

OREGON ADMINISTRATIVE RULES
DEPARTMENT OF HUMAN SERVICES, PUBLIC HEALTH DIVISION
CHAPTER 333

DIVISION 118

TRANSPORTATION OF RADIOACTIVE MATERIAL

333-118-0010

Purpose and Scope

The rules in this division apply to any licensee authorized by specific or general license to receive, possess, use, or transfer licensed material, if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage as specified in the license, or transports that material on public highways. No provision of this part authorizes possession of licensed material.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

333-118-0020

Definitions

As used in this division, the following definitions apply:

(1) "A1" means the maximum activity of special form radioactive material permitted in a Type A package. This value is either listed in **Appendix A** to 10 CFR Part 71, Table A-1, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(2) "A2" means the maximum activity of radioactive material, other than special form material, LSA, and SCO material, permitted in a Type A package. This value is either listed in Appendix A to 10 CFR Part 71, Table A-1, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(3) "Carrier" means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

(4) "Closed transport vehicle" means a transport vehicle equipped with a securely attached exterior enclosure that during normal transportation restricts the access of unauthorized persons to the cargo space containing the radioactive material. The enclosure may be either temporary or permanent but shall limit access from top, sides, and ends. In the case of packaged materials, it may be of the "see-through" type.

(5) "Consignment" means each shipment of a package or groups of packages or load of radioactive material offered by a shipper for transport.

(6) "Conveyance" means for transport by public highway or rail any transport vehicle or large freight container; or for transport by water any vessel, or any hold, compartment, or defined deck area of a vessel including any transport vehicle on board the vessel; or for transport by aircraft.

(7) "Criticality Safety Index (CSI)" means the dimensionless number (rounded up to the next tenth) assigned to and placed on the label of a fissile material package, to designate the degree of control of accumulation of packages containing fissile material during

transportation. Determination of criticality safety index is described in 10 CFR 71.22, 71.23, and 71.59.

(8) "Deuterium" means any deuterium compounds, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000.

(9) "Exclusive use" means the sole use of a conveyance by a single consignor and for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

NOTE: The term "exclusive use" is used interchangeably with the terms "sole use" or "full load" in other regulations, such as Title 49 of the Code of Federal Regulations.

(10) "Fissile material" means the radionuclides plutonium-239, plutonium-241, uranium-233, and uranium-235, or any combination of these radionuclides. Unirradiated natural uranium and depleted uranium, and natural uranium or depleted uranium that has been irradiated in thermal reactors only, are not included in this definition. Neither natural nor depleted uranium is fissile material.

NOTE: Department jurisdiction is limited to special nuclear material in quantities not sufficient to form a critical mass as defined in division 100 of this chapter.

(11) "Fissile material package" means a fissile material packaging together with its fissile material contents.

(12) "Graphite" means, graphite with a boron equivalent content less than five parts per million and density greater than 1.5 grams per cubic centimeter.

(13) "Licensed material" means radioactive or special nuclear material received, possessed, used, or transferred under a general or specific license issued by the Department.

NOTE: The definition of licensed material in this division is used in the same way as in 49 CFR 173.403.

(14) "Low specific activity (LSA) material" means radioactive material that satisfies the descriptions and limits set forth below. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. LSA material must be in one of three groups:

(a) LSA-I.

(A) Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) which are not intended to be processed for the use of these radionuclides; or

(B) Solid unirradiated natural uranium, depleted uranium, natural thorium, or their solid or liquid compounds or mixtures; or

(C) Radioactive material, other than fissile material, for which the A2 value is unlimited; or

(D) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with 10 CFR 71, Appendix A.

(b) LSA-II.

(A) Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter); or

(B) Material in which the radioactive material is distributed throughout, and the average specific activity does not exceed 10^{-4} A2/g for solids and gases, and 10^{-5} A2/g for liquids.

(c) LSA-III. Solids (e.g., consolidated wastes, activated materials) in which:

(A) The radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.); and

(B) The radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that, even under loss of packaging, the loss of radioactive material per package by leaching, when placed in water for seven days, would not exceed 10^{-1} A2; and

(C) The average specific activity of the solid does not exceed 2×10^{-3} A2 per gram.

(15) "Low toxicity alpha emitters" means natural uranium, depleted uranium, natural thorium; uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than ten days.

(16) "Natural thorium" means thorium with the naturally occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

(17) "Normal form radioactive material" means radioactive material that has not been demonstrated to qualify as "special form radioactive material".

(18) "Package" means the packaging together with its radioactive contents as presented for transport.

(a) Fissile material package or Type AF package, Type BF package, Type B(U)F package, or Type B(M)F package means a fissile material packaging together with its fissile material contents.

(b) Type A package means a Type A packaging together with its radioactive contents. A Type A package is defined and must comply with the DOT regulations in 49 CFR part 173.

(c) Type B package means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lbs/in²) gauge or a pressure relief device that would allow the release of radioactive material to the environment under the tests specified in 10 CFR 71.73 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, see DOT regulations in 49 CFR Part 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in 10 CFR 71.19.

(19) "Packaging" means the assembly of components necessary to ensure compliance with the packaging requirements of 49 CFR Part 173 Subpart I. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle, tie-down system, and auxiliary equipment may be designated as part of the packaging.

- (20) "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189 and Parts 390-397.
- (21) "Regulations of the U.S. Nuclear Regulatory Commission" means the regulations in 10 CFR 71.
- (22) "Special form radioactive material" means radioactive material that satisfies the following conditions:
- (a) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;
 - (b) The piece or capsule has at least one dimension not less than five millimeters (0.2 inch.); and
 - (c) It satisfies the test requirements specified by the Nuclear Regulatory Commission. A special form encapsulation designed in accordance with the Nuclear Regulatory Commission requirements in effect on June 30, 1983, and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation designed in accordance with the Nuclear Regulatory Commission requirements in effect on March 31, 1996, and constructed prior to April 1, 1998, may continue to be used. A special form encapsulation either designed or constructed after April 1, 1998, must meet requirements of this definition applicable at the time of its design or construction.
- (23) "Specific activity" of a radionuclide means the radioactivity of a radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of the material.
- (24) "State" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.
- (25) "Surface contaminated object" (SCO) means a solid object that is not itself classed as radioactive material, but which has radioactive material distributed on any of its surfaces. SCO must be in one of two groups with surface activity not exceeding the following limits:
- (a) SCO-I: a solid object on which:
 - (A) The non-fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 Bq/cm² (10⁻⁴ microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 0.4 Bq/cm² (10⁻⁵ microcurie/cm²) for all other alpha emitters;
 - (B) The fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1.0 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters; and
 - (C) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters.
 - (b) SCO-II: a solid object on which the limits for SCO-I are exceeded and on which:
 - (A) The non-fixed contamination on the accessible surface averaged over 300 square centimeters (or the area of the surface if less than 300 square centimeters) does not exceed 400 bequerel per square centimeter (Bq/cm²) (1E-2 microcurie per square

centimeter) for beta, gamma and low toxicity alpha emitters or 40 bequerel per square centimeter (Bq/cm^2) ($1\text{E}-3$ microcurie per square centimeter) for all other alpha emitters; (B) The fixed contamination on the accessible surface averaged over 300 square centimeters (or the area of the surface if less than 300 square centimeters) does not exceed $8\text{E}5$ bequerel per square centimeter (Bq/cm^2) (20 microcuries square centimeter) for beta, gamma and low toxicity alpha emitters, or $8\text{E}4$ bequerel per square centimeter (Bq/cm^2) (2 microcuries per square centimeter) for all other alpha emitters; and (C) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 square centimeters (or the area of the surface if less than 300 square centimeters) does not exceed $8\text{E}5$ bequerel per square centimeter (Bq/cm^2) (20 microcuries per square centimeter) for beta, gamma and low toxicity alpha emitters, or $8 \times 10^4 \text{ Bq}/\text{cm}^2$ (2 microcuries/ cm^2) for all other alpha emitters.

(26) "Transport index (TI)" means the dimensionless number, rounded up to the first decimal place, placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The transport index is the number determined by multiplying the maximum radiation level in millisievert (mSv) per hour at one meter (3.3 ft) from the external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at one meter (3.3 ft)).

(27) "Type A quantity" means a quantity of radioactive material, the aggregate radioactivity of which does not exceed A1 for special form radioactive material or A2 for normal form radioactive material, where A1 and A2 are given in 10 CFR Part 71 Appendix A or may be determined by procedures described in 10 CFR Part 71 Appendix A.

(28) "Type A package" means a packaging that, together with its radioactive contents limited to A1 or A2 as appropriate, meets the requirements of 49 CFR 173.410 and 173.412 and is designed to retain the integrity of containment and shielding under normal conditions of transport as demonstrated by the tests set forth in 173.465 or 173.466, as appropriate.

(29) "Type B package" means a Type B packaging together with its radioactive contents. **NOTE:** A type B package design is designated as B(U) or B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, refer to 49 CFR Part 173. A Type B package approved prior to September 6, 1983, was designated only as Type B. Limitations on its use are specified in OAR 333-118-0035.

(30) "Type B packaging" means a packaging designed to retain the integrity of containment and shielding when subjected to the normal conditions of transport and hypothetical accident test conditions set forth in 10 CFR Part 71.

(31) "Type B quantity" means a quantity of radioactive material greater than Type A quantity.

NOTE: 10 CFR Part 71 Appendix A referred to or incorporated by reference in this rule is attached to this division or available from the Department.

(32) "Unirradiated uranium" means uranium containing not more than $2\text{E}3$ Bq of plutonium per gram of uranium-235, not more than $9\text{E}6$ Bq of fission products per gram of uranium-235, and not more than $5\text{E}-3$ g of uranium-236 per gram of uranium-235.

(33) "Uranium -- natural, depleted, enriched"

(a) "Natural uranium" means uranium isotopes with the naturally occurring distribution of uranium, isotopes (which is approximately 0.711 weight percent uranium-235, and the remainder by weight essentially uranium-238).

(b) "Depleted uranium" means uranium containing less uranium-235 than the naturally occurring distribution of uranium isotopes.

(c) "Enriched uranium" means uranium containing more uranium-235 than the naturally occurring distribution of uranium isotopes.

[ED. NOTE: Appendices referenced are available from the Department.]

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

General Regulatory Provisions

333-118-0050

Transportation of Licensed Material

(1) Each licensee who transports licensed material outside the site of usage, as specified in the Department license, or where transport is on public highways, or who delivers licensed material to a carrier for transport shall:

(a) Comply with the applicable requirements, appropriate to the mode of transport, of the regulations of the U.S. Department of Transportation in 49 CFR parts 107, 171 – 180, and 390 - 397, appropriate to the mode of transportation. The licensee shall particularly note the regulations of U.S. Department of transportation in the following areas:

(A) Packaging -- 49 CFR Part 173: Subparts A, B and I.

(B) Marking and labeling -- 49 CFR Part 172: Subpart D, 172.400 through 172.407, and 172.436 through 172.440 of Subpart E.

(C) Placarding -- 49 CFR Part 172: Subpart F, especially 172.500 through 172.519, and 172.556, and Appendices B and C.

(D) Accident reporting -- 49 CFR Part 171: 171.15 and 171.16.

(E) Shipping papers and emergency information -- 49 CFR Part 172: Subparts C and G.

(F) Hazardous material employee training -- 49 CFR Part 172: Subpart H.

(G) Security plans—49 CFR Part 172: Subpart I

(H) Hazardous material shipper/carrier registration -- 49 CFR Part 107: Subpart G.

(b) The licensee also shall comply with applicable U.S. Department of Transportation regulations pertaining to the following modes of transportation:

(A) Rail -- 49 CFR Part 174: Subparts A through D and K.

(B) Air -- 49 CFR Part 175.

(C) Vessel -- 49 CFR Part 176: Subparts A through F and M.

(D) Public highway -- 49 CFR Part 177 and Parts 390 through 397.

(c) Assure that any special instructions needed to safely open the package are sent to or have been made available to the consignee.

(2) If, for any reason, the regulations of the U.S. Department of Transportation are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of 49 CFR Parts 170 through 189 appropriate to the mode of transport and to the same extent as if the shipment were subject to the regulations.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

General Licenses

333-118-0070

General License: Nuclear Regulatory Commission-Approved Packages

(1) A general license is hereby issued to any licensee of the Department to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, Certificate of Compliance (CoC), or other approval has been issued by the U.S. Nuclear Regulatory Commission.

(2) This general license applies only to a licensee who:

(a) Has a copy of the specific license, certificate of compliance, or other approval by the Nuclear Regulatory Commission of the package and has the drawings and other documents referenced in the approval relating to the use and maintenance of the packaging and to the actions to be taken prior to shipment;

(b) Complies with the terms and conditions of the license, certificate, or other approval by the Nuclear Regulatory Commission, as applicable, and the applicable requirements of division 118;

(c) Prior to the licensee's first use of the package, has registered with the U.S. Nuclear Regulatory Commission; and

(d) Has a quality assurance program required by OAR 333-118-0200 and approved by the Department.

(3) The general license in section (1) of this rule applies only when the package approval authorizes use of the package under this general license.

(4) For previously approved Type B packages which are not designated as either B(U) or B(M) in the Certificate of Compliance, this general license is subject to additional restrictions in OAR 333-118-0080. For a Type B or fissile material package, the design of which was approved by Nuclear Regulatory Commission before April 1, 1996, the general license is subject to additional restrictions of OAR 333-118-0080.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

333-118-0080

General License: Previously Approved Packages

(1) A Type B package previously approved by the U.S. Nuclear Regulatory Commission, but not designated as B(U) or B(M) in the Certificate of Compliance, may be used under the general license of OAR 333-118-0070 with the following additional limitations:

(a) Fabrication of the packaging was satisfactorily completed before August 31, 1986, as demonstrated by application of its model number in accordance with U.S. Nuclear Regulatory Commission regulations at 10 CFR 71.85(c); and

(b) The package may not be used for a shipment to a location outside the United States except when approved under special arrangement in accordance with 49 CFR 173.471. A package used for a shipment to a location outside the United States is subject to multilateral approval, as defined in U.S. Department of Transportation regulations at 49 CFR 173.403; and

(c) A serial number that uniquely identifies each packaging which conforms to the approved design is assigned to, and legibly and durably marked on, the outside of each packaging.

(2) A Type B(U) package, a Type B(M) package, a low specific activity (LSA) material package or a fissile material package, previously approved by the Nuclear Regulatory Commission but without the designation "-85" in the identification number of the Nuclear Regulatory Commission certificate of compliance, may be used under the general license of OAR 333-118-0070 with the following additional conditions:

(a) Fabrication of the package is satisfactorily completed by April 1, 1999, as demonstrated by application of its model number in accordance with Nuclear Regulatory Commission regulations at 10 CFR 71.85(c);

(b) A package used for a shipment to a location outside the United States is subject to multilateral approval except approved under special arrangement in accordance with U.S. Department of Transportation regulations at 49 CFR 173.403; and

(c) A serial number that uniquely identifies each packaging which conforms to the approved design is assigned to, and legibly and durably marked on, the outside of each packaging.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

333-118-0110

General License: Fissile Material, Limited Quantity per Package

(1) A general license is hereby issued to any licensee to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped as a Fissile Class II package in accordance with OAR chapter 333, division 118.

(2) This general license applies only when a package contains no more than a Type A quantity of radioactive material, including only one of the following:

(a) Up to 40 grams of uranium-235; or

(b) Up to 30 grams of uranium-233; or

(c) Up to 25 grams of the fissile radionuclides of plutonium, except that for encapsulated plutonium-beryllium neutron sources in special form, an A1 quantity of plutonium may be present; or

(d) A combination of fissile radionuclides in which the sum of the ratios of the amount of each radionuclide to the corresponding maximum amounts in subsections (2)(a), (2)(b), and (2)(c) of this rule does not exceed unity.

(3) Except as specified in subsection (3)(b) of this rule, this general license applies only when all of the following requirements are met:

(a) A package containing fissile radionuclides is labeled with a transport index not less than the number given by the following equation:

Minimum Transport Index = $(0.25x + 0.33y + 0.4z)$ where the package contains x grams of uranium-235, y grams of uranium-233, and z grams of the fissile radionuclides of plutonium;

(b) For a package in which the only fissile material is encapsulated plutonium-beryllium neutron sources in special form, the transport index based on criticality considerations may be taken as 0.025 times the number of grams of the fissile radionuclides of plutonium.

(c) In all cases, the transport index must be rounded up to one decimal place and shall not exceed 10.0.

(d) Except for the beryllium contained within the special form plutonium-beryllium sources authorized in section (2) of this rule, beryllium, graphite, or hydrogenous material enriched in deuterium is not present in quantities exceeding 0.1% of the fissile material mass.

(e) The licensee has a quality assurance program approved by the nuclear regulatory commission.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807

Operating Controls and Procedures

333-118-0150

Routine Determinations

Prior to each shipment of licensed material, the licensee shall ensure that the package with its contents satisfies the applicable requirements of this division and of the license.

The licensee shall determine that:

- (1) The package is proper for the contents to be shipped;
- (2) The package is in unimpaired physical condition except superficial defects such as marks or dents;
- (3) Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects;
- (4) Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid;
- (5) Any pressure relief device is operable and set in accordance with written procedures;
- (6) The package has been loaded and closed in accordance with written procedures;
- (7) Any structural part of the package which could be used to lift or tie down the package during transport is rendered inoperable for that purpose unless it satisfies design requirements specified in 10 CFR 71.45;
- (8) For fissile material, any moderator or neutron absorber, if required, is present and in proper condition;
- (9) The level of non-fixed (removable) radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable.
 - (a) The level of non-fixed (removable) radioactive contamination may be determined by wiping an area of 300 square centimeters of the surface concerned with an absorbent material, using moderate pressure, and measuring the activity on the wiping material. Sufficient measurements must be taken in the most appropriate locations to yield a representative assessment of the removable contamination levels. Except as provided in subsection (8)(b) of this rule, the amount of radioactivity measured on any single wiping material, when averaged over the surface wiped, must not exceed the limits given in Table 3 below at any time during transport. Other methods of assessment of equal or greater efficiency may be used. When other methods are used, the detection efficiency of the method used must be taken into account and in no case may the removable contamination on the external surfaces of the package exceed ten times the limits listed in Table 3.

(b) In the case of packages transported as exclusive use shipments by rail or highway only, the non-fixed (removable) radioactive contamination at any time during transport must not exceed ten times the levels prescribed in subsection (8)(a) of this rule. The levels at the beginning of transport must not exceed the levels in subsection (8)(a) of this rule;

(10) External radiation levels around the package and around the vehicle, if applicable, will not exceed two mSv/hr (200 millirem per hour) at any point on the external surface of the package at any time during the transportation. The transport index shall not exceed ten; [Table not included. See ED. NOTE.]

(11) For a package transported in exclusive use by rail, highway, or water, radiation levels external to the package may exceed the limits specified in section (10) of this rule but shall not exceed any of the following:

(a) Two millisieverts per hour (mSv/h) (200 millirem per hour) on the accessible external surface of the package unless the following conditions are met, in which case the limit is 10 millisieverts per hour (mSv/h) (1000 millirem per hour);

(A) The shipment is made in a closed transport vehicle,

(B) Provisions are made to secure the package so that its position within the vehicle remains fixed during transportation, and

(C) There are no loading or unloading operations between the beginning and end of the transportation.

(b) Two millisieverts per hour (mSv/h) (200 millirem per hour) at any point on the outer surface of the vehicle, including the upper and lower surfaces, or, in the case of a flat-bed style vehicle, with a personnel barrier*, at any point on the vertical planes projected from the outer edges of the vehicle, on the upper surface of the load (or enclosure, if used), and on the lower external surface of the vehicle;

***NOTE:** A flat-bed style vehicle with a personnel barrier shall have radiation levels determined at vertical planes. If no personnel barrier, the package cannot exceed two millisieverts per hour (mSv/h) (200 millirem per hour) at the surface.

(c) 0.1 millisieverts per hour (mSv/h) (10 millirems per hour) at any point two meters from the vertical planes represented by the outer lateral surfaces of the vehicle, or, in the case of a flat-bed style vehicle, at any point two meters from the vertical planes projected from the outer edges of the vehicle; and

(d) 0.02 millisieverts per hour (mSv/h) (two millirem per hour) in any normally occupied positions of the vehicle, except that this provision does not apply to private motor carriers when persons occupying these positions are provided with special health supervision, personnel radiation exposure monitoring devices, and training in accordance with OAR 333-111-0005; and

(12) A package must be prepared for transport so that in still air at 100 degrees Fahrenheit (38 degrees Celsius) and in the shade, no accessible surface of a package would have a temperature exceeding 122 degrees Fahrenheit (50 degrees Celsius) in a nonexclusive use shipment or 185 degrees Fahrenheit (85 degrees Celsius) in an exclusive use shipment. Accessible package surface temperatures shall not exceed these limits at any time during transportation.

(13) A package may not incorporate a feature intended to allow continuous venting during transport.

(14) Before delivery of a package to a carrier for transport, the licensee shall ensure that any special instructions needed to safely open the package have been sent to, or otherwise made available to, the consignee.

(15) For shipments made under the provisions of section (11) of this rule, the shipper shall provide specific written instructions to the carrier for maintenance of the exclusive use shipment controls. The instructions must be included with the shipping paper information.

(16) The written instructions required for exclusive use shipments must be sufficient so that, when followed, they will cause the carrier to avoid actions that will unnecessarily delay delivery or unnecessarily result in increased radiation levels or radiation exposures to transport workers or members of the general public.

NOTE: A flat-bed style vehicle with a personnel barrier shall have radiation levels determined at vertical planes. If no personnel barrier is in place, the package cannot exceed two mSv/h (200 millirems per hour) at any accessible surface.

[ED. NOTE: Tables referenced are available from the Department.]

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 through 453.807