
STATUTORY INSTRUMENTS

1996 No. 2090

**The Packaging, Labelling and Carriage of
Radioactive Material by Rail Regulations 1996**

PART I

INTERPRETATION AND APPLICATION

Citation, commencement and interpretation

1.—(1) These Regulations may be cited as the Packaging, Labelling and Carriage of Radioactive Material by Rail Regulations 1996 and shall come into force on 1st September 1996.

(2) In these Regulations, unless the context otherwise requires—

“the 1983 Regulations” means the Classification and Labelling of Explosives Regulations 1983(1);

“A₁” means the maximum activity of special form radioactive material permitted in a Type A package, calculated in accordance with paragraph 15 of the Approved Document;

“A₂” means the maximum activity of radioactive material other than special form radioactive material permitted in a Type A package, calculated in accordance with paragraph 15 of the Approved Document;

“ADR” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“Approved Document” means the document entitled “Approved Requirements for the Packaging, Labelling and Carriage of Radioactive Material by Rail” approved and published by the Health and Safety Commission in accordance with regulation 3(1), as revised in accordance with regulation 3(2);

“carriage” means carriage by rail and shall be construed in accordance with paragraph (7) of this regulation, and related words shall be construed accordingly;

“Carriage Information” means the information referred to in regulation 35 and described in Schedule 14;

“category” in relation to packages and overpacks means one of the categories referred to in Tables IX and X of paragraph 19 of the Approved Document and any reference to category I-WHITE, category II-YELLOW or category III-YELLOW shall be construed accordingly;

“the CDGCPL Regulations” means the Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations 1996(2);

“competent authority” means the Secretary of State, or any national authority of a state other than the United Kingdom or any international authority which is for the time being designated or otherwise recognised as a competent authority for any purpose in connection with the International Safety Regulations as they apply to rail transport;

(1) S.I.1983/1140.
(2) S.I. 1996/2093.

“competent authority identification mark” means a mark assigned by a competent authority in accordance with Schedule 1;

“computer” means a computer system including its software;

“consignment” means any package or packages, or load of radioactive material, presented by a consignor for carriage;

“consignor” shall be regarded as—

- (a) the person who, having a place of business in Great Britain, consigns, whether as principal or agent for another, radioactive material for carriage; or
- (b) if no person satisfies the requirements of sub-paragraph (a) above, the consignee of radioactive material insofar as that person has control over the carriage of that material in Great Britain;

“consignor’s declaration” means the declaration specified in Schedule 14;

“containment system” means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during carriage;

“contamination” means the contamination of any surface by any radioactive material in quantities in excess of 0.4 Bq/cm² for beta and gamma emitters and low toxicity alpha emitters or 0.04 Bq/cm² for all other alpha emitters, and “contaminated” and “decontaminated” shall be construed accordingly;

“COTIF” means the Convention concerning International Carriage by Rail⁽³⁾, as revised or re-issued from time to time;

“dangerous goods” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“danger sign” means the sign for radioactive material ascertained in accordance with Schedule 13;

“depleted uranium” means uranium containing a lesser mass percentage of uranium-235 than in natural uranium;

“design” means, in relation to any package, packaging or special form radioactive material, a description which enables that package, packaging or special form radioactive material to be fully identified and which may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation;

“the Directive” means Council Directive [96/49/EC](#) on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail;

“excepted package” means a package which meets the requirements of sub-paragraphs 1 to 9 and 12 of paragraph 1 of the Approved Document and—

- (a) is a package containing radioactive material of limited activity which meets the requirements of paragraph 2 of the Approved Document;
- (b) is a package containing instruments or manufactured articles which meets the requirements of paragraph 3 of the Approved Document; or
- (c) is an empty packaging which meets the requirements of paragraph 4 of the Approved Document;

“exclusive use” means the sole use, by a single consignor, of a large freight container or a wagon, in respect of which all initial, intermediate, and final loading and unloading is carried out in accordance with the directions of the consignor or consignee;

(3) Cmnd. 5897.

“facility owner” has the meaning assigned to it by section 17(6) of the Railways Act 1993(4);

“factory” has the meaning assigned to it by section 175 of the Factories Act 1961(5);

“fissile material” means uranium-233, uranium-235, plutonium-238, plutonium-239, plutonium-241, or any combination thereof, and does not include unirradiated natural uranium, unirradiated depleted uranium, or natural uranium or depleted uranium which has been irradiated in thermal reactors only;

“fissile package” means a package which meets the requirements of paragraph 6 of the Approved Document;

“fixed contamination” means contamination other than non-fixed contamination;

“freight container” means an article of transport equipment designed to facilitate the transport of goods, either packaged or unpackaged, by one or more modes of transport without intermediate reloading, which is of a permanent enclosed character, rigid and strong enough for repeated use, and fitted with devices facilitating its handling, particularly in transfer between conveyances and from one mode of transport to another;

“harbour area” has the meaning assigned to it in regulation 2(1) of the Dangerous Substances in Harbour Areas Regulations 1987(6);

“hazardous properties” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“IMDG Code” means the International Maritime Dangerous Goods Code, as revised or re-issued from time to time by the International Maritime Organization(7);

“industrial package” means an industrial package Type 1, an industrial package Type 2 or an industrial package Type 3;

“industrial package Type 1” means a package meeting the requirements of sub-paragraph 1 of paragraph 8 of the Approved Document;

“industrial package Type 2” means a package meeting the requirements of sub-paragraph 2 of paragraph 8 of the Approved Document;

“industrial package Type 3” means a package meeting the requirements of sub-paragraph 3 of paragraph 8 of the Approved Document;

“infrastructure controller” has the meaning assigned to it in regulation 2(1) of the Railways (Safety Case) Regulations 1994(8);

“the International Safety Regulations” means the Regulations for the Safe Transport of Radioactive Material(9);

“the ISO classification document” means the International Organization for Standardization document, “Sealed Radioactive Sources—Classification”(10);

“the ISO freight containers document” means the International Organization for Standardization document, “Series 1 Freight Containers—Specifications and Testing—Part 1: General Cargo Containers”(11);

(4) 1993 c. 43.

(5) 1961 c. 34.

(6) S.I. 1987/37.

(7) Current edition: Volumes I to IV ISBN 92 801 13143; Supplement ISBN 92 801 1316X.

(8) S.I. 1994/237.

(9) 1985 Edition (as amended 1990) published by the International Atomic Energy Agency, Vienna 1990, Safety Series No. 6 (ISBN 92—0—123890—8).

(10) Reference No. ISO 2919—1980 (E).

(11) Reference No. ISO 1496/1—1978.

“the ISO leak test document” means the International Organization for Standardization document, “Sealed Radioactive Sources—Leak Test Methods”(12);

“large freight container” means a freight container with a minimum length of 6 metres;

“locomotive” has the meaning assigned to it in section 83(1) of the Railways Act 1993;

“LSA material” means low specific activity material;

“LSA-I” means LSA material comprising—

- (a) ores containing naturally occurring radionuclides, such as uranium and thorium, and uranium or thorium concentrates of such ores;
- (b) solid unirradiated natural uranium or depleted uranium or natural thorium or their solid compounds or their mixtures; or
- (c) radioactive material, other than fissile material, for which the A_2 value is unlimited;

“LSA-II” means LSA material comprising—

- (a) water with tritium concentrated up to 0.8 TBq/L; or
- (b) other material in which the activity is distributed throughout and the estimated average specific activity does not exceed $10^{-4} A_2/g$ for solids and gases, and $10^{-5} A_2/g$ for liquids;

“LSA-III” means LSA material comprising solids, such as consolidated wastes and 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 or ceramic;
- (b) the radioactive material is relatively insoluble, or is intrinsically contained in a relatively insoluble matrix, which is of such a nature that if the entire contents of a package containing the material were subjected to the test specified in sub-section 1 of section 14 of the Approved Document the activity in the water used in the test would not, at the end of the test, exceed $0.1 A_2$; and
- (c) the estimated average specific activity of the solid, excluding any shielding material, does not exceed $2 \times 10^{-3} A_2/g$;

“low specific activity material” means radioactive material which by its nature has a limited specific activity, or for which limits of estimated average specific activity, disregarding external shielding materials surrounding the radioactive material, apply;

“low toxicity alpha emitter” means thorium-228 in ores or physical or chemical concentrates, thorium-230 in ores or physical or chemical concentrates, natural uranium, depleted uranium, natural thorium, uranium-235, uranium-238, thorium-232, or an alpha emitter with a half life of less than 10 days;

“maximum normal operating pressure” means the maximum pressure above atmospheric pressure at mean sea level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions of transport in the absence of venting, external cooling by an ancillary system, or operational controls during carriage;

“military establishment” means an establishment intended for use for naval, military or air force purposes or the purposes of the department of the Secretary of State having responsibility for Defence;

“mine” and “quarry” have the meanings assigned to them by section 180 of the Mines and Quarries Act 1954⁽¹³⁾;

“multilateral approval” means approval by the competent authority both of the state of origin of the design or shipment and of each state through or into (but not by air over) which the consignment is to be carried;

“naturally occurring distribution of uranium isotopes” means approximately 99.28% uranium-238 and 0.72% uranium-235 by mass, but including a very small mass percentage of uranium-234;

“natural uranium” means chemically separated uranium containing the naturally occurring distribution of uranium isotopes;

“non-fixed contamination” means contamination that can be removed from a surface during normal handling;

“orange-coloured panel” means a non-reflectorised panel having the same colour and luminance properties as those specified in relation to orange-coloured plates in marginal 1800(1) of Appendix VIII of the Annex to the Directive;

“overpack” means an enclosure which is used by a single consignor to consolidate into one handling unit a consignment of two or more packages for convenience of carriage, such as a box or a bag;

“package” means packaging with the radioactive contents thereof as presented for carriage;

“packaging” means the assembly of components necessary to enclose the radioactive contents completely and may, in particular, consist of one or more receptacles, absorbent materials, spacing structures, radiation shielding, service equipment for filling, emptying, venting and pressure relief, and devices for cooling, for absorbing mechanical shocks, for providing handling and tie-down capability, for thermal insulation, and service devices integral to the package, and may be a box, drum or similar receptacle, or a freight container, tank container, tank wagon or wagon where the freight container, tank container, tank wagon or wagon concerned is used as a containment system;

“packaging components” has the meaning assigned to it in section 1(2) of the Radioactive Material (Road Transport) Act 1991⁽¹⁴⁾;

“piggyback transport” means the carriage of a road vehicle on a wagon;

“quality assurance programme” means a systematic programme of controls, inspections and training applied by any person or organisation involved in the carriage of radioactive material, including designers and manufacturers of packagings, consignors and operators, to ensure compliance with the requirements of these Regulations concerning packages and consignments;

“radiation level” means the corresponding dose equivalent rate expressed in mSv per hour;

“radioactive material” has the meaning assigned to it in section 1(1) of the Radioactive Material (Road Transport) Act 1991;

“railway” means a system of transport employing parallel rails which provide support and guidance for vehicles carried on flanged wheels, except any such system which—

- (a) is a tramway within the meaning of section 67(1) of the Transport and Works Act 1992⁽¹⁵⁾; or
- (b) is operated wholly within a factory, harbour area, military establishment, mine or quarry;

“railway facility” has the meaning assigned to it by section 83(1) of the Railways Act 1993;

⁽¹³⁾ 1954 c. 70; relevant amending instrument is S.I. 1993/1897.

⁽¹⁴⁾ 1991 c. 27.

⁽¹⁵⁾ 1992 c. 42.

“railway vehicle” means any conveyance which is used to carry radioactive material on a railway;

“RID” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“road vehicle” means any conveyance which is used to carry radioactive material on a road;

“routine carriage” means carriage in incident free conditions;

“SCO” means a surface contaminated object;

“SCO-I” means an SCO on which—

- (a) the non-fixed contamination on the accessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 0.4 Bq/cm^2 for all other alpha emitters;
- (b) the fixed contamination on the accessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed $4 \times 10^4\text{ Bq/cm}^2$ for beta and gamma emitters and low toxicity alpha emitters, or $4 \times 10^3\text{ Bq/cm}^2$ for all other alpha emitters; and
- (c) the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed $4 \times 10^4\text{ Bq/cm}^2$ for beta and gamma emitters and low toxicity alpha emitters, or $4 \times 10^3\text{ Bq/cm}^2$ for all other alpha emitters;

“SCO-II” means an SCO on which either the fixed or non-fixed contamination on the surface exceeds the applicable limits specified for SCO-I in the definition of that term and on which—

- (a) the non-fixed contamination on the accessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed 400 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 40 Bq/cm^2 for all other alpha emitters;
- (b) the fixed contamination on the accessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed $8 \times 10^5\text{ Bq/cm}^2$ for beta and gamma emitters and low toxicity alpha emitters, or $8 \times 10^4\text{ Bq/cm}^2$ for all other alpha emitters; and
- (c) the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over an area of 300 cm^2 (or the area of the surface if the area is less than 300 cm^2) does not exceed $8 \times 10^5\text{ Bq/cm}^2$ for beta and gamma emitters and low toxicity alpha emitters, or $8 \times 10^4\text{ Bq/cm}^2$ for all other alpha emitters;

“shipment” means the specific movement of consignment from origin to destination where that movement includes carriage in Great Britain;

“special arrangement” means those conditions approved by the relevant competent authority under which a consignment, which does not satisfy all the applicable requirements of these Regulations, may be carried;

“special form radioactive material” means an indispersible solid radioactive material, or a sealed capsule containing radioactive material, which meets the requirements of paragraph 5 of the Approved Document;

“specific activity” means either the activity of a radionuclide per unit mass of that nuclide or, in the case where the radionuclide is essentially uniformly distributed in radioactive material, the activity per unit mass of that material;

“subsidiary hazard” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“subsidiary hazard sign” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“surface contaminated object” means a solid object which is not itself radioactive but which has radioactive material distributed on its surfaces;

“tank” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“tank container” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“tank wagon” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations;

“train” has the meaning assigned to it by section 83(1) of the Railways Act 1993;

“train operator” in relation to any train, means any person who has the management of that train for the time being, and related expressions shall be construed accordingly;

“Transport Index” means a single number assigned to a package, overpack, freight container, tank container, tank wagon or wagon or to unpackaged LSA-I or SCO-I, determined in accordance with paragraph 17 of the Approved Document;

“Type A package” means a package containing an activity up to A_1 , if special form radioactive material, or up to A_2 if not special form radioactive material, meeting the requirements of paragraph 10 of the Approved Document;

“Type B package” means a package containing an activity which may be in excess of A_1 , if special form radioactive material, or in excess of A_2 , if not special form radioactive material, which is either a Type B(M) package or a Type B(U) package;

“Type B(M) package” means a package meeting the requirements of paragraph 13 of the Approved Document;

“Type B(U) package” means a package meeting the requirements of paragraph 12 of the Approved Document;

“uncompressed gas” means gas at a pressure not exceeding ambient atmospheric pressure at the time the containment system is closed;

“unilateral approval” means approval of a design by the competent authority of the state of origin of the design;

“unirradiated thorium” means thorium containing not more than 10^{-6} g of uranium-233 per gram of thorium-232;

“unirradiated uranium” means uranium containing not more than 10^{-6} g of plutonium per gram of uranium-235 and not more than 9 MBq of fission products per gram of uranium-235;

“UN number” has the meaning assigned to it in regulation 2(1) of the CDGCPL Regulations and any reference to the letters “UN” followed by a number, in relation to certain radioactive material, means the particular UN number for that material specified in paragraph 20 of the Approved Document;

“wagon” means a railway vehicle, other than a tank wagon, used for the carriage of goods.

(3) These Regulations give effect to the International Safety Regulations and, unless the context otherwise requires, expressions used in these Regulations which are also used in those Regulations have the meaning they bear in those Regulations.

(4) For the purposes of these Regulations, the operator of a freight container, tank container, tank wagon or wagon used for the carriage of radioactive material shall be—

- (a) the person who, having a place of business in Great Britain, owns the freight container, tank container, tank wagon or wagon concerned; or

- (b) if no person satisfies the requirements of sub-paragraph (a) above, the person who, having a place of business in Great Britain, acts as agent for the owner of the said freight container, tank container, tank wagon or wagon; or
 - (c) if no person satisfies the requirements of either sub-paragraph (a) or sub-paragraph (b) above, the operator of the train on which the freight container or tank container is carried or of which the tank wagon or wagon forms part.
- (5) For the purposes of paragraph (4), a person to whom a freight container, tank container, tank wagon or wagon is leased or hired shall be deemed to be the owner thereof unless the lessor or, as the case may be, the hirer has made a written agreement with the person to whom he has leased or hired the freight container, tank container, tank wagon or wagon to the effect that the lessor or hirer shall assume the responsibilities of the owner imposed by or under these Regulations.
- (6) For the purposes of these Regulations—
- (a) the members of the crew of a train shall include the driver, guard and any other person on board who has responsibilities in connection with the carriage of radioactive material on that train; and
 - (b) any reference to the carriage of any radioactive material in bulk shall be a reference to the carriage of solid radioactive material without packagings, other than in a tank.
- (7) For the purposes of these Regulations, a freight container, tank container, tank wagon or wagon shall be deemed to be engaged in the carriage of radioactive material throughout the period—
- (a) in the case where the freight container, tank container, tank wagon or wagon concerned has been loaded with the radioactive material concerned before being brought onto the railway, from the time when the said freight container, tank container, tank wagon or wagon is brought onto the railway for the purpose of carrying that material; or
 - (b) in the case where the freight container, tank container, tank wagon or wagon concerned has been brought onto the railway before the commencement of loading, from the commencement of loading the said freight container, tank container, tank wagon or wagon with the radioactive material for the purpose of carrying that material,
- until the time when the freight container, tank container, tank wagon or wagon—
- (c) is removed from the railway; or
 - (d) has been unloaded and, where necessary, cleaned, purged or decontaminated so that any of the radioactive material which remains therein is not sufficient to create a risk to the health or safety of any person.
- (8) Unless the context otherwise requires, any reference in these Regulations to—
- (a) a numbered regulation or Schedule is a reference to the regulation or Schedule in these Regulations so numbered;
 - (b) a numbered paragraph is a reference to the paragraph so numbered in the regulation or Schedule in which the reference appears.

Application

2.—(1) Subject to paragraphs (2) and (3), these Regulations shall apply to, and in relation to, the carriage of radioactive material.

(2) These Regulations shall not apply to, or in relation to, the carriage of radioactive material in the body of a person having been—

- (a) surgically implanted therein in the form of a cardiac pacemaker or other device; or
- (b) administered to that person in the form of radiopharmaceuticals.

(3) Regulations 3 to 29, 34 to 38 and 40 shall not apply to, or in relation to, the carriage of radioactive material where—

- (a) the carriage forms part of an international transport operation which is subject to any bilateral or multilateral special agreement made under the terms of article 4.3 of ADR to which the United Kingdom is a signatory and conforms with any conditions attached to the agreement concerned;
- (b) the carriage forms part of an international transport operation within the meaning of COTIF and conforms in every respect with the provisions of RID; or
- (c) the carriage forms part of an international transport operation which is subject to any bilateral or multilateral special agreement made under the terms of COTIF to which the United Kingdom is a signatory and conforms with any conditions attached to the agreement concerned.

(4) Regulations 4(a) and (d), 5 to 8, 10, 11, 12(1)(a), (2) and (3) and 13 to 16 shall not apply to or in relation to the carriage of any radioactive material where the carriage forms part of a transport operation which includes transport by road in Great Britain.