, in a DOT Specification 7A package provided that—

(1) The contents are:

(i) Not fissile;

(ii) Packed in inside packagings of glass, metal or compatible plastic; and

(iii) Cushioned with a material that will not react with the contents; and

(2) The outside packaging is made of wood, metal, or plastic.

(b) The package must be capable of meeting the applicable test requirements of § 173.465 without leakage of contents.

(c) For shipment by air, the maximum quantity in any package may not exceed 11.3 kg (25 pounds).

[Amdt. 173–244, 60 FR 50307, Sept. 28, 1995, as amended at 66 FR 45380, Aug. 28, 2001]

§ 173.420 Uranium hexafluoride (fissile, fissile excepted and non-fissile).

(a) In addition to any other applicable requirements of this subchapter, quantities greater than 0.1 kg of fissile, fissile excepted or non-fissile uranium hexafluoride must be offered for transportation as follows:

(1) Before initial filling and during periodic inspection and test, packagings must be cleaned in accordance with American National Standard N14.1 (IBR, see § 171.7 of this subchapter).

(2) Packagings must be designed, fabricated, inspected, tested and marked in accordance with—

(i) American National Standard N14.1 in effect at the time the packaging was manufactured;