

**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals**

Sub-Committee of Experts on the Transport of Dangerous Goods

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Cooperation with the International Atomic Energy Agency (IAEA)

**Proposal for a revised Chapter 1.4 by the International
Atomic Energy Agency (IAEA)**

Chapter 1.4

Security provisions

Introductory notes

NOTE 1: This Chapter provides requirements intended to address the security of dangerous goods in transport in all modes. Mode specific security provisions can be found in Chapter 7.2. National and modal authorities may apply additional security provisions which should be considered when offering or transporting dangerous goods.

NOTE 2: For the purposes of this Chapter security means measures or precautions to be taken to minimise theft or misuse of dangerous goods that may endanger persons or property.

1.4.1 General provisions

1.4.1.1 All persons engaged in the transport of dangerous goods shall consider security requirements for the transport of dangerous goods commensurate with their responsibilities.

1.4.1.2 Consignors shall only offer dangerous goods to carriers that have been appropriately identified.

1.4.1.3 Transit sites, such as airside warehouses, marshalling yards and other temporary storage areas shall be properly secured, well lit and, where possible, not be accessible to the general public.

1.4.2 Security training

1.4.2.1 The training specified for individuals in 1.3.2 (a), (b) or (c) shall also include elements of security awareness.

1.4.2.2 Security awareness training shall address the nature of security risks, recognising security risks, methods to address and reduce such risks and actions to be taken in the event of a security breach. It shall include awareness of security plans (if appropriate) commensurate with the responsibilities of individuals and their part in implementing security plans.

1.4.2.3 Such training shall be provided or verified upon employment in a position involving dangerous goods transport and shall be periodically supplemented with retraining.

1.4.2.4 Records of all security training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.

1.4.3 Provisions for high consequence dangerous goods

1.4.3.1 Definition of high consequence dangerous goods

1.4.3.1.1 High consequence dangerous goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for class 7, mass socio-economic disruption.

1.4.3.1.2 An indicative list of high consequence dangerous goods in classes and divisions other than Class 7 is given in table 1.4.1 below.

Table 1.4.1: Indicative list of high consequence dangerous goods

Class 1, Division 1.1	explosives
Class 1, Division 1.2	explosives
Class 1, Division 1.3	compatibility group C explosives
Class 1, Division 1.4	UN Nos. 0104, 0237, 0255, 0267, 0289, 0361, 0365, 0366, 0440, 0441, 0455, 0456 and 0500
Class 1, Division 1.5	explosives
Division 2.1	flammable gases in bulk
Division 2.3	toxic gases (excluding aerosols)
Class 3	flammable liquids of packing groups I and II in bulk
Class 3 and Division 4.1	desensitized explosives
Division 4.2	goods of packing group I in bulk
Division 4.3	goods of packing group I in bulk
Division 5.1	oxidizing liquids of packing group I in bulk
Division 5.1	perchlorates, ammonium nitrate, ammonium nitrate fertilisers and ammonium nitrate emulsions or suspensions or gels, in bulk
Division 6.1	toxic substances of packing group I
Division 6.2	infectious substances of Category A (UN Nos. 2814 and 2900)
Class 8	corrosive substances of packing group I in bulk

NOTE: For the purposes of this table, "in bulk" means transported in quantities greater than 3 000 kg or 3 000 l in portable tanks or bulk containers.

1.4.3.1.3 For dangerous goods of Class 7, high consequence radioactive material are those with an activity meeting or exceeding a transport security threshold of 3000 A₂ per single package (see also 2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in table 1.4.2 below.

Table 1.4.2: Transport security thresholds for specific radionuclides

Element	Radionuclide	Transport security threshold (TBq)
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Cesium	Cs-137	1
Iron	Fe-55	8000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Paladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Yterbium	Yb-169	3

1.4.3.1.4 For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met or exceeded.

This calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

Where:

A_i = activity of radionuclide i that is present in a package (TBq)

T_i = transport security threshold for radionuclide i (TBq).

1.4.3.1.5 When radioactive material possess subsidiary risks of other classes or divisions, the criteria of table 1.4.1 shall also be taken into account (see also 1.5.5.1).

1.4.3.2 Specific security provisions for high consequence dangerous goods

1.4.3.2.1 In implementing national security provisions competent authorities shall consider establishing a programme for identifying consignors or carriers engaged in the transport of high consequence dangerous goods for the purpose of communicating security related information.

1.4.3.2.2 Security plans

1.4.3.2.2.1 Carriers, consignors and others (including infrastructure managers) engaged in the transport of high consequence dangerous goods (see Table 1.4.1) shall adopt, implement and comply with a security plan that addresses at least the elements specified in 1.4.3.2.2. 2

1.4.3.2.2.2 The security plan shall comprise at least the following elements:

- (a) Specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;
- (b) Records of dangerous goods or types of dangerous goods transported;
- (c) Review of current operations and assessment of vulnerabilities, including inter-modal transfer, temporary transit storage, handling and distribution as appropriate;
- (d) Clear statements of measures, including training, policies (including response to higher threat conditions, new employee/employment verification etc.), operating practices (e.g. choice/use of routes where known, access to dangerous goods in temporary storage, proximity to vulnerable infrastructure etc.), equipment and resources that are to be used to reduce security risks;
- (e) Effective and up to date procedures for reporting and dealing with security threats, breaches of security or security incidents;
- (f) Procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;
- (g) Measures to ensure the security of transport information contained in the plan; and
- (h) Measures to ensure that the distribution of the transport information is limited as far as possible. (Such measures shall not preclude provision of transport documentation required by Chapter 5.4 of these Regulations).

NOTE: *Carriers, consignors and consignees should co-operate with each other and with appropriate authorities to exchange threat information, apply appropriate security measures and respond to security incidents.*

1.4.3.2.3 For radioactive material, the provisions of this chapter and of section 7.2.4 are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear material¹ and the IAEA information circular on 'The Physical Protection of Nuclear Material and Nuclear facilities'²