I. Introduction

The U.S. DOT regulations exclude small quantities of certain hazardous materials from many of the requirements of the Hazardous Materials Regulations. The exceptions in 49 CFR apply to ground shipments as most materials shipped by air follow the IATA regulations. Note that the DRI must be registered as a hazardous materials shipper to ship via UPS, FedEx Ground or other overland freight carriers, therefore most shipments are made via FedEx air. Exceptions allowed under IATA are not discussed here. In addition, the material discussed here does not apply to U.S. mail as the U.S. postal service will only ship hazardous materials packaged for retail sale. Regardless of the mode of transportation, any one offering hazardous materials for transportation must be properly trained. For that reason, all requests must be routed via the Request of Hazardous Materials Shipping form, located on the web at http://oldintranet.dri.edu/Services/Safety/Forms/shipping_request.php.

II. Applicability of Small Quantity Exceptions

The DOT Hazardous Materials Regulations (HMR) include small quantity exceptions for the following materials:

- Flammable liquids;
- Flammable solids;
- Spontaneously combustible materials;
- Oxidizers;
- Organic peroxides;
- Poisonous materials; and
- Corrosives

The complete list from 49 CFR with references to hazard classes and divisions is in Section IV. Definitions of each of the hazard classes and divisions is in Section V.

Within the HMR there are no exceptions for the following hazard classes:

- Explosives
- Gases; and
- Infectious substances

Shipments of radioactive materials must be coordinated through the UNR radiation safety office and shipment of all chemical waste is managed by DRI EH&S.
III. Requirements of 49 CFR 173.4

1. Materials covered by the small quantity exceptions are exempt from all other requirements of 49 CFR when they are shipped according to the following ten (10) requirements outlined in paragraph (a) of the provision. Briefly those requirements are inner receptacle contains not more than 30 ml or 30 g of hazardous material (see additional requirements for Division 6.1, Packing Group I, Hazard Zone A or B and radioactive materials).

2. Inner receptacle is at least 0.2 mm thick and is not liquid full at 55° C.

3. Closure of inner receptacle is positively secured.

4. Absorbent and/or cushioning is required.

5. Inner receptacle is secured in outer packaging.

6. Prototype packaging must pass a drop test and compressive load test.

7. Package must not contain forbidden materials, see Appendix B.

8. Package does not exceed 29 kg.

9. Package is not opened or altered during transportation

10. Package is labeled with the statement, “This package conforms to 49 CFR 173.4 domestic highway or rail transport only.”

For full text of these requirements, see the actual regulatory text in Section V.

VI. Full text of 49 CFR 173.4, January 14, 2009

(a) When transported domestically by highway or rail in conformance with this section, small quantities of Class 3, Division 4.1, Division 4.2 (PG II and III), Division 4.3 (PG II and III), Division 5.1, Division 5.2, Division 6.1, Class 7, Class 8, and Class 9 materials that also meet the definition of one or more of these hazard classes, are not subject to any other requirements of this subchapter when—

(1) The maximum quantity of material per inner receptacle or article is limited to—

(i) Thirty (30) mL (1 ounce) for authorized liquids, other than Division 6.1, Packing Group I, Hazard Zone A or B materials;

(ii) Thirty (30) g (1 ounce) for authorized solid materials;
(iii) One (1) g (0.04 ounce) for authorized materials meeting the definition of
a Division 6.1, Packing Group I, Hazard Zone A or B material; and

(iv) An activity level not exceeding that specified in §§173.421, 173.424,
173.425 or 173.426, as appropriate, for a package containing a Class 7
(radioactive) material.

(2) With the exception of temperature sensing devices, each inner receptacle:

(i) Is not liquid-full at 55 °C (131 °F), and

(ii) Is constructed of plastic having a minimum thickness of no less than 0.2
mm (0.008 inch), or earthenware, glass, or metal;

(3) Each inner receptacle with a removable closure has its closure held securely in
place with wire, tape, or other positive means;

(4) Unless equivalent cushioning and absorbent material surrounds the inside
packaging, each inner receptacle is securely packed in an inside packaging
with cushioning and absorbent material that:

(i) Will not react chemically with the material, and

(ii) Is capable of absorbing the entire contents (if a liquid) of the receptacle;

(5) The inside packaging is securely packed in a strong outside packaging;

(6) The completed package, as demonstrated by prototype testing, is capable of
sustaining—

(i) Each of the following free drops made from a height of 1.8 m (5.9 feet)
directly onto a solid unyielding surface without breakage or leakage from
any inner receptacle and without a substantial reduction in the
effectiveness of the package:

(A) One drop flat on bottom;

(B) One drop flat on top;

(C) One drop flat on the long side;

(D) One drop flat on the short side; and

(E) One drop on a corner at the junction of three intersecting edges; and

(ii) A compressive load as specified in §178.606(c) of this subchapter.
Guideline to Small Quantity Exceptions
under U.S. DO.T., 49 CFR 173.4

Note to paragraph (a)(6): Each of the tests in paragraph (a)(6) of this section may be performed on a different but identical package; i.e., all tests need not be performed on the same package.

(7) Placement of the material in the package or packing different materials in the package does not result in a violation of §173.21;

(8) The gross mass of the completed package does not exceed 29 kg (64 pounds);

(9) The package is not opened or otherwise altered until it is no longer in commerce; and

(10) The shipper certifies conformance with this section by marking the outside of the package with the statement “This package conforms to 49 CFR 173.4 for domestic highway or rail transport only.”

(b) A package containing a Class 7 (radioactive) material also must conform to the requirements of §173.421(a)(1) through (a)(5) or §173.424(a) through (g), as appropriate.

(c) Packages which contain a Class 2, Division 4.2 (PG I), or Division 4.3 (PG I) material conforming to paragraphs (a)(1) through (a)(10) of this section may be offered for transportation or transported if specifically approved by the Associate Administrator.

(d) Lithium batteries and cells are not eligible for the exceptions provided in this section.

[74 FR 2253, Jan. 14, 2009]