

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 Globally Harmonized System of Classification and Labelling of Chemicals

Ninth session, 11-13 July 2005
Item 4 of the provisional agenda

IMPLEMENTATION OF THE GHS

Implementation through Transport of Dangerous Goods Regulations

Note by the secretariat

The secretariat reproduces below a table concerning the status of implementation of the GHS through the UN Model Regulations on the Transport of Dangerous Goods and the major legal instruments regulating international transport of dangerous goods:

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| By sea: | International Maritime Dangerous Goods Code (IMDG Code) (mandatory application for 155 countries) |
| By air: | ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (mandatory application for 188 countries) |
| ADR: | European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (40 Contracting Parties). (also of mandatory application for domestic traffic in EU countries) |
| RID: | Regulations concerning the International Transport of Dangerous Goods by Rail (RID) (42 Contracting Parties). (also of mandatory application for domestic traffic in EU countries) |
| ADN: | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (4 Contracting States, not yet in force, but the provisions are applicable on the Rhine (ADNR) and on the Danube (ADND)). |

GHS hazards addressed in transport regulations	Model Regulations		IMDG Code Amendment 32-04 ¹	ICAO TI (2005-2006 Edition) ²	RID/ADR/ADN 2005 ³
	(Rev.13)	(Rev.14)			
Chapter 2.1: Explosives	(Class 1)		(Class 1)	(Class 1)	(Class 1)
	Divisions 1.1 to 1.6	Done (Divisions 1.1 to 1.6)	Already applicable	Already applicable	Already applicable
Chapter 2.2: Flammable gases	(Class 2, Division 2.1)		(Class 2, Division 2.1)	(Class 2, Division 2.1)	(Class 2, Division 2.1)
	Category 1	Done	Already applicable	Already applicable	Already applicable
	Category 2	NOT APPLICABLE	NOT APPLICABLE	<i>Not applicable</i>	<i>Not applicable</i>
Chapter 2.3: Flammable aerosols	(Class 2)		(Class 2)	(Class 2)	(Class 2)
	Category 1	Done	Already applicable	Already applicable	Already applicable
	Category 2	Done	Already applicable	Already applicable	Already applicable
Chapter 2.4: Oxidizing gases	(Division 2.2 gases)		(Division 2.2 gases)	(Division 2.2 gases)	(Division 2.2 gases)
	Category 1	Done	Already applicable	Already applicable	Already applicable
Chapter 2.5: Gases under pressure	(Class 2)		(Class 2)	(Class 2)	(Class 2)
	Compressed gases	Done	Already applicable	Already applicable	Already applicable
	Liquefied gases	Done	Already applicable	Already applicable	Already applicable
	Refrigerated liquefied gases	Done	Already applicable	Already applicable	Already applicable
	Dissolved gases	Done	Already applicable	Already applicable	Already applicable
Chapter 2.6: Flammable liquids	(Class 3)		(Class 3)	(Class 3)	(Class 3)
	Category 1	Done (PGI)	Already applicable	Already applicable	Already applicable
	Category 2	Done (PGII)	Already applicable	Already applicable	Already applicable
	Category 3	Rev.13: Not done (see Note 1)	Rev.14: Done (see Note 1)	Not done (see Note 1)	Not done (See Note 1)
	Category 4	NOT APPLICABLE		<i>Not applicable</i>	<i>Not applicable</i>

¹ Amendment 32 to the IMDG Code will enter into force as from 1 January 2006 without transitional period but may be applied, on a voluntary basis, totally or partially, as from 1 January 2005.

² The 2005-2006 edition of the ICAO TI entered into force on 1 January 2005.

³ The 2005 version of the RID/ADR/ADN entered into force on 1 January 2005.

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		(Rev.13)	(Rev.14)			
Chapter 2.7: Flammable solids		(Class 4, Division 4.1)		(Class 4, Division 4.1)	(Class 4, Division 4.1)	(Class 4, Division 4.1)
	Category 1	Done (PG II)		Already applicable	Already applicable	Already applicable
	Category 2	Done (PG III)		Already applicable	Already applicable	Already applicable
Chapter 2.8: Self-reactive substances		(Class 4, Division 4.2)		(Class 4, Division 4.2)	(Class 4, Division 4.2)	(Class 4, Division 4.2)
	Types A to G	Done		Already applicable	Already applicable	Already applicable
Chapter 2.9: Pyrophoric liquids		(Class 4, Division 4.2)		(Class 4, Division 4.2)	(Class 4, Division 4.2)	(Class 4, Division 4.2)
	Category 1	Done (PG I)		Already applicable	Already applicable	Already applicable
Chapter 2.10: Pyrophoric solids		(Class 4, Division 4.2)		(Class 4, Division 4.2)	(Class 4, Division 4.2)	(Class 4, Division 4.2)
	Category 1	Done (PG I)		Already applicable	Already applicable	Already applicable
Chapter 2.11: Self-heating substances		(Class 4, Division 4.2)		(Class 4, Division 4.2)	(Class 4, Division 4.2)	(Class 4, Division 4.2)
	Category 1	Done (PG II)		Already applicable	Already applicable	Already applicable
	Category 2	Done (PG III)		Already applicable	Already applicable	Already applicable
Chapter 2.12: Substances which, in contact with water, emit flammable gases		(Class 4, Division 4.3)		(Class 4, Division 4.3)	(Class 4, Division 4.3)	(Class 4, Division 4.3)
	Category 1	Done (PGI)		Already applicable	Already applicable	Already applicable
	Category 2	Done (PGII)		Already applicable	Already applicable	Already applicable
	Category 3	Done (PGIII)		Already applicable	Already applicable	Already applicable
Chapter 2.13: Oxidizing liquids		(Class 5, Division 5.1)		(Class 5, Division 5.1)	(Class 5, Division 5.1)	(Class 5, Division 5.1)
	Category 1	Done (PGI)		Already applicable	Already applicable	Already applicable
	Category 2	Done (PGII)		Already applicable	Already applicable	Already applicable
	Category 3	Done (PGIII)		Already applicable	Already applicable	Already applicable
Chapter 2.14: Oxidizing solids		(Class 5, Division 5.1)		(Class 5, Division 5.1)	(Class 5, Division 5.1)	(Class 5, Division 5.1)
	Category 1	Done (PGI)		Already applicable	Already applicable	Already applicable
	Category 2	Done (PGII)		Already applicable	Already applicable	Already applicable
	Category 3	Done (PGIII)		Already applicable	Already applicable	Already applicable

GHS hazards addressed in transport regulations		Model Regulations		IMDG Code Amendment 32-04 ¹	ICAO TI (2005-2006 Edition) ²	RID/ADR/ADN 2005 ³
		(Rev.13)	(Rev.14)			
Chapter 2.15: Organic peroxides		(Class 5, Division 5.2)		(Class 5, Division 5.2)	(Class 5, Division 5.2)	(Class 5, Division 5.2)
	Types A to G	Done		Already applicable	Already applicable	Already applicable
Chapter 2.16: Corrosive to metals		Class 8		Class 8	Class 8	Class 8
	Category 1	Done (PGIII if not corrosive to skin)		Already applicable	Already applicable	Already applicable
Chapter 3.2: Skin corrosion		Class 8		Class 8	Class 8	Class 8
Category 1	Subcategory: 1A	Done (PGI)		Already applicable	Already applicable	Already applicable
	Subcategory: 1B	Done (PGII)		Already applicable	Already applicable	Already applicable
	Subcategory: 1C	Done (PGIII)		Already applicable	Already applicable	Already applicable
Chapter 3.1: Acute toxicity (Liquids and solids)		Class 6 (Division 6.1) (See Note 2)		Class 6 (Division 6.1) (See Note 2)	Class 6 (Division 6.1) (see Note 2)	Class 6 (Division 6.1) (see Note 2)
		Rev.13	Rev.14			
	Category 1	Not done	Done	Not done (Harmonization 2007)	Not done (2007)	Not done (2007)
	Category 2	Not done	Done	Not done (2007)	Not done (2007)	Not done (2007)
	Category 3	Not done	Done	Not done (2007)	Not done (2007)	Not done(2007)
	Category 4	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
	Category 5	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
Chapter 3.1: Acute toxicity (Gases)		Division 2.3		Division 2.3	Division 2.3	Class 2 (Groups T, TF, TC TO, TFC, TOC)
		Rev.13	Rev.14			
	Category 1	Done	Done	Done	Done	Done
	Category 2	Done	Done	Done	Done	Done
	Category 3	Done	Done	Done	Done	Done
	Category 4	Done*	Done*	Done*	Done*	Done*
	Category 5	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
* Skull and crossbones required for category 4 also. Harmonization for labeling has not been discussed.						

GHS hazards addressed in transport regulations		Model Regulations		IMDG Code Amendment 32-04 ¹	ICAO TI (2005-2006 Edition) ²	RID/ADR/ADN 2005 ³
		(Rev.13)	(Rev.14)			
Chapter 3.10: Environmental hazards		Class 9		Class 9	Class 9	Class 9
Acute toxicity	Acute 1	Done *		Not done under consideration (for application 2007)	Not done under consideration for relevance	Not done under consideration (for application 2007 or 2009)
	Acute 2	<i>Not applicable</i>		<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
	Acute 3	<i>Not applicable</i>		<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
Chronic toxicity	Chronic 1	Done *		Not done under consideration (for application 2007)	Not done under consideration for relevance	Not done under consideration (for application 2007)
	Chronic 2	Done *		Not done under consideration (for application 2007)	Not done under consideration for relevance	Not done under consideration (for application 2007 or 2009)
	Chronic 3	<i>Not applicable</i>		<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
	Chronic 4	<i>Not applicable</i>		<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
* <i>Labelling required only if no other danger.</i>						

NOTE 1: The flash point upper cut-off value for Category 3 flammable liquids was slightly different in the 13th revised edition of the UN Recommendations and in the GHS. While in the UN Recommendations, the upper cut-off value for packing group III flammable liquids was 60.5 °C, the GHS used a cut-off value of 60 °C. These values are now harmonized, since the UN Sub-Committee of experts on the Transport of Dangerous Goods has decided to adopt the GHS criteria, i.e. packing group III shall be assigned to flammable liquids with a flash point range between 23 °C and 60° C.

The IMDG Code, the ICAO TI and the RID/ADR/ADN still have different values for the flash point (see table below). Harmonization of the upper cut-off value for packing group III flammable liquids according to the GHS is under consideration and is expected to become effective as from 1 January 2007.

GHS Flash point cut-off value for Category 3 flammable liquids	UN Recommendations		ADR/RID/ADN (2005 edition)	IMDG Code Amendment 32-04	ICAO TI (2005-2006 Edition)
	Rev.13	Rev.14			
60 °C	60.5 °C	60°C	61 °C	61 °C	60.5 °C

NOTE 2: Acute toxicity values for Class 6, Division 6.1 (toxic substances) in the 13th revised edition of the UN Recommendations which were not in line with the GHS criteria for Acute toxicity Categories 1, 2 and 3, (see table 1) have been harmonized with the GHS in the 14th revised edition (see table 2).

Table 1: Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists according to the 13th revised edition

Packing group	Oral toxicity LD ₅₀ (mg/kg)	Dermal toxicity LD ₅₀ (mg/kg)	Inhalation toxicity by dusts and mists LC ₅₀ (mg/l)
I	≤ 5	≤ 40	≤ 0,5
II	> 5-50	> 40-200	> 0,5-2
III	Solids: > 50-200 Liquids: > 50-500	> 200-1000	> 2-10

Table 2: Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists according to the 14th revised edition

Packing group	Oral toxicity LD ₅₀ (mg/kg)	Dermal toxicity LD ₅₀ (mg/kg)	Inhalation toxicity by dusts and mists LC ₅₀ (mg/l)
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III	> 50 and ≤ 300	> 200 and ≤ 1000	> 2.0 and ≤ 4.0

It is important to note that the criteria for inhalation toxicity of dusts and mists in the UN Model Regulations are based on LC₅₀ data relating to 1 hour exposures while in the GHS, these data relate to 4 hour exposure. Where only LC₅₀ data relating to 4 hours exposures to dusts and mists are available, such figures can be multiplied by four and the product substituted in the above criteria, i.e. LC₅₀ (4 hours) × 4 is considered the equivalent of LC₅₀ (1 hour).