

PROCEDURES FOR ORDERING, RECEIVING, OPENING & SHIPPING PACKAGES CONTAINING RADIOACTIVE MATERIAL

Shipping and Receiving Gauges

To address requirements specified by the U.S. Department of Transportation (DOT) in Title 49, Code of Federal Regulations (49 CFR), the procedures described below will be followed.

Only personnel qualified as hazmat employees in accordance with 49 CFR Part 172 requirements are allowed to perform the transport-related functions described below.

I. Ordering and Receipt

- A. The Radiation Safety Officer (RSO) will place or approve all orders for radioactive material and ensure that the requested material, quantity, manufacturer and model are authorized by the license and will not exceed possession limits specified in the license.
- B. Transportation carriers must be provided instructions on where to deliver packages containing radioactive materials.

II. Opening Packages

- A. Visually inspect each package for signs of damage. If a radiation survey meter is available, survey the package as soon as possible to verify that radiation levels are at acceptable levels (refer to the manufacturer's information on radiation levels). **If any damage or excessive radiation levels are noted, immediately notify the RSO or RSO designee.** Damaged packages will be evaluated for the possibility of degradation of the package's integrity. If a survey meter is unavailable and the device shielding appears compromised, arrangements will be made to have the package's radiation levels monitored to determine the presence and extent of any radioactive contamination.
- B. Verify that the portable gauging device model and serial numbers and source activity listed on the attached label match the information provided in the shipping papers and packing slip. In addition, verify that documentation indicating that the gauge's source has been leak tested. If any discrepancies are identified, notify the RSO or RSO designee.
- C. If no damage is evident and the documentation is in order, secure the portable gauging device in the designated storage area.

III. Transportation

- A. **Markings and labels** on portable gauging device transport containers must be durable, legible, in English, and printed on or affixed to the package surface (e.g., a label, tag or sign). Required package labels and markings cannot be obscured by any other markings, labels or obstructions.
 1. Required **markings** include:
 - ◆ *Shipping name*;
 - ◆ *RQ* (Reportable Quantity; applies to shipments with activities specified in 49 CFR 172.101, Appendix 2, Table A);
 - ◆ *Identification number*; and
 - ◆ *Package type*.

**RQ
Package
Marking**



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A. Markings and labels (contd.)

2. Required labels include:

- ◆ “Cargo Aircraft Only” label (for shipments by air)
- ◆ Two DOT warning labels applied to opposite sides of the package, listing the radionuclide and activity in SI units (English units may be listed after SI units) and the package’s Transport Index (TI), the dimensionless number indicating the package’s radiation level at 1 meter.



Package Labeling Criteria

Warning Label	Max. Rad. Level at Package Surface (mR/hr)	Max. Rad. Level at 1 m (TI)
RADIOACTIVE WHITE I	0.5	None
RADIOACTIVE YELLOW II	50	1
RADIOACTIVE YELLOW III	200	10



RADIOACTIVE WHITE I



RADIOACTIVE YELLOW II



RADIOACTIVE YELLOW III

- 3. Overpacks.** If a convenience overpack is used that prevents package labels from being visible, then all required labels must be applied to the overpack, along with a label bearing the following statement: “Inner Package Complies with Prescribed Specifications.”

B. Shipping papers

The information required on a shipping paper (bill of lading) depends on the type of shipment being made, as described below.

- 1. Private use shipments** are sole use shipments, with all loading, transport and unloading carried out by the licensee’s trained personnel in accordance with the shipper’s instructions, which must accompany the package during shipment. Private use shipments require a bill of lading with the information listed below.

III. Transportation

B. Shipping papers

1. **Private use shipments** (contd.)

- ◆ *Description of shipment* [proper shipping name, RQ (if applicable), identification number, hazard class, package type, name and activity of each radionuclide, category of warning label and Transport Index) (same as for common carrier shipments)
- ◆ *Emergency response telephone number* (24-hour-monitored number of a person knowledgeable about the hazards associated with the radioactive material contained in the portable gauging device being shipped)
- ◆ *Date of shipment*

While not a requirement, the name, address and telephone number of the shipper should be included as a security enhancement.

2. **Common carrier shipments** (packages offered to third parties for transport) require a bill of lading with the information listed below. If shipped by air, the carrier will provide a "Dangerous Goods Airbill" form to document required information. Common carrier shipping papers must have all information typed in. In addition to the information described above, common carrier shipments require a bill of lading with the information listed below.

- ◆ *Name and address of shipper* [can be the *consignee* (licensee offering the package for shipment) or the *consignor* (service company shipping the package)]
- ◆ *Description of shipment* [RQ (if applicable), proper shipping name, hazard class, identification number, type of package, name and activity of each nuclide, category of labeling and Transport Index)
- ◆ *Emergency response telephone number* (24-hour-monitored number of a person knowledgeable about the hazards associated with fixed gauges)
- ◆ *Shipper's certification* (statement certifying that the package has been properly classified, described, packaged, marked and labeled, and is in proper condition for transportation)
- ◆ *Signature of shipper and date of shipment*

Additional Statements Required for Air Shipments

- ◆ *Cargo aircraft statement*. "Cargo aircraft only"
- ◆ *Package dimensions*
- ◆ *Overpack statement*. "Overpack Used" (if applicable)
- ◆ *Candy-stripe borders*

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III. Transportation

B. Shipping papers (contd.)

3. **Emergency response information (ERI)** provides first responders (i.e., medical, fire and law enforcement personnel) with the information needed to take appropriate action in the event of an emergency. Drivers are required to have in their possession a separate ERI sheet for each type of radioactive material being transported.
4. **Accessibility.** Shipping papers and ERI will be immediately accessible to the driver during transport of portable gauging devices. That is, the papers must be within immediate reach and either readily visible to a person entering the driver's compartment or in a holder mounted to the inside of the door on the driver's side of the vehicle.

C. Inspection

Prior to shipment, transport containers will be inspected to ensure proper packaging and unimpaired physical condition of the container and its closure devices. Any defects must be promptly reported to the RSO. The RSO will tag and remove from use any device or package found to be defective and ensure its repair or replacement.

D. Blocking and bracing

Transport containers will be blocked and braced to prevent shifting during normal transportation conditions. Portable gauging devices will not be transported in a vehicle's passenger compartment.

E. Type A package requirements

Transport containers will be equipped with a tamper-evident seal. In addition, transport containers will conform to the Type A package requirements indicated in 49 CFR 178.350. Records will be maintained for each Type A package demonstrating compliance with the package construction and design requirements. Records will be maintained for one year after the latest shipment.

F. Excepted instruments/articles

Devices classified as excepted instruments/articles are exempt from marking, labeling and shipping paper requirements, but must have a notice included with the package that lists the shipper's name and the statement: "This package conforms to the conditions and limitations specified in 49 CFR 173.424 for radioactive material, excepted package – instruments or articles, UN3332."