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STATUTORY INSTRUMENTS

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**2002 No. 1093**

**ATOMIC ENERGY AND  
RADIOACTIVE SUBSTANCES**

**The Radioactive Material (Road Transport) Regulations 2002**

<i>Made</i>	- - - -	<i>16th May 2002</i>
<i>Laid before Parliament</i>		<i>17th May 2002</i>
<i>Coming into force</i>		<i>7th June 2002</i>

**THE RADIOACTIVE MATERIAL (ROAD  
TRANSPORT) REGULATIONS 2002**

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*Status: This is the original version (as it was originally made).*

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1. For a mixture of radionuclides whose identities and respective activities...
2. When the identity of each radionuclide is known but the...

#### SCHEDULE 4 — CONTENTS LIMITS FOR PACKAGES

1. Excepted packages
2. An excepted package containing articles manufactured of natural uranium, depleted...
3. Industrial packages
4. Type A packages
5. Type B(U), Type B(M) and Type C packages
6. Packages containing fissile material
7. Packages containing uranium hexafluoride
8. Special arrangement transport operations

#### SCHEDULE 5 — DETERMINATION OF TRANSPORT INDEX (TI) OR CRITICALITY SAFETY INDEX (CSI)

1. The Transport Index (TI) for a package, overpack, freight container,...
2. The TI for each overpack, freight container or vehicle must...
3. The Criticality Safety Index (CSI) for packages containing fissile material...
4. The CSI for each consignment must be determined as the...

#### SCHEDULE 6 — ADDITIONAL RESPONSIBILITIES OF CONSIGNORS

1. Marking
2. For each package, other than excepted packages, the United Nations...
3. Each package of gross mass exceeding 50 kg must have...
4. Each package which conforms to— (a) an Industrial package Type...
5. Each package which conforms to a design approved under regulations...
6. Each package which conforms to a Type B(U), Type B(M)...
7. Where LSA-I or SCO-I material is contained in receptacles or...
8. Labelling
9. The labels conforming to the models in Fig 2, Fig....
10. Labelling for radioactive contents
11. Labelling for criticality safety

12. For overpacks and freight containers, the criticality safety index (CSI)...
13. Placarding
14. Where the consignment in the freight container or tank is...
15. Vehicles carrying packages, overpacks or freight containers labelled with any...
16. In the case of a vehicle without sides the placards may be affixed directly on the cargo-carrying unit provided that they are readily visible; in the case of physically large tanks or freight containers, the placards on the tanks or freight containers will suffice. In the case of vehicles which have insufficient area to allow the fixing of larger placards, the dimensions of the placard as described in Fig. 6 of Schedule 14 may be reduced to 100 mm. Any placards which do not relate to the contents must be removed.
17. Particulars of consignment
18. Declaration
19. If the intent of the declaration is already a condition...
20. The declaration must be signed and dated by the consignor...
21. The declaration must be made on the same transport document...
22. Removal or covering of labels
23. Information for carriers
24. The applicable competent authority certificates need not necessarily accompany the...
25. Notification of competent authorities
26. For each shipment listed in (a), (b), (c) or (d)...
27. The consignment notification must include— (a) sufficient information to enable...
28. The consignor is not required to send a separate notification...
29. Possession of certificates and instructions
30. “ADR” orange plate

#### SCHEDULE 7 — RESPONSIBILITIES OF CARRIERS

1. Segregation of packages etc during transport and storage in transit
2. Category II-YELLOW or III-YELLOW packages or overpacks must not be...
3. No persons other than the driver and assistants must be...
4. Stowage during transport and storage in transit
5. Provided that its average surface heat flux does not exceed...
6. Loading of freight containers and accumulation of packages, overpacks and...
- (c) the radiation level under routine conditions of transport must not...
7. Any package or overpack having either a transport index greater...
8. For consignments under exclusive use, the radiation level must not...
- (b) 2 mSv/h at any point on the outer surfaces of...
- (c) 0.1 mSv/h at any point 2 m from the vertical...
9. Segregation of packages containing fissile material during transport and storage in transit
10. Where the total sum of the criticality safety indexes on...
11. Undeliverable Consignments
12. Vehicles must be equipped in accordance with the provisions of...

#### SCHEDULE 8 — REQUIREMENTS FOR RADIOACTIVE MATERIALS AND FOR PACKAGINGS AND PACKAGES

##### PART I — REQUIREMENTS FOR LSA-III MATERIAL

*Status: This is the original version (as it was originally made).*

PART II — REQUIREMENTS FOR SPECIAL FORM RADIOACTIVE MATERIAL

1. Special form radioactive material must have at least one dimension...
2. Special form radioactive material must be of such a nature...
3. When a sealed capsule constitutes part of the special form...

PART III — REQUIREMENTS FOR LOW DISPERSIBLE RADIOACTIVE MATERIAL

PART IV — GENERAL REQUIREMENTS FOR PACKAGINGS AND PACKAGES

1. A package must be so designed in relation to its...
2. The design of a package must be such that any...
3. Any attachment or other feature on the outer surface of...
4. As far as reasonably practicable, packaging must be so designed...
5. As far as reasonably practicable, the outer layer of a...
6. No feature, not forming an integral part of a package,...
7. A package must be capable of withstanding the effects of...
8. The materials of the packaging and any components or structures...
9. All valves through which radioactive contents could otherwise escape must...
10. The design of the package must take into account ambient...
11. For radioactive material having other dangerous properties, the package design...

PART V — REQUIREMENTS FOR EXCEPTED PACKAGES

PART VI — REQUIREMENTS FOR AN INDUSTRIAL PACKAGE TYPE 1 (IP-1)

PART VII — REQUIREMENTS FOR AN INDUSTRIAL PACKAGE TYPE 2 (IP-2)

1. An industrial package Type 2 (IP-2) must be designed to...
2. An industrial package Type 2 (IP-2) must be designed—
3. A tank container may be used as an industrial package...
4. A tank may be used as an industrial package Type...
5. A freight container may be used as an industrial package...
6. An intermediate bulk container may be used as an industrial...

PART VIII — REQUIREMENTS FOR AN INDUSTRIAL PACKAGE TYPE 3 (IP-3)

1. An industrial package Type 3 (IP-3) must be designed to...
2. A tank container may be used as an industrial package...
3. A tank may be used as an industrial package Type...
4. A freight container may be used as an industrial package...
5. An intermediate bulk container may be used as an industrial...

PART IX — REQUIREMENTS FOR PACKAGES CONTAINING URANIUM HEXAFLUORIDE

1. The package must also meet the requirements prescribed elsewhere in...
2. Each package designed to contain 0.1 kg or more of...
3. Packages designed to contain 0.1 kg or more of uranium...
4. Subject to the approval of the competent authority, packages designed...

PART X — REQUIREMENTS FOR TYPE A PACKAGES

1. A Type A package must meet the requirements of Part...
2. The smallest overall external dimension of the package must not...
3. The outside of the package must incorporate a feature such...
4. Any tie-down attachments on the package must be so designed...
5. The design of the package must take into account temperatures...
6. The design and manufacturing techniques must be in accordance with...

7. The design must include a containment system securely closed by...
8. Special form radioactive material may be considered as a component...
9. If the containment system forms a separate unit of the...
10. The design of any component of the containment system must...
11. The containment system must retain its radioactive contents under a...
12. All valves, other than pressure relief valves, must be provided...
13. A radiation shield which encloses a component of the package...
14. A package must be so designed that, if it were...
15. The design of a package intended for liquid radioactive material...
16. A Type A package designed to contain liquids must, in addition—...
17. A package designed for gases must prevent loss or dispersal...

#### PART XI — REQUIREMENTS FOR TYPE B(U) PACKAGES

1. A Type B(U) package must be designed to meet the...
2. A package must be so designed that, under the ambient...
3. A package must be so designed that, under the ambient...
4. The ambient temperature must be assumed to be 38°C.
5. The solar insolation conditions must be assumed to be as...
6. A package which includes thermal protection for the purpose of...
7. A package must be so designed that, if it were...
8. A package for radioactive contents with activity greater than 105...
9. Compliance with the permitted activity release limits must not depend...
10. A package must not include a pressure relief system from...
11. A package must be so designed that if it were...
12. A package must not have a maximum normal operating pressure...
13. The maximum temperature of any surface readily accessible during transport...
14. A package containing low dispersible radioactive material must be so...
15. A package must be designed for an ambient temperature range...

#### PART XII — REQUIREMENTS FOR TYPE B(M) PACKAGES

1. A Type B(M) package must meet the requirements of Part...
2. Intermittent venting of Type B(M) packages may be permitted during...

#### PART XIII — REQUIREMENTS FOR TYPE C PACKAGES

1. A Type C package must be designed to meet the...
2. A package must be capable of meeting the assessment criteria...
3. A package must be so designed that, if it were...
4. A package must be so designed that there will be...

#### PART XIV — REQUIREMENTS FOR PACKAGES CONTAINING FISSILE MATERIAL

1. Fissile material must be packaged and shipped in such a...
2. A package containing fissile material must meet the requirements of...
3. Packages are excepted from meeting the requirements of paragraphs 4-...
- (b) each package containing uranium enriched in uranium-235 to a maximum...
- (c) each package containing liquid solutions of uranyl nitrate enriched in...
- (d) each package containing individually not more than 1 kg of...
4. A packaging for fissile material must be so designed that,...
5. For the purposes of this Part: “undamaged”, in relation to...
- (b) the tests specified in paragraphs 7 – 12 of Part...
6. In determining the subcriticality of individual packages in isolation for...
7. The individual package damaged or undamaged must be subcritical under...
8. An array of packages must be subcritical. A number, “N”...
9. In evaluating the subcriticality of fissile material in its transport...
10. The package must be designed for an ambient temperature range...

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## SCHEDULE 9 — TEST PROCEDURES

### PART I — LEACHING TEST FOR LSA-III MATERIAL AND LOW DISPERSIBLE RADIOACTIVE MATERIAL

#### PART II — TESTS FOR SPECIAL FORM RADIOACTIVE MATERIAL

1. The tests which must be performed on specimens that comprise...
2. A different specimen may be used for each of the...
3. After each test specified in paragraphs 4 – 8 below,...
4. Impact test: The specimen must drop onto the target from...
5. Percussion test: The specimen must be placed on a sheet...
6. Bending test: This test applies only to long, slender sources...
7. Heat test: The specimen must be heated in air to...
8. Specimens that comprise or simulate radioactive material enclosed in a...
9. For specimens which comprise or simulate indispersible solid material, a...
10. For specimens which comprise or simulate radioactive material enclosed in...

#### PART III — TESTS FOR LOW DISPERSIBLE RADIOACTIVE MATERIAL

1. The tests which must be performed on specimens that comprise...
2. A different specimen may be used for each of the...
3. After each test specified in paragraphs 4 – 5 below,...
4. Enhanced thermal test: This test must be the test set...
5. Impact test: This test must be the test set out...

#### PART IV — TESTS FOR PACKAGES

1. All specimens must be inspected before testing in order to...
2. The containment system of the package must be clearly specified...
3. The external features of the specimen must be clearly identified...
4. After each of the applicable tests specified in paragraphs 6...
5. Target for Drop Tests
6. Packages Designed to contain Uranium Hexafluoride
7. Tests for demonstrating ability to withstand normal conditions of transport
8. The time interval between the conclusion of the water spray...
9. Water spray test: The specimen must be subjected to a...
10. Free drop test: The specimen must drop on to the...
11. Stacking test: Unless the shape of the packaging effectively prevents...
12. Penetration test: The specimen must be placed on a rigid,...
13. Tests for Type A packages designed to carry liquids and gases
14. Tests for demonstrating ability to withstand accident conditions of transport
15. Mechanical test: The mechanical test consists of three different drop...
16. Thermal test: The thermal test must consist of—
17. Water immersion test: The specimen must be immersed under a...
18. Enhanced water immersion test
19. Water leakage test for packages containing fissile material
20. Before the specimen is subjected to the water leakage test...
21. The specimen must be immersed under a head of water...
22. Tests for Type C packages
23. Separate specimens are allowed to be used for each of...
24. Puncture/tearing test: The specimen must be subjected to the damaging...
25. Enhanced thermal test: The conditions for this test are as...
26. Impact test: The specimen must be subjected to an impact...

#### PART V — DEMONSTRATION OF COMPLIANCE

1. Performance of tests with specimens or prototypes or samples of...
2. Reference to previous satisfactory demonstrations of a sufficiently similar nature....
3. Performance of tests with models of appropriate scale incorporating those...



4. Calculation, or reasoned argument, when the calculation procedures and parameters...
5. After the specimen, prototype or sample has been subjected to...

#### SCHEDULE 10 — APPLICATION REQUIREMENTS

##### PART I — APPLICATION FOR APPROVAL OF DESIGN FOR SPECIAL FORM RADIOACTIVE MATERIAL OR LOW DISPERSIBLE RADIOACTIVE MATERIAL

1. A detailed description of the radioactive material or, if a...
2. A detailed statement of the design of any capsule to...
3. A statement of the tests which have been done and...
4. Evidence of a suitable quality assurance programme.
5. Any proposed pre-shipment actions for use in the consignment of...

##### PART II — APPLICATION FOR PACKAGE DESIGN APPROVAL CERTIFICATE FOR A TYPE B(U) OR TYPE C PACKAGE

1. A detailed description of the proposed radioactive contents with reference...
2. A detailed statement of the design, including complete engineering drawings...
3. A statement of the tests which have been done and...
4. The proposed operating and maintenance instructions for the use of...
5. If the package is designed to have a maximum normal...
6. Where the proposed radioactive contents are irradiated fuel, the applicant...
7. Any special stowage provisions necessary to ensure the safe dissipation...
8. A reproducible illustration not larger than 21 cm × 30...
9. A specification of the applicable quality assurance programme.
10. Evidence of a suitable emergency plan.

##### PART III — APPLICATION FOR PACKAGE DESIGN APPROVAL CERTIFICATE FOR A TYPE B(M) PACKAGE

1. The information required in Part II for Type B(U) or...
2. A list of the requirements specified in paragraph 5 of...
3. Any proposed supplementary operational controls to be applied during transport...
4. A statement relative to any restrictions on the mode of...
5. The maximum and minimum ambient conditions (temperature, solar radiation) expected...

##### PART IV — APPLICATION FOR PACKAGE DESIGN APPROVAL CERTIFICATE FOR FISSILE MATERIAL

1. All information necessary to satisfy the Secretary of State that...
2. A specification of the applicable quality assurance programme.

##### PART V — APPLICATION FOR A SHIPMENT APPROVAL CERTIFICATE

1. The period of time, related to the shipment, for which...
2. The actual radioactive contents, the expected modes of transport and...
3. The details of how the precautions and administrative or operational...
4. Evidence of a suitable emergency plan.

##### PART VI — APPLICATION FOR A SPECIAL ARRANGEMENT APPROVAL CERTIFICATE

1. All the information necessary to satisfy the competent authority that...
2. A statement of the respects in which, and justification of...
3. A statement of any special precautions or special administrative or...
4. Evidence of a suitable emergency plan.

#### SCHEDULE 11 — DETERMINATION OF CATEGORIES

**Status:** This is the original version (as it was originally made).

SCHEDULE 12 — CONTENTS OF APPROVAL CERTIFICATES.

PART I — SPECIAL FORM RADIOACTIVE MATERIAL AND LOW  
DISPERSIBLE RADIOACTIVE MATERIAL APPROVAL  
CERTIFICATES

PART II — SPECIAL ARRANGEMENT APPROVAL CERTIFICATES

PART III — SHIPMENT APPROVAL CERTIFICATES

PART IV — PACKAGE DESIGN APPROVAL CERTIFICATES

PART V — COMBINED PACKAGE DESIGN APPROVAL AND SHIPMENT  
APPROVAL CERTIFICATES.

SCHEDULE 13 — CONTENTS OF REGULAR CONSIGNMENT CERTIFICATE

1. A statement that the certificate is a regular consignment certificate....
2. The issue date.
3. The information listed in paragraph 17 of Schedule 6 with...

SCHEDULE 14 — FIGURES

Explanatory Note