other standards, for the design, manufacture, testing, documentation, use, maintenance and inspection, as appropriate, of all special form material offered for transport by the requester; and

(5) A description of any proposed pre-shipment actions, such as leak testing, for use in the consignment of special form radioactive material for transport.

(d) Paragraphs (a) and (b) of this section do not apply in those cases where $A_1$ equals $A_2$ and the material is not required to be described on the shipping papers as "Radioactive Material, Special Form, n.o.s."


§ 173.477 Approval of packagings containing greater than 0.1 kg of non-fissile or fissile-excepted uranium hexafluoride.

(a) Each offeror of a package containing more than 0.1 kg of uranium hexafluoride must maintain on file for at least one year after the latest shipment, and provide to the Associate Administrator on request, a complete safety analysis, including documentation of any tests, demonstrating that the package meets the requirements of §173.420. An IAEA Certificate of Competent Authority issued for the design of the packaging containing greater than 0.1 kg of non-fissile or fissile-excepted uranium hexafluoride may be used to satisfy this requirement.

(b) Prior to the first export shipment of a package containing greater than 0.1 kg of uranium hexafluoride from the United States, each offeror shall obtain a U.S. Competent Authority Certificate for the packaging design. For packagings manufactured outside the United States, each offeror shall comply with §173.437.

(c) Each request for a U.S. Competent Authority Certificate as required by the IAEA regulations must be submitted in writing, in triplicate, by mail or other delivery service to the Associate Administrator. Alternatively, the request with any attached supporting documentation submitted in an appropriate format may be sent by facsimile (fax) to (202) 366–3753 or (202) 366–3650, or by electronic mail (e-mail) to ramcert@dot.gov. Each request is considered in the order in which it is received. To allow sufficient time for consideration, requests must be received at least 90 days before the requested effective date. Each request for a U.S. Competent Authority Certificate must include the following information:

(1) A safety analysis report which, at a minimum, provides a detailed description of the packaging and contents; a description of the manufacturing process used for the packaging; and details of the tests conducted and copy of their results, evidence based on calculative methods to show that the package is able to pass the tests, or other evidence that the package complies with §173.420; and

(2) For the original request for a Competent Authority Certificate, evidence of a quality assurance program.

(69 FR 3693, Jan. 26, 2004)

Subparts J–O [Reserved]

APPENDIX A TO PART 173 [RESERVED]

APPENDIX B TO PART 173—PROCEDURE FOR TESTING CHEMICAL COMPATIBILITY AND RATE OF PERMEATION IN PLASTIC PACKAGING AND RECEP TACLES

1. The purpose of this procedure is to determine the chemical compatibility and permeability of liquid hazardous materials packaged in plastic packaging and receptacles. Alternatives for this procedure are permitted as specified in §173.24(e)(3)(iii) of this subchapter.

2. Compatibility and rate of permeation are determined by subjecting full size plastic containers (or smaller containers as permitted in paragraph 4 of this appendix) and hazardous material lading to one of the following combinations of time and temperature:

a. Test Method 1: 180 days at a temperature no lower than 18°C (64°F)

b. Test Method 2: 28 days at a temperature no lower than 50°C (122°F)

c. Test Method 3: 14 days at a temperature no lower than 60°C (140°F)

3. Regardless of which test method is used, at least three sample containers shall be tested for each combination of hazardous material and size and design of container. Fill containers to rated capacity with the
specific hazardous material (at the concentration to be transported) and close as for
shipment. For the first and last 24 hours of storage under the selected test method, place
the containers with closures downward, except that containers fitted with a vent are so
placed on each occasion for five minutes only.
4. For testing under Test Method 2 or 3 in those instances where it is not practicable to
use full size containers, smaller containers may be used. The small container shall be
manufactured by the same process as the larger container (for example, using the
same method of molding and processing temperatures) and be made of identical resins,
pigments and additives.
5. Determine filled container weight or net weight of contents both before and after
storage under the selected test method. Rate of permeation is determined from loss of haz-
ardous materials contents, during the conduct of the test, expressed as a percentage of
the original weight.
6. After storage under the selected test method, the container shall be drained,
rinsed, filled to rated capacity with water and, with filled container at ambient tem-
perature, dropped from a height determined in accordance with §178.603(e) of this sub-
chapter onto a rigid non-resilient, flat and horizontal surface.
7. Each of the following constitute test failure:
   a. Visible evidence of permanent deformation due to vapor pressure build-up or col-
lapse of walls, deterioration, swelling, crazing, cracking, excessive corrosion,
   oxidation, embrittlement, leakage, rupture or other defects likely to cause premature
   failure or a hazardous condition.
   b. For materials meeting the definition of a poison according to this subchapter, a rate
   of permeation in excess of 0.5% determined over the test period.
   c. For materials meeting the definition of a poison according to this subchapter, a rate
   of permeation in excess of 2.0% determined over the test period.


APPENDIX D TO PART 173—TEST METHODS FOR DYNAMITE (EXPLOSIVE,
BLASTING, TYPE A)

1. TEST METHOD D–1—LEAKAGE TEST

   The test apparatus consists of a glass tube, 135 mm (5.3 inches) long and one inch in di-
   ameter, with both ends open, and is assembled in the following manner:
   (a) Close the bottom with a plastic plug of diameter equal to the inner diameter of the
glass tube;
   (b) Place a small amount of absorbent cotton on top of the plug;
   (c) Place a plastic disk that matches the inner diameter to the glass tube and has
seven small perforations on top of the cotton; and
   (d) Place 10 g (0.35 ounce) of the dynamite sample on top of the disk.
   The assembled glass tube is then placed in a hand-operated centrifuge and spun for one
minute at 600 rpm (revolutions per minute). The dynamite sample is then removed from
the glass tube and weighed to determine the percent of weight loss.

APPENDIX C TO PART 173—PROCEDURE FOR BASE-LEVEL VIBRATION TESTING

Base-level vibration testing shall be conducted as follows:
1. Three sample packagings, selected at random, must be filled and closed as for ship-
   ment. A non-hazardous material may be used in place of the hazardous material if it has
   essentially the same physical characteristics.
2. The three packages must be placed on a vibrating platform that has a vertical dou-
bble-amplitude (peak-to-peak displacement) of one inch. The packages should be con-
strained horizontally to prevent them from falling off the platform, but must be left free
to move vertically, bounce and rotate.
3. The test must be performed continuously for one hour at a frequency that causes
each package to be raised from the vibrating platform to such a degree that a piece of ma-
terial of approximately 1.6 mm (0.063 inch) thickness (such as steel strapping or paper-
board) can be passed between the bottom of any package and the platform.
4. Immediately following the period of vibration, each package shall be removed from
the platform, turned on its side and observed for any evidence of leakage.
5. Rupture or leakage from any of the packages constitutes failure of the test.