### WGI Reference Material on Freight Container and Overpack

**Definitions**

**Cargo transport unit** means a road transport tank or freight vehicle, a railway transport tank or freight wagon, a multimodal freight container or portable tank, or a MEGC.

**Freight container** means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or other modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the International Convention for Safe Containers (CSC), 1972, as amended. The term “freight container” includes neither vehicle nor packaging. However a freight container that it carried on a chassis is included. For freight containers for the transport of Class 7 material, a freight container may be used as a packaging.

In addition: Small freight container means a freight container that has an internal volume of not more than 3 m³. Large freight container means a freight container that has an internal volume of more than 3 m³.

**Freight container** means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or other modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the International Convention for Safe Containers (CSC), 1972, as amended. The term “freight container” includes neither vehicle nor packaging. However a freight container that it carried on a chassis is included. For freight containers for the transport of Class 7 material, a freight container may be used as a packaging.

In addition: Small freight container means a freight container that has an internal volume of not more than 3 m³. Large freight container means a freight container that has an internal volume of more than 3 m³.

**Freight container** means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or other modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the International Convention for Safe Containers (CSC), 1972, as amended. The term “freight container” includes neither vehicle nor packaging. However a freight container that it carried on a chassis is included. For freight containers for the transport of radioactive material, a freight container may be used as a packaging. In addition: Small freight container means a freight container that has an internal volume of not more than 3 m³. Large freight container means a freight container that
"Large container" means
(a) A container which does not meet the definition of a small container;
(b) In the meaning of the CSC, a container of a size such that the area enclosed by the four outer bottom corners is either
   (i) at least 14 m² (150 square feet); or
   (ii) at least 7 m² (75 square feet) if fitted with top corner fittings;

"Closed container" means a totally enclosed container having a rigid roof, rigid side walls, rigid end walls and a floor. The term includes containers with an opening roof where the roof can be closed during transport;

"Open container" means an open top container or a platform based container;

"Sheeted container" means an open container equipped with a sheet to protect the goods loaded;

A "swap body" is a container which, in accordance with EN 283:1991 has the following characteristics:
- from the point of view of mechanical strength, it is only build for carriage on a wagon or a vehicle on land or by roll-on roll-off ship;
- it cannot be stacked;
- it can be removed from vehicles by means of equipment on board the vehicle and on its own supports, and can be reloaded;

NOTE: The term "container" does not cover conventional packagings, IBCs, tank-container or vehicles. Nevertheless, a container may be used as a packaging for the carriage of radioactive material.

Exclusive use
"Exclusive use", for the transport of radioactive material, means the sole use, by a single consignor, of a conveyance or a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by these Regulations.

05 Exclusive use
Exclusive use shall mean the sole use, by a single consignor, of a conveyance or a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by these Regulations.

Exclusive use, for the transport of radioactive material, means the sole use, by a single consignor, of a conveyance or a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by ADR;

Exclusive use, for the transport of Class 7 material, means the sole use, by a single consignor, of a vehicle or a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by the provisions of this Code;

Exclusive use. For the transport of radioactive material, the sole use, by a single shipper, of an aircraft or of a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the shipper or consignee, where so required by these Instructions.
Overpack means an enclosure used by a single consignor to contain one or more packages and to form one unit for convenience of handling and stowage during transport.

“Overpack” means an enclosure used by a single consignor in the case of more packages, consolidated into a single unit easier to handle and stow during carriage:

Example of overpacks:
(a) A loading tray such as a pallet, on which several packages are placed and secured by plastic strip, shrink or stretch wrapping or other appropriate means;
(b) An outer protective packaging such as a box or crate;

Overpack means an enclosure used by a single consignor to contain one or more packages and to form one unit for the convenience of handling and stowage during transport. Examples of overpacks are a number of packages either:
(a) Placed or stacked on to a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping or other suitable means; or
(b) Placed in a protective outer packaging such as a box or crate;

Overpack. An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. Note: - An unit load device is not included in this definition.

Determination of transport index

Chapter 5.1 General provisions

Table 5.1.5.3.1: The transport index (TI) for a package, overpack or freight container, must be the number derived in accordance with the following procedure:

1. Determine the maximum radiation level in units of millisieverts per hour (mSv/h) at a distance of 1 m from the external surfaces of the package, overpack, freight container or unpackaged LSA-I and SCO-I. The value determined shall be multiplied by 100 and the resulting number is the TI. For uranium and thorium ores and their concentrates, the maximum radiation level at any point 1 m from the external surface of the load may be taken as:
(i) 0.4 mSv/h for ores and physical concentrates of uranium and thorium;
(ii) 0.3 mSv/h for chemical concentrates of thorium;
(iii) 0.02 mSv/h for chemical concentrates of uranium, other than uranium hexafluoride.

2. For tanks, freight containers and unpackaged LSA-I and SCO-I, the value determined in step (a) shall be multiplied by the appropriate factor from Table 7.

3. The value obtained in steps (a) and (b) shall be rounded up to the first decimal place (for example, 1.13 becomes 1.2), except that a value of 0.05 or less may be considered as zero.

3.1 The transport index (TI) for a package, overpack or freight container, or for unpackaged LSA-I or SCO-I, shall be the number derived in accordance with the following procedure:

1. Determine the maximum radiation level in units of millisieverts per hour (mSv/h) at a distance of 1 m from the external surfaces of the package, overpack, freight container or unpackaged LSA-I and SCO-I. The value determined shall be multiplied by 100 and the resulting number is the transport index. For uranium and thorium ores and their concentrates, the maximum radiation level at any point 1 m from the external surface of the load may be taken as:
0.4 mSv/h for ores and physical concentrates of uranium and thorium;
0.3 mSv/h for chemical concentrates of thorium;
0.02 mSv/h for chemical concentrates of uranium, other than uranium hexafluoride;

2. For tanks, freight containers and unpackaged LSA-I and SCO-I, the value determined in step (a) shall be multiplied by the appropriate factor from Table 5.1.5.3.1.

3.1.3 The value obtained in 5.1.5.3.1 and 5.1.5.3.1.2 above shall be rounded up to the first decimal place (e.g., 1.13 becomes 1.2), except that a value of 0.05 or less may be considered as zero.
12 524. The TI for each overpack, freight container or conveyance shall be determined as either the sum of the TIs of all the packages contained, or by direct measurement of radiation level, except in the case of non-rigid overpacks, for which the TI shall be determined only as the sum of the TIs of all the packages.

5.1.5.3.2 The transport index for each overpack, freight container or conveyance shall be determined as either the sum of the TIs of all the packages contained, or by direct measurement of radiation level, except in the case of non-rigid overpacks, for which the TI shall be determined only as the sum of the TIs of all the packages.

5.1.5.3.2 The transport index for each overpack, container or conveyance shall be determined as either the sum of the TIs of all the packages contained, or by direct measurement of radiation level, except in the case of non-rigid overpacks, for which the TI shall be determined only as the sum of the TIs of all the packages.

5.1.5.3.2 The transport index for each overpack, freight container or conveyance shall be determined as either the sum of the TIs of all the packages contained, or by direct measurement of radiation level, except in the case of non-rigid overpacks, for which the TI shall be determined only as the sum of the TIs of all the packages.

5.1.5.3.3 The criticality safety index for each overpack or container shall be determined as the sum of the CSIs of all the packages contained. The same procedure shall be followed for determining the total sum of the CSIs in a consignment or aboard a conveyance.

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5.1.5.3.3 The criticality safety index for each overpack or freight container shall be determined as the sum of the CSIs of all the packages contained. The same procedure shall be followed for determining the total sum of the CSIs in a consignment or aboard a conveyance.

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20 MARKING, LABELLING AND PLACARDING

CHAPTER 5.2 MARKING AND LABELLING

Chapter 5.2 Marking and labeling of packages including IBCs

Chapter 2 PACKAGE MARKINGS

21 530. For each package or overpack, the UN number and proper shipping name shall be determined (see Table 1). In all cases of international transport of packages requiring competent authority approval of design or shipment, for which different approval types apply in the different countries concerned by the shipment, the UN number, proper shipping name, categorization, labelling and marking shall be in accordance with the certificate of the country of origin of design.

2.1 THE REQUIREMENT TO MARK

Unless otherwise provided in these Instructions, packages of dangerous goods and overpacks containing dangerous goods offered for transport by air must be marked as required by this Chapter.

2.2 APPLICATION OF MARKINGS

2.2.1 All markings must be so placed on the packagings that they are not covered or obscured by any part of or attachment to the packaging or any other label or marking.

2.2.2 All package markings required by

1): a) must be durable and printed or otherwise marked on, or affixed to, the external surface of the package;
b) must be readily visible and legible;
c) must be able to withstand open weather exposure without a substantial reduction in effectiveness;
d) must be displayed on a background of contrasting colour; and
e) must not be located with other
### Marking

#### 5.2.1 Marking

5.2.1.1 Unless provided otherwise in these Regulations, the proper shipping name for the dangerous goods as determined in accordance with 3.1.2 and the corresponding UN number preceded by the letters “UN”, shall be displayed on each package. The UN number and the letters “UN” shall be at least 12 mm high, except for packages of 30 litres capacity or less than 30 kg maximum net mass and for cylinders of 60 litres water capacity when they shall be at least 6 mm in height and except for packages of 5 litres or 5 kg or less when they shall be of an appropriate size. In case of unpackaged articles the marking shall be displayed on the article, on its cradle or on its handling, storage or launching device. For goods of Division 1.4, Compatibility Group S, the division and compatibility group letter shall also be marked unless the label for 1.4S is displayed. A typical package marking is:

- Corrosive liquid, acidic, organic, n.o.s. (Caprylyl chloride) UN 3265.

#### 5.2.1 Marking of packages

5.2.1.1 Unless provided otherwise in ADR, the UN number corresponding to the dangerous goods contained, preceded by the letters “UN” shall be clearly and durably marked on each package. The UN number and the letters “UN” shall be at least 12 mm high, except for packages of 30 litres capacity or less than 30 kg maximum net mass and for cylinders of 60 litres water capacity when they shall be at least 6 mm in height and except for packages of 5 litres or 5 kg or less when they shall be of an appropriate size. In case of unpackaged articles the marking shall be displayed on the article, on its cradle or on its handling, storage or launching device.

5.2.1.1 Unless provided otherwise in this Code, the Proper Shipping Name for the dangerous goods as determined in accordance with 3.1.2 and the corresponding UN Number preceded by the letters “UN”, shall be displayed on each package. The UN Number and the letters “UN” shall be at least 12 mm high, except for packagings of 30 L or 30 kg capacity or less and except for cylinders of 60 L water capacity or less, when they shall be at least 6 mm in height and for packages of 5 L or 5 kg or less when they shall be of an appropriate size. In case of unpackaged articles the marking shall be displayed on the article, on its cradle or on its handling, storage or launching device.

5.2.1.2 All package marking required by 5.2.1.

(a) Shall be readily visible and legible;  
(b) Shall be able to withstand open weather exposure without a substantial reduction in effectiveness;  
(c) Shall be displayed on a background of contrasting colour on the external surface of the package; and  
(d) Shall not be located with other package markings that could substantially reduce their effectiveness.

5.2.1.2 All package marking required by this Chapter.  
(a) shall be readily visible and legible;  
(b) shall be able to withstand open weather exposure without a substantial reduction in effectiveness.

5.2.1.2 All package marking required by 5.2.1.

.1 shall be readily visible and legible;  
.2 shall be such that this information will still be identifiable on packages surviving at least 3 months’ immersion in the sea. In considering suitable marking methods, account shall be taken of the durability of the packaging materials used and the surface of the package;  
.3 shall be displayed on a background of contrasting colour on the external surface of the package; and  
.4 shall not be located with other package markings that could substantially reduce their effectiveness.
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<td>Intermediate bulk containers of more than 450 litres capacity and large packagings shall be marked on two opposing sides.</td>
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<td>5.2.1.4</td>
<td>Intermediate bulk containers of more than 450 litres capacity and large packagings shall be marked on two opposing sides.</td>
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<td>5.2.1.5.1</td>
<td>Each package shall be legibly and durably marked on the outside of the packaging with an identification of either the consignor or consignee, or both. Each overpack shall be legibly and durably marked on the outside of the overpack with an identification of either the consignor or consignee, or both, unless these markings of all the packages within the overpack are clearly visible.</td>
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<td>31</td>
<td>5.2.1.6</td>
<td>Special marking provisions for class 7</td>
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<td></td>
<td>5.2.1.5.1</td>
<td>Each package shall be legibly and durably marked on the outside of the packaging with an identification of either the consignor or consignee, or both. Each overpack shall be legibly and durably marked on the outside of the overpack with an identification of either the consignor or consignee, or both, unless these markings of all the packages within the overpack are clearly visible.</td>
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### 2.4.2 Shipper and consignee identification

The name and address of the person who offers the dangerous goods for transport by air and of the consignee must be provided on each package and should be located on the same surface of the package near the proper shipping name marking, if the package dimensions are adequate.

### 2.4.10 Marking of overpacks

An overpack must be marked with the word “Overpack”, with the proper shipping name, UN number, and special handling instructions appearing on interior packages for each item of dangerous goods contained in the overpack unless markings and labels representative of all dangerous goods in the overpack are visible, except as required in 3.2.6 and 3.5.1.1 h) to i). Packaging specification markings must not be reproduced on the overpack. When packages containing dangerous goods in limited quantities are placed in an overpack, the overpack must also be marked with the limited quantity marking shown in Figure 3-1 unless the markings representative of all dangerous goods in the overpack are visible. The lettering of the “Overpack” marking must be at least 12 mm high.

### 3.1 The requirement to label

3.1.1 Where articles or substances are specifically listed in the Dangerous Goods List (Table 3-1), a danger class label must be affixed for the hazard shown in column 3 of Table 3-1. A subsidiary risk label must also be affixed for any risk indicated by a class or division number in column 4 of Table 3-1. However, special provisions indicated in column 7 may also require a subsidiary risk label where no subsidiary risk is indicated in column 4 or may...
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<td>5.2.2.1.6 Except as provided in 5.2.2.2.1.2, each label shall:</td>
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<td>(a) Be located on the same surface of the package near the proper shipping name marking, if package dimensions are adequate;</td>
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<tr>
<td>(b) Be so placed on the packaging that they are not covered or obscured by any part or attachment to the packaging or any other label or marking; and</td>
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<tr>
<td>(c) When primary and subsidiary risk labels are required, be displayed next to each other.</td>
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Where a package is of such an irregular shape or small size that a label cannot be satisfactorily affixed, the label may be attached to the package by a securely affixed tag or other suitable means.

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<th>5.2.2.1.7 Intermediate bulk containers of more than 450 litres capacity and large packagings shall be labelled on two opposing sides.</th>
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<tr>
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<th>5.2.2.1.8 Labels shall be affixed on a surface of contrasting colour.</th>
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<th>5.2.2.1.12 Special provisions for the labelling of radioactive material</th>
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<tr>
<td>5.2.2.1.12.1 Except when enlarged labels are used in accordance with 5.3.1.1.5.1, each package, overpack and freight container containing radioactive material shall bear the labels conforming to the applicable models Nos. 7A, 7B or 7C, as indicated in the Dangerous Goods List.</td>
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</table>

3.1.2 Labels identifying the primary and subsidiary risks of the dangerous goods must bear the class or division number as required in 3.5.1.

3.1.3 All labels must be able to withstand open weather exposure without a substantial reduction in effectiveness.

3.2 APPLICATION OF LABELS

3.2.1 The labels required to be displayed on packages of dangerous goods are identified in the Dangerous Goods List for articles and substances specifically listed by name and for articles and substances not specifically listed by name which are covered by generic or n.o.s. entries.

3.2.5 Packages containing radioactive material having additional hazardous characteristics must also be labelled to indicate those characteristics.

3.2.6 Except when enlarged labels are used in accordance with 3.6, each package, overpack and freight container containing radioactive material must bear
conforming to the model in Fig. 5. Any labels that do not relate to the contents shall be removed or covered. For radioactive material having other dangerous properties, see para. 507.

539. The labels conforming to the applicable models in Figs 2–4 shall be affixed to two opposite sides of the outside of a package or overpack or on the outside of all four sides of a freight container or tank. The labels conforming to the model in Fig. 5, where applicable, shall be affixed adjacent to the labels conforming to the applicable models Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

According to the appropriate category. Labels shall be affixed to two opposite sides on the outside of the package or overpack or on the outside of all four sides of a freight container or tank. In addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels which conform to model No. 7E; such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

Labels shall be affixed to two opposite sides on the outside of the package or overpack or on the outside of all four sides of a freight container or tank. Each overpack containing radioactive material shall bear at least two labels on opposite sides of the overpack. In addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels conforming to model No. 7E; such labels, where applicable shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

Labels shall be affixed to two opposite sides on the outside of the package or overpack or on the outside of all four sides of a freight container or tank. Each overpack containing radioactive material must bear at least two labels on opposite sides of the outside of the package or overpack or on the outside of all four sides of a freight container. Each overpack containing radioactive material must bear at least two labels on opposite sides of the outside of the overpack. In addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 must bear labels conforming to the model shown in Figure 5-22, such labels, where applicable shall be affixed adjacent to the labels conforming to Figure 5-19, 5-20, or 5-21, as applicable. Labels must not cover the markings specified in Chapter 2. Any labels which do not relate to the contents must be removed or covered.

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Labelling for radioactive contents

540. Each label conforming to the applicable models in Figs 2–4 shall be completed with the following information:

(a) Contents:
   (i) Except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO shall be shown following the name(s) of the radionuclide(s). The terms “LSA-II”, “LSA-III”, “SCO-I” and “SCO-II” shall be used for this purpose.
   (ii) For LSA-I material, the term “LSA-I” is all that is necessary; the name of the radionuclide is not necessary.

(b) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol (see Annex II). For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels which conform to model No. 7E; such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

3.5 LABEL SPECIFICATIONS

3.5.1 Class hazard label specifications

3.5.1.1 Labels must satisfy the provisions of this section and conform, in terms of colour, symbols and general format, to the specimen labels shown in Figures 5-3 to 5-24. Class hazard labels must conform to the following specifications:

Labelling of radioactive material

b) Each label conforming to the applicable Figure 5-19, 5-20 or 5-21 must be completed with the following information:

1) Contents:
   A) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2-12, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO shall be shown following the name(s) of the radionuclide(s). The terms “LSA-II”, “LSA-III”, “SCO-I” and “SCO-II” shall be used for this purpose.
   B) For LSA-I material, the term “LSA-I” is all that is necessary; the name of the radionuclide is not necessary.

2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol (see Annex II). For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels which conform to model No. 7E; such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

b) Each label conforming to the applicable Figure 5-19, 5-20 or 5-21 must be completed with the following information:

1) Contents:
   A) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2-12, using the Symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO shall be shown following the name(s) of the radionuclide(s). The terms “LSA-II”, “LSA-III”, “SCO-I” and “SCO-II” shall be used for this purpose.
   B) For LSA-I material, the term “LSA-I” is all that is necessary; the name of the radionuclide is not necessary.

2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol (see Annex II). For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels which conform to model No. 7E; such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.

b) Each label conforming to the applicable Figure 5-19, 5-20 or 5-21 must be completed with the following information:

1) Contents:
   A) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2-12, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO shall be shown following the name(s) of the radionuclide(s). The terms “LSA-II”, “LSA-III”, “SCO-I” and “SCO-II” shall be used for this purpose.
   B) For LSA-I material, the term “LSA-I” is all that is necessary; the name of the radionuclide is not necessary.

2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol (see Annex II). For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 2.7.2.3.5 shall bear labels which conform to model No. 7E; such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C. Labels shall not cover the markings specified in 5.2.1. Any labels which do not relate to the contents shall be removed or covered.
place of activity.  

(c) For overpacks and freight containers, the “contents” and “activity” entries on the label shall bear the information required in para. 540(a) and 540(b), respectively, totalled together for the entire contents of the overpack or freight container except that on labels for overpacks or freight containers containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

(d) TI: The number determined in accordance with paras 523 and 524 (no TI entry is required for Category I-WHITE).  

or multiples thereof, may be used in place of activity.  

(c) For overpacks and freight containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2(a) and 5.2.2.1.12.2(b), respectively, totalled together for the entire contents of the overpack or freight container except that on labels for overpacks or freight containers containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

(d) Transport index: The number determined in accordance with 5.1.5.3.1 and 5.1.5.3.2, respectively, totalled together for the entire contents of the overpack or freight container containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

place of activity.  

(c) For overpacks and containers the “contents” and “activity” entries on the label shall bear the information required in (a) and (b) above, respectively, totalled together for the entire contents of the overpack or container except that on labels for overpacks or containers containing different radionuclides, such entries may read “See Transport Documents”.  

(d) Transport index: The number determined in accordance with 5.1.5.3.1 and 5.1.5.3.2 (no transport index entry is required for category I-WHITE).  

grams (g), or multiples thereof, may be used in place of activity.  

For overpacks and containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2.1 and 5.2.2.1.12.2.2, respectively, totalled together for the entire contents of the overpack or freight container except that on labels for overpacks or freight containers containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

For overpacks and containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2(a) and 5.2.2.1.12.2(b), respectively, totalled together for the entire contents of the overpack or freight container containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

For overpacks and freight containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2.1 and 5.2.2.1.12.2.2, respectively, totalled together for the entire contents of the overpack or freight container containing mixed loads of packages containing different radionuclides, such entries may read “See transport documents”.  

For overpacks and freight containers the “contents” and “activity” entries on the label may read “See Transport Documents”.  

For overpacks and freight containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2.1 and 5.2.2.1.12.2.2, respectively, totalled together for the entire contents of the overpack or freight container containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”.  

For overpacks and freight containers, the “contents” and “activity” entries on the label shall bear the information required in 5.2.2.1.12.2(a) and 5.2.2.1.12.2(b), respectively, totalled together for the entire contents of the overpack or freight container containing mixed loads of packages containing different radionuclides, such entries may read “See transport documents”.  

“LSA-F” is all that is necessary; the name of the radionuclide is not necessary;  

2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol. For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in place of activity;  

3) For overpacks and freight containers the “contents” and “activity” entries on the label may be used for category I-

WHITE).
### 3.5.2 Handling labels

3.5.2.1 Handling label specifications

An illustration of each of the handling labels showing the approved design and colour is given in Figures 5-25 to 5-27 and Figures 5-29 to 5-32. The minimum label dimensions are shown in the figures. Where dimensions or features are not specified, these must be in approximate proportion to those shown; however:

a) labels having dimensions not smaller than half of those indicated may be used on packages containing infectious substances when the packages are of dimensions such that they can only bear smaller labels; and

b) orientation labels may meet the specification of either Figure 5-27 or ISO Standard 780:1997.

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**Chapter 5.3 Placarding and marking of cargo transport units**

**5.3.1 Placarding provisions**

**5.3.1.1 General provisions**

1. Enlarged labels (placards) and marks and signs shall be affixed to the exterior surfaces of a cargo transport units to provide a warning that the contents of the unit are dangerous goods and present risks, unless the labels and/or marks affixed to the packages are clearly visible from the exterior of the cargo transport unit;

2. the methods of placarding and marking as required in 5.3.1.4 and 5.3.2 on cargo transport units shall be such that
this information will still be identifiable on cargo transport units surviving at least three months' immersion in the sea. In considering suitable marking methods, account shall be taken of the ease with which the surface of the cargo transport unit can be marked; and all placards, orange panels, marks and signs shall be removed from cargo transport units or masked as soon as both the dangerous goods or their residues which led to the application of those placards, orange panels, marks or signs are discharged.

5.3.1.1 Placarding provisions

5.3.1.1.2 Placards shall be affixed to the exterior surface of cargo transport units to provide a warning that the contents of the unit are dangerous goods and present risks. Placards shall correspond to the primary risk of the goods contained in the cargo transport unit except that:

(a) Placards are not required on cargo transport units carrying any quantity of explosives of Division 1.4, Compatibility Group S; and

(b) Placards indicating the highest risk only need be affixed on cargo transport units carrying substances and articles of more than one division in Class 1.

Placards shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.

5.3.1.1 General provisions

5.3.1.1.1 As and when required in this section, placards shall be affixed to the exterior surface of containers, MEGCs, MENUs, tank-containers, portable tanks and vehicles. Placards shall correspond to the labels required in Column (5) and, where appropriate, Column (6) of Table A of Chapter 3.2 for the dangerous goods contained in the container, MEGS, MENU, tank-container, portable tank or vehicle and shall conform to the specifications given in 5.3.1.7. Placards shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.

5.3.1.1.2 Placards shall be affixed to the exterior surfaces of a cargo transport units to provide a warning that the contents of the unit are dangerous goods and present risks. Placards shall correspond to the primary risk of the goods contained in the cargo transport unit except that:

.1 placards are not required on cargo transport units carrying any quantity of explosives of division 1.4, compatibility group S; and

.2 placards indicating the highest risk only need be affixed on cargo transport units carrying substances and articles of more than one division in class 1.

Placards shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.

5.3.1.1.3 Placards shall also be displayed for those subsidiary risks for which a subsidiary risk label is required according to 5.2.2.1.2. However, cargo transport units containing goods of more than one class need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary risk placard.

5.3.1.1.4 Containers, MEGCs, MENUs, tank-containers, portable tanks or vehicles containing goods of more than one class need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary or subsidiary risk placard.

5.3.1.1.3 Placards shall also be displayed for those subsidiary risks for which a subsidiary risk label is required according to 5.2.2.1.2. However, cargo transport units containing goods of more than one class need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary risk placard.

5.3.1.1.4 Cargo transport units carrying dangerous goods or the residue of dangerous goods in unpurged tanks or

5.3.1.2 Placarding of containers, MEGCs, tank-containers and portable tanks

NOTE: This sub-section does not apply to

5.3.1.4 Placarding requirements

5.3.1.1.4.1 A cargo transport unit containing dangerous goods or residues of dangerous goods shall clearly display
empty uncleaned bulk containers shall
display placards clearly visible on at least
two opposing sides of the units and in any
case in such position as may be seen by all
those involved in the loading or unloading
process. Where the cargo transport unit
has a multiple compartment tank which is
carrying two or more dangerous goods
and/or the residues of dangerous goods,
appropriate placards shall be displayed
along each side at the position of the
relevant compartments.

| swap bodies, except tank swap bodies or
| swap bodies carried in combined road/rail
| transport. |
| The placards shall be affixed to both sides
| and at each end of the container, MEGC,
tank-container or portable tank. |
| When the tank-container or portable tank
| has multiple compartments and carries
two or more dangerous goods, the
| appropriate placards shall be displayed
| along each side at the position of the
| relevant compartments and one placard of
each model shown on each side at both
| ends. |

| 5.3.1.3 Placarding of vehicles carrying
| containers, MEGCs, tank-container or
| portable tanks
| NOTE: This sub-section does not apply to
| the placarding of vehicles carrying swap
| bodies other than tank swap bodied or
| than swap bodies carried in combined
| road/rail transport; for such vehicles, see
| 5.3.1.5. |
| If the placards affixed to the containers,
| MEGCs, tank-container or portable tanks
| are not visible from outside the carrying
| vehicles, the same placards shall be also
| be affixed to both sides and at the rear of
| the vehicle. Otherwise, no placard need be
| affixed on the carrying vehicle. |

| 5.3.1.5 Placarding of vehicles carrying
| packages only
| NOTE: This sub-section applies also to
| vehicles carrying swap bodies loaded with
| packages, except for combined road/rail
| transport; for combined road/rail
| transport, see 5.3.1.2 and 5.3.1.3. |
| 5.3.1.5.1 For vehicles carrying packages
| containing substances or articles of Class
| 1 (other than of Division 1.4,
| compatibility group S), placards shall be
| affixed to both sides and at the rear of
| the vehicle. |
| 5.3.1.5.2 For vehicles carrying radioactive
| material of Class 7 in packagings or IBCs
| placards as follows:
| 1 a freight container, semi-trailer or
| portable tank: one on each side and
| one on each end of the unit. Portable
| tanks having a capacity of less than
| 3,000 litres may be placarded or,
| alternatively, may be labeled instead,
on only two opposite sides; |
| 2 a railway wagon: at least on each side; |
| 3 a multiple-compartment tank
| containing more than one dangerous
| substance or their residues: along
| each side at the positions of the
| relevant compartments; and |
| 4 any other cargo transport unit: at least
| on both sides and on the back of the
| unit. |
59 543. Large freight containers carrying packages other than excepted packages, and tanks shall bear four placards that conform to the model given in Fig. 6. The placards shall be affixed in a vertical orientation to each side wall and to each end wall of the *large freight container* or *tank*. Any placards that do not relate to the contents shall be removed. Instead of using both labels and placards, it is permitted, as an alternative, to use enlarged labels only, where appropriate, as shown in Figs 2–4, except having the minimum size shown in Fig. 6.

<table>
<thead>
<tr>
<th>Clause</th>
<th>Text</th>
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<tbody>
<tr>
<td>5.3.1.1.5</td>
<td>Special provisions for Class 7</td>
</tr>
<tr>
<td>5.3.1.1.5.1</td>
<td>Large freight containers carrying packages other than excepted packages, and tanks shall bear four placards that conform to the model No. 7D given in Figure 5.3.1. The placards shall be affixed in a vertical orientation to each side wall and to each end wall of the <em>large freight container</em> or <em>tank</em>. Any placards that do not relate to the contents shall be removed. Instead of using both labels and placards, it is permitted as an alternative to use enlarged labels only, as shown in label models Nos. 7A, 7B and 7C, except having the minimum size shown in Figure 5.3.1.</td>
</tr>
</tbody>
</table>

5.3.1.1.3 For Class 7, the primary risk placard shall conform to model No. 7D as specified in 5.3.1.7.2. This placard is not required for vehicles or containers carrying excepted packages and for small containers. Where both Class 7 labels and placards would be required to be affixed to vehicles, containers, MEGCs, tank-containers or portable tanks, an enlarged label corresponding to the required label of model No. 7A, 7B or 7C may be displayed instead of placard No. 7D to serve both purposes. In that case, the dimensions shall be not less than 250 mm by 250 mm.

5.3.1.1.5 Special provisions for Class 7

5.3.1.1.5.1 Large freight containers carrying packages other than excepted packages, and tanks shall bear four placards which conform to the model No. 7D given in figure. The placards shall be affixed in a vertical orientation to each side wall and to each end wall of the large freight container or tank. Any placards that do not relate to the contents shall be removed. Instead of using both labels and placards, it is permitted as an alternative to use enlarged labels only, as shown in label models Nos. 7A, 7B and 7C, except having the minimum size shown in Figure 5.3.1.

<table>
<thead>
<tr>
<th>Clause</th>
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<tr>
<td>3.6</td>
<td>PLACARDING OF LARGE FREIGHT CONTAINERS CONTAINING RADIOACTIVE MATERIAL</td>
</tr>
<tr>
<td>3.6.1</td>
<td>Special provisions for Class 7</td>
</tr>
<tr>
<td>3.6.1.1</td>
<td>Large freight containers carrying packages (other than excepted packages) and tanks must bear four placards which conform with Figure 5-27. The placards must be affixed in a vertical orientation to each side wall and each end wall of the large freight container. Any placards which do not relate to the contents must be removed. Instead of using both labels and placards, it is permitted as an alternative to use enlarged labels only, as shown in Figures 5-18, 5-19 and 5-20, and where appropriate Figure 5-21, with dimensions as required for the placard in Figure 5-27.</td>
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<th>Clause</th>
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<tbody>
<tr>
<td>3.6.1.2</td>
<td>For Class 7, the placard must have minimum overall dimensions of 250 mm by 250 mm with a black line running 5 mm inside the edge and parallel with it, and must be otherwise as shown in Figure 5-27. The number 7 must not be less than 25 mm high. The background colour of the upper half of the placard must be yellow and of the lower half white, the colour of the trefoil and the printing must be black. The use of the word “Radioactive” in the bottom half is optional to allow the use of this placard to display the appropriate United Nations number for the consignment.</td>
</tr>
</tbody>
</table>

5.3.1.1.5 Placards which do not relate to the dangerous goods being carried, or residues thereof, shall be removed or covered.

5.3.1.1.6 When the placarding is affixed to folding panels, they shall be designed and secured so that they cannot unfold or come loose from the holder during carriage (especially as a result of impacts or unintentional actions).
5.3.1.1.5.2 Rail and road vehicles carrying packages, overpacks or freight containers labelled with any of the labels shown in 5.2.2.2.2 as models Nos. 7A, 7B, 7C or 7E, or carrying consignments under exclusive use, shall display the placard shown in Figure 5.3.1 (model No. 7D) on each of:
(a) the two external lateral walls in the case of a rail vehicle;
(b) the two external lateral walls and the external rear wall in the case of a road vehicle.
In the case of a vehicle without side 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 shall suffice. In the case of vehicles which have insufficient area to allow the fixing of larger placards, the dimension of the placard as described in Figure 5.3.1 may be reduced to 100mm. Any placards which do not relate to the contents shall be removed.

544. Where the consignment in the freight container or tank is unpackaged LSA-I or SCO-I or where a consignment in a freight container is required to be shipped under exclusive use and is packaged radioactive material with a single UN number, the appropriate UN number for the consignment (see Table 1) shall also be displayed, in black digits not less than 65 mm high, either:
(a) In the lower half of the placard shown in Fig. 6 and against the white background; or
(b) On the placard shown in Fig. 7.
When the alternative given in (b) is used, the subsidiary placard shall be affixed immediately adjacent to the main placard, on all four sides of the freight container or tank.
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<td>5.3.2</td>
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<td>5.3.2.0 Display of Proper Shipping Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1</td>
<td>5.3.2.0.1 The Proper Shipping Name of the contents shall be durably marked on at least both sides of:</td>
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<tr>
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<td></td>
<td></td>
<td>.1 tank transport units containing dangerous goods;</td>
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<td></td>
<td>.2 bulk containers containing dangerous goods; or</td>
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<td></td>
<td>.3 any other cargo transport unit containing packaged dangerous goods of a single commodity for which no placard, UN Number or marine pollutant mark is required. Alternatively, the UN Number may be displayed.</td>
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<td></td>
<td>5.3.2.1</td>
<td>0</td>
<td>5.3.2.1 Display of UN Numbers</td>
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<tr>
<td></td>
<td></td>
<td>1.1</td>
<td>5.3.2.1.1 Except for goods of class 1, the UN number shall be displayed as required by this section on consignments of:</td>
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<td></td>
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<td></td>
<td>(a) Solids, liquids or gases transported in tank cargo transport units including on each component of a multicompartment tank cargo transport unit;</td>
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<td></td>
<td></td>
<td></td>
<td>(b) Solids in bulk containers;</td>
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<tr>
<td></td>
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<td></td>
<td>(c) Packaged dangerous goods of a single commodity which constitute a full load for the cargo transport unit;</td>
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<td></td>
<td></td>
<td></td>
<td>(d) Unpackaged LSA-1 or SCO-1 material of Class 7 in or on a vehicle, or in a freight container, or in a tank; and</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(e) Packaged radioactive material with a single UN number in or on a vehicle, or in a freight container, when required to be transported under exclusive use.</td>
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<td></td>
<td>5.3.2.1.2 The UN Number for the goods shall be displayed in black digits not less than 65 mm high, either:</td>
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<td></td>
<td></td>
<td></td>
<td>(a) Against a white background in the area below the pictorial symbol and above the class or division number and the compatibility group letter in a manner that does not obscure or detract from the other required label elements (see 5.3.2.1.3);</td>
</tr>
<tr>
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<td></td>
<td>5.3.2.1.2</td>
<td>5.3.2.1.2 The UN Number for the goods shall be displayed in black digits not less than 65 mm high, either:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(a) Against a white background in the area below the pictorial symbol and above the class number and the compatibility group letter in a manner that does not obscure or detract from the other required label elements (see 5.3.2.1.3);</td>
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</tbody>
</table>
elements (see Figures 5.3.1 and 5.3.2); or
(b) On an orange rectangular panel not less than 120 mm high and 300 mm wide, with a 10 mm black border, to be placed immediately adjacent to each placard (see Figure 5.3.3).
When the alternative given in (b) is used, the subsidiary placard shall be affixed immediately adjacent to the main placard, on all four sides of the freight container or tank.

or

on an orange rectangular panel not less than 120 mm high and 300 mm wide, with a 10 mm black border, to be placed immediately adjacent to each placard or marine pollutant mark (see 5.3.2.1.3). When no placard or marine pollutant mark is required, the UN Number shall be displayed immediately adjacent to the Proper Shipping Name.

80 Additional requirements relating to transport by rail and by road

7.2.3 Special provisions applicable to the transport of radioactive material

81 571. Rail and road vehicles carrying packages, overpacks or freight containers labelled with any of the labels shown in Figs 2-5, or carrying consignments under exclusive use, shall display the placard shown in Fig.6 on each of:
(a) The two external lateral walls in the case of a rail vehicle;
(b) The two external walls and the external rear wall in the case of a road vehicle.
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 large tanks or freight containers, the placards on the tanks or freight containers shall suffice. In the case of vehicles which have insufficient area to allow the fixing of larger placards, the dimension of the placard in Fig. 6 may be reduced to 100 mm. Any placards which do not relate to the contents shall be removed.

82 572. Where the consignment in or on the vehicle is unpackaged LSA-I material or SCO-I or where a consignment is required to be shipped under exclusive use and is packaged radioactive material with a single UN number, the appropriate UN number (see Table 1) shall also be displayed, in black digits not less than 65 mm high, either:
(a) In the lower half of the placard shown in Fig. 6, against the white background; or
(b) On the placard shown in Fig. 7.
When the alternative given in (b) is used, the subsidiary placard shall be affixed immediately adjacent to the main placard, either on the two external lateral walls in case of a rail *vehicle* or on the two external lateral walls and the external rear wall in the case of a road *vehicle*.