



**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****Fiftieth session**

Geneva, 27 November–6 December 2016

Item 7 (g) of the provisional agenda

**Issues relating to the Globally Harmonized System
of Classification and Labelling of Chemicals:
use of the Manual of Tests and Criteria in the
context of the GHS****Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals****Thirty-second session**

Geneva, 7–9 December 2016

Item 2 (b) of the provisional agenda

**Classification criteria and related hazard communication:
work of the TDG Sub-Committee on matters of interest
to the GHS Sub-Committee****Use of the Manual of Tests and Criteria in the context of
GHS****Transmitted by the Chairman of the Working Group on Explosives of
the Sub-Committee of Experts on the Transport of Dangerous Goods
(TDG Sub-Committee) on behalf of the Working Group¹**

1. This document contains the proposed list of amendments to the sixth revised edition of the Manual of Tests and Criteria to take account of its use in the context of the GHS, as well as the proposed consequential amendments to the Model Regulations, for consideration by both sub-committees.

2. For practical reasons, the full text of the Manual of Tests and Criteria with the proposed changes in visible mode (“track-changes”) is circulated separately, in English only, in informal documents, as follows:

- INF.7 (TDG) – INF.5 (GHS): Section 1
- INF.7/Add.1 (TDG) – INF.5/Add.1 (GHS): Part I (Section 10 to 17)
- INF.7/Add.2 (TDG) – INF.5/Add.2 (GHS): Part I (Section 18)
- INF.7/Add.3 (TDG) – INF.5/Add.3 (GHS): Part II (Section 20 to 28)

¹ In accordance with the programme of work of the Sub-Committee for 2015–2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15).

- INF.7/Add.4 (TDG) – INF.5/Add.4 (GHS): Parts III, IV and V (Section 30 to 51)
- INF.7/Add.5 (TDG) – INF.5/Add.5 (GHS): Appendices

Note by the secretariat: When cross-checking the amendments in the marked-up copies of the text of the Manual in the informal documents against the list of amendments in this document, the secretariat has identified some inconsistencies and questions requiring further guidance from the sub-committees. They have been identified in this document as well as in the marked-up copies for consideration by the sub-committees.

Draft amendments to the sixth revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria

Part I

General table of contents

Title of Part I: Delete “of class 1” at the end

Title of Test Series 1: replace “has explosive properties” with “is an explosive”

Title of Test Series 2: replace “for inclusion in Class 1” with “for inclusion into the class of explosives” Title of Test Series 3: Amend the sentence between parentheses to read: “(To determine if a substance is an explosive)” Title of Test Series 4: replace “is too dangerous for transport” with “...is classified as an unstable explosive”

Title of Test Series 6: replace “Class 1” with “the class of explosives”

Title of Test Series 8: amend the end of the sentence between parentheses to read: “for containment in tanks as an oxidizing substance”

Title of Part II: Delete “OF DIVISION 4.1” and “OF DIVISION 5.2”

Title of Part III: Amend the end to read: “RELATING TO VARIOUS OTHER HAZARD CLASSES”

Title of Section 31: Delete “of class 2”

Title of Section 32: Delete “of class 3”

Title of Section 33: Replace “CLASS 4” with “ “RELATING TO FLAMMABLE SOLIDS, SOLID DESENSITIZED EXPLOSIVES (RELATED TO TRANSPORT ONLY), SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION AND SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES”

Title of Section 34: Delete “of division 5.1”

Title of Section 36: Amend to read: “Reserved”

Title of Section 37: Amend the end to read: “RELATING TO CORROSIVE SUBSTANCES”

Title of Section 38: Amend the end to read: “RELATING TO SUBSTANCES AND ARTICLES OF TRANSPORT CLASS 9”

Section 1

1.1.1 Amend the beginning of the first sentence to read: “The purpose of the Manual of Tests and Criteria (hereafter referred to as the “Manual” is to ...” and delete “of substances and articles for transport” at the end of the sentence.

Current second sentence under 1.1.1 becomes new paragraph 1.1.4 as amended (see below).

Current paragraph 1.1.2 becomes new paragraph 1.1.5 as amended (see below).

Current paragraph 1.1.3 becomes new paragraph 1.1.6 as amended (see below).

1.1.2 and 1.1.3 Insert the following two new paragraphs 1.1.2 and 1.1.3:

“1.1.2 This Manual was originally intended to be used for transport and continues to be the source of classification testing and criteria for dangerous goods in transport. Hence, in editions 1 to 6 of the Manual frequent reference is made to “as packaged for transport” and “as offered for transport”. Because, for physical hazards, GHS also refers to the tests contained in this Manual, to facilitate the use of the Manual in the context of GHS the phrase “as offered for classification” is used instead. For example, if the classification to be determined is for products packaged for transport, “as offered for classification” means “as offered for transport”. On the other hand, if the classification to be determined is for non-transport GHS use, then “as offered for classification” means “in the condition relevant to the particular application”. More details on the reasons for this change are provided below.

1.1.3 The outcome of the tests in this Manual is predominantly related to the intrinsic properties of the material being tested. However the test results may also be affected by other physical parameters such as: density; particle size (distribution) and humidity. For some physical hazards the outcome of the tests and hence the classification can also be dependent on the quantity of the sample and on the packaging.

For these reasons, the above mentioned parameters and circumstances should be taken into account when considering test results, particularly for classification for sectors other than transport.”².

1.1.4 (new, former sentence under 1.1.1) Amend to read:

“1.1.4 This Manual should be used in conjunction with the latest versions of:

- (a) The Recommendations on the Transport of Dangerous Goods (hereafter referred to as the Recommendations) and the Model Regulations annexed thereto (hereafter referred to as the Model Regulations); and
- (b) The Globally Harmonized System of Classification and Labelling of Chemicals (hereafter referred to as the GHS).”

1.1.5 (new, former paragraph 1.1.2) In the first sentence, replace “the Manual of Tests and Criteria” with “the Manual”.

1.1.6 (new, former paragraph 1.1.3) Delete “or Divisions for transport”.

1.1.7 and 1.1.8 Insert the following two new paragraphs:

“1.1.7 Definitions of terms used in the Manual may be found in Chapter 1.2 of the Model Regulations and of the GHS and in Appendix B of the Model Regulations.

1.1.8 The term “substance” in this Manual includes both substances and mixtures, unless otherwise stated.”

² ***Note by the secretariat:*** It is unclear whether this paragraph relates both to 1.1.2 and 1.1.3 or only to 1.1.3. If it relates only to 1.1.3, the secretariat recommends placing it as the last sentence of this paragraph (instead of as an individual paragraph without numbering). If it relates both to 1.1.2 and 1.1.3, the secretariat recommends numbering it as 1.1.4.

1.2 Insert a new sub-section 1.2 as follows:

“1.2 Hazard classes in the Model Regulations and in the GHS

1.2.1 Hazard classes in the Model Regulations

1.2.1.1 Substances and articles subject to the Model Regulations are assigned to one of nine classes according to the hazard or the predominant hazard they present for transport. Some of these classes are subdivided into divisions addressing a more specific type of hazard within a given class. The numerical order of the classes and divisions does however not reflect the degree of hazard.

1.2.1.2 In addition, for packing purposes, some dangerous goods are assigned to one of three packing groups in accordance with the degree of danger they present:

Packing group I: high hazard

Packing group II: medium hazard

Packing group III: low hazard

The packing group to which a substance is assigned is indicated in the Dangerous Goods List in Chapter 3.2 of the Model Regulations. Articles are not assigned to packing groups.

1.2.1.3 Dangerous goods meeting the criteria of more than one hazard class or division and which are not listed in the Dangerous Goods List are assigned to a transport class and division and subsidiary hazard(s) on the basis of the precedence of hazards characteristics.

1.2.1.4 Precedence of hazard characteristics for transport purposes

1.2.1.4.1 The table in 2.0.3.3 of Chapter 2.0 of the Model Regulations may be used as a guide in determining the class of a substance having more than one hazard, when it is not named in the Dangerous Goods List in Chapter 3.2 of the Model Regulations. For goods having multiple hazards, which are not specifically listed by name in Chapter 3.2 of the Model Regulations, the most stringent packing group denoted to the respective hazard of the goods takes precedence over other packing groups, irrespective of the precedence of hazard table in 2.0.3.3 of Chapter 2.0 of the Model Regulations.

1.2.1.4.2 The precedence of hazard characteristics of the following are not dealt with in the Precedence of hazard table in Chapter 2.0 of the Model Regulations, since these primary characteristics always take precedence:

- Substances and articles of Class 1;
- Gases of Class 2;
- Liquid desensitized explosives of Class 3;
- Self-reactive substances and solid desensitized explosives of Division 4.1;
- Pyrophoric substances of Division 4.2;
- Substances of Division 5.2;

- Substances of Division 6.1 with a packing group I inhalation toxicity;
- Substances of Division 6.2; and
- Radioactive material of Class 7.

1.2.1.4.3 Self-reactive substances, except for type G, giving a positive result in the self-heating test N.4, should not be classified as pyrophoric liquids or solids but as self-reactive substances (see paragraph 2.4.2.3.1.1 of the Model Regulations). Organic peroxides of type G having properties of another hazard class (e.g. UN 3149) should be classified according to the requirements of that hazard class.

1.2.2 *Hazard classes in the GHS*

The GHS addresses classification of substances by the type of chemical hazard (e.g. flammability, toxicity, corrosivity) which are grouped into physical hazards, health hazards and environmental hazards. The GHS hazard classes each reflect a type of hazard, and they are sometimes specific to a certain aggregation state (solid, liquid or gaseous). Most of the GHS hazard classes are further subdivided into hazard categories reflecting the severity of the hazard, with Category 1 indicating the most severe hazard.

1.2.3 *Relationship between the Model Regulations and the GHS*

1.2.3.1 Since the GHS addresses also sectors other than transport (e.g. storage, supply and use), it includes hazards not considered relevant to transport, such as several non-acute health hazards. In addition, because the GHS covers only chemical hazards, not all the transport classes defined in the Model Regulations have an equivalent GHS hazard class. Furthermore, with the exception of explosive articles, the GHS does not cover articles (see 1.3.2.1.1 of the GHS). The differences in scope for GHS and the Model Regulations means that not all hazards addressed in the GHS have their counterparts in the Model Regulations, and vice versa. For instance, there is not a specific hazard class in the GHS for radioactive material (Class 7 in transport), and some of the dangerous goods classified for transport in Class 9 are either not addressed by the GHS at all (e.g. many articles) or are covered by other GHS hazard classes (e.g.: environmentally hazardous substances of Class 9, which may fall under the GHS hazard class “Hazardous to the aquatic environment”).

1.2.3.2 In addition, while one transport class may cover several different types of hazards, GHS hazard classes usually address one type of hazard each. For instance, substances of Class 4 in transport belong to seven individual GHS hazard classes. Furthermore, while transport classes are identified by a number (1 to 9), GHS hazard classes are identified by a name reflecting the type of chemical hazard (e.g. “Flammable solids”). Moreover, the concept of precedence of hazards as defined in the Model Regulations (see 1.1.4.1.4)³ does not exist in the GHS.

³ **Note by the secretariat:** The Sub-Committee is invited to check whether the correct reference to be indicated here is 1.2.1.4.

1.2.3.3 The overarching correlation between GHS hazard classes and the transport classes addressed in the Model Regulations is indicated in Table 1.1. The table is indicative only and is not intended to be used as the sole basis in translating the classification of any substance or article between the GHS and the Model Regulations, or vice versa.

Table 1.1:
Correlation between GHS hazard classes and Model Regulations transport classes

GHS hazard classes	Hazard classes in the Model Regulations
Explosives, Divisions 1.1 to 1.6	Class 1, Divisions 1.1 to 1.6
Flammable gases, Category 1	Class 2, Division 2.1
Aerosols	Class 2, Division 2.1 and 2.2
Oxidizing gases	Class 2, Division 2.2
Gases under pressure	Class 2
Flammable liquids	Class 3
Flammable solids	Class 4, Division 4.1
Self-reactive substances	Class 4, Division 4.1
Pyrophoric liquids	Class 4, Division 4.2
Pyrophoric solids	Class 4, Division 4.2
Self-heating substances	Class 4, Division 4.2
Substances which, in contact with water, emit flammable gases	Class 4, Division 4.3
Oxidizing liquids	Class 5, Division 5.1
Oxidizing solids	Class 5, Division 5.1
Organic peroxides	Class 5, Division 5.2
Corrosive to metals	Class 8
Desensitized explosives	Class 3 (liquids) Class 4, Division 4.1 (solids)
Acute toxicity, Categories 1, 2 and 3	Class 6, Division 6.1 (solids and liquids) Class 2, Division 2.3 (gases)
Skin corrosion, Category 1	Class 8
Hazardous to the aquatic environment, Acute 1 and Chronic 1 and 2	Class 9 (environmentally hazardous substances)

”

Current sub-section 1.2 becomes new section 1.3:

Section 1.3 (new; former section 1.2) Amend to read:

“1.3 Layout

1.3.1 The Manual is divided into five parts:

Part I: those relating to explosives;

Part II: those relating to self-reactive substances and to organic peroxides;

- Part III: those relating to aerosols, desensitized explosives (relating to transport only), flammable liquids, flammable solids, pyrophoric liquids and solids, substances which in contact with water emit flammable gases, oxidizing liquids and solids, unstable gases and gas mixtures, substances corrosive to metals, and substances and articles of transport Class 9 (ammonium nitrate fertilizers, lithium metal and lithium ion batteries);
- Part IV: test methods concerning transport equipment
- Part V: classification procedures, test methods and criteria relating to sectors other than transport.

1.3.2 There are also appendices which give information common to a number of different types of tests, on the National Contacts for Test Details, on an example method for emergency relief vent sizing of portable tanks for organic peroxides and self-reactive substances, on screening procedures, on flash composition tests for the classification of fireworks, response descriptors and the ballistic projection energy test for cartridges, small arms.

1.3.3 The methods of test identification are given in Table 1.2.”

Table 1.1 Renumber as new table 1.2.

1.3.4 Current paragraph 1.2.3 becomes new 1.3.4, with the following amendments:

In the Note following x.5, in the second sentence replace “substances” to test samples” and “substance” to test sample”.

Current sub-section 1.3 became new paragraph 1.2.1.4 as amended (see above).

1.4.1 At the end of the sentence of the current paragraph, add “(see Chapter 1.5 and Annex 4 of the GHS for guidance on the preparation of Safety Data Sheets)”.

1.5.1 In the second sentence, replace “given here” with “given below”.

1.5.2 Amend the first sentence to read: “The composition of the test sample should be representative for the product being classified.”

1.5.4 Amend the end of the first sentence to read “expected circumstances e.g. of transport or storage.”

In the second sentence, amend the beginning to read “If these circumstances are not ...” and replace “anticipated transport conditions” with “anticipated conditions”.

1.6.1 Replace “Table 1.2” with “Table 1.3” and “Table 1.3” with “Table 1.4”.

Table 1.2 Renumber as table 1.3 and amend as follows:

Amend the title to read: “**RECOMMENDED TESTS IN PART I**”

Insert the following line:

Test series	Test Type	Test code	Test name
7	(I)	7 (I)	“1.6 article (or component level) fragment impact test”

Amend note^a to the table to read: “*These tests are intended for evaluating the suitability for containment in portable tanks as an oxidizing substance.*”

Table 1.3 Renumber as table 1.4 and amend the title to read: “**RECOMMENDED TESTS IN PART II**”.

1.7.1 Amend the beginning of the first sentence to read: “Classifications for inclusion in the list of dangerous goods for transport in Chapter 3.2 ...”.

In the listing after the paragraph, amend the first line to read: “Explosive substances and articles (see 10.5)” and delete “of Division 4.1” and “of Division 5.2” in the second and third lines respectively.

Part I (Title page) Replace “OF CLASS 1” with “RELATING TO EXPLOSIVES”.

Part I (Table of contents) In the title of Section 10.4, replace “OF CLASS 1” with “OF THE CLASS OF EXPLOSIVES”.

Section 10

10.1.1 At the end of the second sentence delete: “for transport”.

10.1.2 Amend the first sentence to read as follows:

“Explosives, other than unstable explosives, are assigned to one of six divisions, depending on the type of hazard they present (see Chapter 2.1, paragraph 2.1.1.4 of the Model Regulations and Chapter 2.1, paragraph 2.1.2 of the GHS) and, for some regulatory purposes (e.g. transport), to one of the thirteen compatibility groups that identify the kinds of explosives that are deemed to be compatible.”.

In the second sentence, replace “Class 1” with “the class of explosives”.

In the fourth sentence, replace “should be ascertained” with “is ascertained” and amend the end to read as follows: “both chemically and physically, are also determined.”.

In the sixth sentence, replace “Class 1” with “the class of explosives” and insert “and 10.5” after “Figure 10.3”.

In the seventh sentence, replace “assignment to a compatibility group” with “assignment to a compatibility group, when required,”.

10.1.3 Amend the end of the first sentence and the beginning of the second sentence to read as follows: “that an appropriate classification can be assigned. When appropriate this is done by the competent authority.”.

10.2.1 At the end of the first sentence, replace “Class 1” with “the class of explosives”, and in the second sentence delete “of Division 4.1” and “of Division 5.2”.

10.2.1 (a) Delete “or a combination or mixture of substances” and replace “combinations or mixtures” with “substances”.

- 10.2.1 (b) Delete “or article” and amend the text between parentheses to read as follows: “(see Chapter 2.1, paragraph 2.1.3.1⁴ of the Model Regulations and Chapter 2.1, paragraph 2.1.1.2 of the GHS)”.
- 10.2.1 (c) Delete “or a new combination or mixture of explosive substances”.
- 10.2.1 (d) Insert a full stop after the word “articles”, replace “lesser risk” with “lesser hazard” and replace “mass explosion risk” with “mass explosion hazard or vice versa”.
- 10.2.1 Delete the last sentence following sub-paragraphs (a) to (d) (“The classification ... for transport).
- 10.3.1.1 Amend to read as follows:
“The acceptance procedure is used to determine whether or not a substance or article is a candidate for the class of explosives. This is decided by determining whether a substance provisionally accepted into the class of explosives is either too insensitive for inclusion in the class of explosives or is accepted as an unstable explosive (and considered too dangerous for transport); or whether articles or packaged articles are accepted as an unstable explosive (and considered too dangerous for transport).”
- 10.3.2.1 Replace “Class 1” with “the class of explosives”.
- 10.3.2.3 Replace “Class 1” with “the class of explosives”.
- Figure 10.1 In the title, replace “IN CLASS 1” with “IN THE CLASS OF EXPLOSIVES”.
Replace current figure 10.1 in the Manual with Figure 2.1.1 in the 6th revised edition of the GHS, and amend as follows:
In the first text box, replace “SUBSTANCE, MIXTURE OR ARTICLE” with “SUBSTANCE OR ARTICLE”.
- Figure 10.2 In the title, replace “IN CLASS 1” with “IN THE CLASS OF EXPLOSIVES”.
Replace current figure 10.2 in the Manual with Figure 2.1.2 in the 6th revised edition of the GHS, and amend as follows:
- Number all the text boxes
 - Wherever it appears, delete “/mixture”
 - In the box starting with “TEST SERIES 8”, replace “Go to Figure 2.1.4” with “Go to Figure 10.4”
 - In the box with the text “Is the substance/mixture too dangerous in the form in which it was tested?”, replace “too dangerous” with “unstable”
 - Replace the sentence “Encapsulate and/or package the substance/mixture” with the question “Is the substance encapsulated and/or packaged?”. Insert an arrow to the left of the text box, with the answer “No”. Insert an answer “Yes” along the arrow going down to the text box “TEST SERIES 4”

⁴ **Note by the secretariat:** The reference in the marked-up copy in informal document (TDG/INF.7/Add.1-GHS/INF.5/Add.1) reads: 2.1.3.1.2. The Sub-Committee is invited to confirm the correct reference to be used.

- In the box with the text “Is the article, packed article or packaged substance/mixture too dangerous?” amend the end of the question to read “or packaged substance unstable?”
 - In the exit box “PROVISIONALLY ACCEPT INTO THIS CLASS”, replace “(go to Figure 2.1.3)” with “(go to Figure 10.3)”
- 10.3.2.4 In the first sentence, replace “too dangerous for transport” with “unstable”.
- 10.3.2.5 In the first sentence, replace “too dangerous for transport” with “unstable”, and amend the beginning of the second sentence to read as follows: “Typical conditions which may be encountered include”.
- 10.3.3.5 Insert “for testing purposes” after “control components,”.
- 10.4 In the title replace “Class 1” with “the class of explosives”.
- 10.4.1.1 Amend the beginning and the end of the first sentence to read as follows: “Unless classified as unstable, explosives are ... Model Regulations and 2.1.2 of the GHS).”
- In the second sentence, insert “and 10.5” after “Figure 10.3” and replace “Class 1” with “this class”.
- Amend the beginning and the end of the third sentence to read as follows: “A substance or article is assigned to ... to which it has been subjected.”.
- Amend the last sentence to read as follows:
- “As indicated in box 36 of Figure 10.3, there is authority to exclude an article from the class of explosives by virtue of test results and the “explosives” definition (see paragraph 2.1.1 (b)⁵ of the Model Regulations and 2.1.1.2 (b) of the GHS). Specific criteria by which articles may be excluded from the class of explosives⁶ may be found in the Model Regulations (see paragraph 2.1.3.6.4).”.
- 10.4.2.2 In the last sentence: replace “national authority” with “competent authority”.
- Figure 10.3 In the title replace “CLASS 1” with “THE CLASS OF EXPLOSIVES”.
- Replace current figure 10.3 in the Manual with Figure 2.1.3 in the 6th revised edition of the GHS, and amend as follows:
- Number all the text boxes
 - Wherever it appears, delete “/mixture”
 - In the first box, replace “from figure 2.1.2” with “from figure 10.2”
 - In the box preceding the exit “Division 1.4 Compatibility Group S” amend the end of the question to read: “excluded by definition and test results? (see 2.1.1.1 (b))”.

⁵ **Note by the secretariat:** *The reference in the marked-up copy in informal document (TDG/INF.7/Add.1-GHS/INF.5/Add.1) reads: “2.1.1.1 (b)”. The Sub-Committee is invited to confirm the correct reference to be used.*

⁶ **Note by the secretariat:** *The text in the submitted marked-up copy reads “Specific criteria by which articles may be excluded from the class of explosives (for transport)”. The Sub-Committee is invited to clarify whether this text was overlooked in the list of amendments or whether it should be deleted in the marked-up copy (see informal document TDG/INF.7/Add.1 – GHS/INF.5/Add.1).*

- Figure 10.4 Replace the current figure 10.4 in the Manual with Figure 2.1.4 in the 6th revised edition of the GHS, and amend as follows:
- Wherever it appears, delete “/mixture”
 - In the exit box on the left hand side, delete “Category 2” (twice) and “(Chapters 2.13 and 2.14)”
 - In the middle and in the bottom exit boxes on the right hand side, replace “in figure 2.1.3” with “in figure 10.3”
- 10.4.2.3 In the first sentence:
- insert “, as appropriate,” after “series 6 tests”
 - replace “a load is” with “it is”; and
 - insert “, 32a” after “32” in the references to the boxes between parenthesis
- In the second sentence replace “a product” with “a product in a certain configuration” and “should be excluded from Class 1” with “can be excluded from the class of explosives”.
- 10.4.2.4 In the first sentence, replace “should” with “shall”.
- For Type 7 (g), replace “as presented for transport” with “as presented for classification;”
- 10.4.2.5 Amend the end of the last sentence of the paragraph to read as follows: “...of ANEs for containment in portable tanks as an oxidizing substance”.
- 10.4.3.3 In the first sentence, replace “for transport” by “for classification”.
- In the second sentence, delete: “, and the conditions of transport,” and replace “most disadvantageous” with “most severe” and “are to be carried” with “are classified”.
- 10.4.3.4 (a) Replace “carried” with “classified”.
- 10.4.3.4 (b) (i) Replace “detonation and/or ignition” with “initiation”.
- 10.4.3.6 Replace “should be used” with “are used”; “the explosive” with “an explosive”; delete “detonating”; replace “used to establish” with “are used to establish”; and “the articles containing” with “articles predominantly containing”.
- 10.4.3.7 In the first sentence, replace “should be performed” with “are performed”.
- In the second sentence replace “for transport” with “for classification”.
- 10.4.3.7 (a) Amend to read as follows: “Complex articles may contain multiple substances and test types 7 (a) to (f) shall be completed for all main explosive load and boosting component substances, as appropriate, within the article to be classified in Division 1.6.”
- 10.4.3.8 At the end of the first sentence replace “assigned to Division 5.1” with “accepted as an oxidizing solid or liquid”.
- In the second sentence, replace “Class 1” with “the class of explosives”.
- 10.4.3.9 Delete.
- 10.5.1 Replace “Class 1” with “the class of explosives” and “musk xylene (UN 2956)” with “hexanitrostilbene (UN 0392)”.

Figure 10.6 Replace with the following:

“Figure 10.6: Results from application of the class of explosives acceptance procedure	
1. Name of substance:	Hexanitrostilbene
2. General data	
2.1 Composition:	hexanitrostilbene
2.2 Molecular formula:	C ₁₄ H ₆ N ₆ O ₁₂
2.3 Physical form:	powder
2.4 Colour:	yellow orange
2.5 Apparent density:	1700 kg /m ³
2.6 Particle size:	0.1 – 0.3 mm
3. Box 2:	Is the substance manufactured with the view to producing a practical explosive or pyrotechnic effect?
3.1 Answer:	Yes
3.2 Exit	Go to Box 8
4. Box 8:	Substance to be considered for the class of explosives
5. Box 9:	Test Series 3
5.1 Thermal stability:	75 °C/48 hour test (test 3 (c))
5.2 Sample conditions:	100 g of substance at 75 °C
5.3 Observations:	No ignition, explosion, self-heating or visible decomposition
5.4 Result:	"-", thermally stable
5.5 Impact sensitivity:	BAM fallhammer test (test 3 (a) (ii))
5.6 Sample conditions:	as received
5.7 Observations:	Limiting impact energy 5 J
5.8 Result:	"-", not unstable in form tested
5.9 Friction sensitivity:	BAM friction test (test 3 (b) (i))
5.10 Sample conditions:	as received
5.11 Observations:	Limiting load > 240 N
5.12 Result:	"-", not unstable in form tested
5.13 Ease of deflagration to detonation transition	Small scale burning test (test 3 (d))
5.14 Sample conditions:	Ambient temperature
5.15 Observations:	Ignites and burns
5.16 Result:	"-", not unstable in the form in which it was tested
5.17 Exit:	Go to box 10
6. Box 10:	Is the substance thermally stable?
6.1 Answer from test 3(c):	Yes
6.2 Exit:	Go to box 11
7. Box 11:	Is the substance unstable in the form in which it was tested?
7.1 Answer from Test Series 3:	No
7.2 Exit:	Go to box 18
8. Conclusion:	PROVISIONALLY ACCEPT INTO THE CLASS OF EXPLOSIVES
11.1 Exit:	Apply assignment procedure for the class of explosives

Figure 10.7 Amend the title to read as follows: “Figure 10.7: PROCEDURE FOR PROVISIONAL ACCEPTANCE OF HEXANITROSTILBENE IN THE CLASS OF EXPLOSIVES”

Replace the current figure 10.7 in the Manual with Figure 2.1.2 in the 6th revised edition of the GHS, and amend as follows:

- Number all the text boxes
- Wherever it appears, delete “/mixture”
- In the box starting with “TEST SERIES 8”, replace “Go to Figure 2.1.4” with “Go to Figure 10.4”
- In the box with the text “Is the substance/mixture too dangerous in the form in which it was tested?”, replace “too dangerous” with “unstable”
- Replace the sentence “Encapsulate and/or package the substance/mixture” with the question “Is the substance encapsulated and/or packaged?”. Insert an arrow to the left of the text box, with the answer “No”. Insert an answer “Yes” along the arrow going down to the text box “TEST SERIES 4”
- In the box with the text “Is the article, packed article or packaged substance/mixture too dangerous?” amend the end of the question to read “or packaged substance unstable?”
- In the exit box “PROVISIONALLY ACCEPT INTO THIS CLASS”, replace “(go to Figure 2.1.3)” with “(go to Figure 10.3)”

Figure 10.8 Replace with the following:

“Figure 10.8: RESULTS FROM APPLICATION OF THE CLASS OF EXPLOSIVES ASSIGNMENT PROCEDURE”

1. Box 19:	Is the substance a candidate for Division 1.5?
1.1 Answer:	No
1.2 Result:	Package the substance (box 23)
1.3 Exit:	Go to box 25
2. Box 25:	Test Series 6
2.1 Effect of initiation in the package:	Test 6(a) with detonator
2.2 Sample conditions:	Ambient temperature, 50 kg fibreboard drum
2.3 Observations:	Detonation, crater
2.4 Result:	Mass explosion
2.5 Effect of ignition between packages:	Test 6(b) with detonator
2.6 Sample conditions:	Ambient temperature, 3 fibreboard drums
2.7 Observations:	Detonation, crater
2.8 Result:	Mass explosion
2.9 Effect of fire engulfment:	Test 6(c) not required
3. Box 26:	Is the result a mass explosion?
3.1 Answer from Test Series 6	Yes
3.2 Exit:	Go to box 27
4. Conclusion	Assign to Division 1.1

Figure 10.9 Amend the title to read as follows: “Figure 10.9: PROCEDURE FOR CLASSIFICATION OF HEXANITROSTILBENE IN THE CLASS OF EXPLOSIVES”.

Replace current figure 10.9 in the Manual with Figure 2.1.3 in the 6th revised edition of the GHS, and amend as follows:

- Number all the text boxes
- Wherever it appears, delete “/mixture”
- In the first box, replace “(from figure 2.1.2)” with “(from figure 10.2)”
- In the box preceding the exit “Division 1.4 Compatibility Group S” amend the end of the question to read: “excluded by definition and test results? (see 2.1.1.1 (b))”.

Section 11

- 11.3.2 Delete “during transport”.
- 11.3.3 Amend to read: “The tests are performed ... unless the substance is likely to encounter conditions...”.
- 11.3.4 Replace “considered for transport” with “considered for packing”.
- 11.4.1.2.1 Delete “cold drawn,” in the first sentence.
- 11.5.1.3.1 In footnote 1, replace “transport conditions” with “packaging conditions”.

Section 12

- 12.1.1 Replace “Class 1” with “the class of explosives”.
- 12.3.2 Delete “during transport”.
- 12.3.3 Amend to read: “The tests are performed ... unless the substance is likely to encounter conditions...”.
- 12.5.1.3.1 In footnote 1, replace “transport conditions” with “packaging conditions”.

Section 13

- 13.1 Amend the second question to read as follows: “Is the substance unstable in the form in which it was tested?”.
- Amend the end of the second sentence to read: “... and the substance shall be classified as an unstable explosive and is not permitted for transport.”.
- Amend the middle of the last sentence to read: “..., the substance shall be classified as an unstable explosive in the form in which it was tested but may be...”.
- 13.3.2 Delete “provided for transport”.
- 13.3.3 Amend the middle of the sentence as follows: “... at ambient temperature unless the substance is likely to encounter conditions ...”.
- 13.4 Throughout the whole sub-section replace “too dangerous to transport” and “too dangerous for transport” with “unstable”.

(Applies to the following paragraphs: 13.4.1.1; 13.4.1.4.1; 13.4.1.4.2; 13.4.2.1; 13.4.2.4; 13.4.3.1; 13.4.3.4.1 (twice); 13.4.3.4.2 (twice); 13.4.4.1; 13.4.4.4; 13.4.5.1; 13.4.5.4.2; 13.4.5.4.3; 13.4.6.1; 13.4.6.4.1; 13.4.6.4.2; 13.4.7.1; 13.4.7.5.1 and 13.4.7.5.2).

- 13.4.2.3.1 (c) Replace “are transported” with “occur”.
- 13.4.6.3.1.1 Delete “for transport” at the end of the second sentence.
- 13.4.7.3.1 Delete “for transport” at the end of the second sentence.
- 13.5 Throughout the whole sub-section replace “too dangerous to transport” and “too dangerous for transport” with “unstable”.
- (Applies to the following paragraphs: 13.5.1.1; 13.5.1.3.4; 13.5.2.1; 13.5.2.4 (twice); 13.5.3.1; 13.5.3.4; 13.5.4.1 and 13.5.4.5).
- 13.5.1.3.1 Delete “for transport” at the end of the second sentence and in sub-paragraph (c) replace “are transported” with “occur”.
- 13.5.3.3.1 Delete “for transport” at the end of the second sentence.
- 13.5.4.3.1 Delete “for transport” at the end of the second sentence.
- 13.6.1.1 Replace “stability” with “thermal stability” and delete “to determine if the substance is too dangerous to transport” at the end on the sentence.
- 13.6.1.3.1 Amend the last sentence to read as follows: “If explosion or ignition occurs then the substance is considered thermally unstable, shall be classified as an unstable explosive and is not permitted for transport.”
- [13.6.1.3.2 In the third sentence, insert the reference “13.6.1.3.3” between “given in” and “should be”].⁷
- 13.6.1.4.2 Amend the end of the sentence to read as follows: “...considered thermally unstable, shall be classified as an unstable explosive and is not permitted for transport.”
- 13.6.2.1 Replace “stability” with “thermal stability” and delete “to determine if the substance is too dangerous to transport” at the end on the sentence.
- 13.6.2.4.2 Amend the end of the sentence to read as follows: “...considered thermally unstable, shall be classified as an unstable explosive and is not permitted for transport.”
- 13.7.1.3 In the last paragraph “too dangerous for transport” by “unstable”.

Section 14

- 14.1 In the first sentence, replace “too dangerous for transport” by “unstable”.
- Amend the beginning of the second sentence to read as follows: “Conditions which may be encountered include...”.
- 14.3.1 In the first sentence, replace “transported unpackaged” with “classified unpackaged”.

⁷ **Note by the secretariat:** This is a correction to be included in a forthcoming corrigendum to the 6th revised edition of the Manual (i.e. it should not be considered as an amendment and therefore it will not be included in the consolidated list of amendments to the 6th revised edition).

- Amend the end of the second sentence to read as follows: "...or an individual unpackaged article, if appropriate".
- In the last sentence insert ", if appropriate," after "unpackaged".
- 14.4.1.1 In second sentence replace "or, if transported unpackaged, with "or, if appropriate,".
- Delete the third sentence ("In general... should be tested.").
- 14.4.1.4 Amend the end of the first sentence to read as follows: "... article(s) is considered thermally unstable, shall be classified as an unstable explosive and is not permitted for transport if:".
- 14.4.1.5 Delete the current table and add the following sentence: "No examples of results are given as these are too specific to the packaging or article tested.".
- 14.5.1.4 Amend the end of the sentence to read as follows: "... liquid shall be classified as an unstable explosive and is not permitted for transport.".
- In second paragraph, replace "its suitability for transport" with "its application".
- In the third paragraph replace "transported" with "included in the class of explosives".
- 14.5.1.5 Delete the current table and add the following sentence: "No examples of results are given as these are too specific to the packaging or article tested".
- 14.5.2.4 In the first sentence delete "and the packaged substance or article(s) too dangerous to transport".
- Insert a new second sentence as follows: "The article, packaged article(s) or packaged substance shall then be classified as an unstable explosive and is not permitted for transport.".
- 14.5.2.5 Delete the current table and add the following sentence: "No examples of results are given as these are too specific to the packaging or article tested".

Section 15

- 15.3.2 Replace "to be transported under conditions" by "likely to encounter conditions".
- 15.4.1.3 Delete the fourth sentence ("In all cases,... shipping density.").
- In the fourth last but one sentence, replace "which have to be transported in regions of high ambient temperatures" with "which can be subjected to high ambient temperatures".
- Figures 15.4.1.1 and 15.4.1.2 Amend the description for (B) to read as follows: "Cardboard tube".
- Figure 15.4.1.2 Delete the dimensions from the description of (E) and (F).
- 15.6.1.1 Replace "packaged as for transport" with "as packaged".
- 15.6.1.2 (a) Replace "transport" with "classification".
- 15.6.1.3.1 In the first sentence delete ", in the condition and form in which they are offered for transport,".

Section 16

- 16.1.1 At the end of the second sentence delete “a load is”.
In the last sentence replace “Class 1” with “the class of explosives”.
- 16.2.2 In sub-paragraph (a), replace “carried” with “classified”.
In sub-paragraph (b) (i), replace “detonation and/or ignition” with “initiation”.
- 16.3.1 In the first sentence replace “transport” with “classification”.
In the second sentence delete “and the conditions of transport” and replace “most disadvantageous” with “most severe”.
In the third sentence replace “carried” with “classified”.
- 16.4.1.3.1 In the first sentence replace “transport” with “classification”.
In the second sentence replace “carried” with “classified”.
- 16.4.1.3.2 (c) Replace “Class 1” with “the class of explosives”.
- 16.4.1.3.5 Delete the last sentence.
- 16.4.1.4 Delete the text between parentheses.
- 16.5.1.3 In the first sentence replace “transport” with “classification”.
In the second sentence and in the last but one sentence, replace “carried” with “classified”.
- 16.5.1.4 (c) Replace “Class 1” with “the class of explosives”.
- 16.5.1.6 In the second sentence replace “carried” with “classified”.
- 16.6.1.3.1 In the first sentence delete “, in the condition and form in which they are offered for transport,”.
- 16.6.1.3.9 In the first sentence, insert “Division 1.4, Compatibility Group S in transport” before “UN No.0012”.
- 16.6.1.4.6 In the last sentence, insert “Division 1.4, Compatibility Group S in transport” before “UN No.0012”.
- 16.7.1.3.1 In the second line replace the word “transport” by “classification” and “carried” with “classified”.

Section 17

- 17.1 In the description of Type 7(g), replace “transport” with “classification”.
- 17.3.4 In the second sentence replace “transport” with “classification”.
- 17.10.1.1 Replace “transport” with “classification”.
- 17.11.1.2.1 In the last but one sentence, replace “to surround articles transported bare” with “to surround bare articles”.
- 17.13.1.1 Replace “transport” with “classification”.
- 17.14.1.1 Replace “transport configuration” with “normal configuration”.

Section 18

- 18.1 Amend the end of the last paragraph to read: "... of ANEs for containment in portable tanks as an oxidizing substance."
- Table 18.1 Amend the end of note ^b to the table to read: "... of ANEs for containment in portable tanks as an oxidizing substance."
- 18.7.1.1 Amend the end of the first sentence to read: "... suitability for containment in portable tanks as an oxidizing substance."
- 18.7.1.4 Amend the middle of the second paragraph to read: "...should not be contained in portable tanks as an oxidizing substance...".
- 18.7.2.1 Amend the end of the first paragraph to read: "...to be contained in portable tanks as an oxidizing substance".
- 18.7.2.4.8 Amend the middle of the second paragraph to read: "...should not be contained in portable tanks as an oxidizing substance...".

Part II In the title page, delete "OF DIVISION 4.1" and "OF DIVISION 5.2".

Section 20

- 20.1.1 In the first sentence, delete "of Division 4.1" and "of Division 5.2 (see respectively sub-section 2.4.2.3 and section 2.5.3 of the Model Regulations)".
- Delete "for transport" at the end of the second sentence.
- Amend the third sentence to read: "It should be used in conjunction with the classification principles given in Section 20, paragraphs 20.4.2 and 20.4.3 and the flow chart given in Figure 20.1 of this Manual, sub-sections 2.4.2.3 and 2.5.3 of the Model Regulations and chapters 2.8 and 2.15 of the GHS."
- 20.1.2 Amend the last sentence to read: "The classification tests should be performed in the second stage."
- 20.2.1 In the first sentence, delete "offered for transport".
- Amend sub-paragraph (a) to read: "They are explosives (see Part I);".
- In sub-paragraph (b), delete "according to the classification procedure for Division 5.1" and replace "procedure defined" with "procedure described".
- In the Note under (b):
- First paragraph: delete "meeting the criteria of Division 5.1" and "above"
 - Last paragraph: amend the end to read: "... for classification as an oxidizing substance (see section 34)."
- Amend sub-paragraph (c) to read: "They are organic peroxides (see 20.2.2);".
- 20.2.2 In the first sentence, replace "transport" with "classification" and replace "classification procedures" with "procedures".
- 20.2.3 In sub-paragraph (a) replace "paragraph 2.4.2.2.1.1 of the Model Regulations" with "20.2.1".

- In sub-paragraph (c) replace “paragraph 2.5.1 of the Model Regulations” with “20.2.2”.
- 20.2.4 Amend the middle of the first sentence to read: “... to a generic entry in the dangerous goods list of Chapter 3.2 of the Model Regulations may be classified...”.
- 20.2.5 Replace “transport” with “classification”.
- 20.2.6 Amend the end of the paragraph to read: “... self-heating substances (see section 32.5.2).”.
- 20.3.3.2 Amend the end of the sentence to read: “... series 3 of the acceptance procedure for the class of explosives (see Part I).”.

Figures 20.1 (a) and 20.1 (b) Amend the title to read as follows:

“Figure 20.1: FLOW-CHART SCHEME FOR SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES”

Replace current figures 20.1 (a) and 20.1 (b) in the Manual with decision logic 2.15 in Chapter 2.145 of the 6th revised edition of the GHS and amend as follows:

In the first box replace “ORGANIC PEROXIDE” with “Self-reactive substance or organic peroxide”.

Insert a note to new Figure 20.1 to read as follows:

“NOTE: For transport:

- Type A: not accepted for transport in that packaging;
- Type B: accepted for transport in packages of not more than 25 kg net mass with “Explosive” subsidiary hazard label;
- Type C: accepted for transport in packages of not more than 50 kg net mass;
- Type D: accepted for transport in packages of not more than 50 kg net mass;
- Type E: accepted for transport in packages of not more than 400 kg/450 litres;
- Type F: may be considered for transport in IBCs or tanks;
- Type G: shall be considered for exemption.”

- 20.4.1.1 Delete the text in parentheses at the end of the first sentence.
- In the last but one sentence, delete “of Division 4.1” and “of Division 5.2”.
- 20.4.1.3 At the end of the first sentence, delete “as used in transport (see sub-section 2.5.3.4 of the Model Regulations)”.
- In sub-paragraph (a) delete “during transport”.
- 20.4.1.4 Delete “in paragraph 1.2.1 of the Model Regulations” and insert a reference to footnote 1 after “liquids” and the corresponding footnote to read as follows:

¹ *Liquid means a dangerous good which at 50 °C have a vapour pressure of not more than 300 kPa (3 bar), which is not completely gaseous at 20 °C and at a pressure of 101.3 kPa, and which has a melting point or initial melting point of 20 °C or less at a pressure of 101.3 kPa. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity*

(penetrometer test) prescribed in section 2.3.4 of Annex A of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).”

- 20.4.2 Replace the first sentence with the following: “Self-reactive substances are classified in one of the seven categories “Types A to G” according to the following principles².”

Insert a footnote to read as follows:

² *For transport, the following principles should be applied to the classification of self-reactive substances not listed in the Table of paragraph 2.4.2.3.2.3 of the Model Regulations.*”

Amend sub-paragraphs (a) to (g) to read as follows:

- “(a) Any self-reactive substance which can detonate or deflagrate rapidly, as packaged, will be defined as self-reactive substance TYPE A;
- (b) Any self-reactive substance possessing explosive properties and which, as packaged, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package will be defined as self-reactive substance TYPE B;
- (c) Any self-reactive substance possessing explosive properties when the substance as packaged cannot detonate or deflagrate rapidly or undergo a thermal explosion will be defined as self-reactive substance TYPE C;
- (d) Any self-reactive substance which in laboratory testing:
- (i) detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or
 - (ii) does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or
 - (iii) does not detonate or deflagrate at all and shows a medium effect when heated under confinement;
- will be defined as self-reactive substance TYPE D;
- (e) Any self-reactive substance which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement will be defined as self-reactive substance TYPE E;
- (f) Any self-reactive substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power will be defined as self-reactive substance TYPE F;
- (g) Any self-reactive substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power, provided that it is thermally stable (self-accelerating decomposition temperature is 60 °C to 75 °C for a 50 kg package), and, for liquid mixtures, a diluent having a boiling point greater than or equal to 150 °C is used for desensitization will be defined as self-reactive substance

TYPE G. If the mixture is not thermally stable or a diluent having a boiling point less than 150 °C is used for desensitization, the mixture shall be defined as self-reactive substance TYPE F.”

- 20.4.3 Replace the first sentence with the following: “Organic peroxides are classified in one of the seven categories “Types A to G” according to the following principles³.”

Insert a footnote to read as follows:

³ *For transport, the following principles should be applied to the classification of self-reactive substances not listed in the Table of paragraph 2.4.2.3.2.3 of the Model Regulations.”*

Amend sub-paragraphs (a) to (g) to read as follows:

- “(a) Any organic peroxide which, as packaged, can detonate or deflagrate rapidly will be defined as organic peroxide TYPE A;
- (b) Any organic peroxide possessing explosive properties and which, as packaged, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package will be defined as organic peroxide TYPE B;
- (c) Any organic peroxide possessing explosive properties when the substance or mixture as packaged cannot detonate or deflagrate rapidly or undergo a thermal explosion will be defined as organic peroxide TYPE C;
- (d) Any organic peroxide which in laboratory testing:
- (i) detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or
 - (ii) does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or
 - (iii) does not detonate or deflagrate at all and shows a medium effect when heated under confinement; will be defined as organic peroxide TYPE D;
- (e) Any organic peroxide which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement will be defined as organic peroxide TYPE E;
- (f) Any organic peroxide which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power will be defined as organic peroxide TYPE F;
- (g) Any organic peroxide which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power, provided that it is thermally stable (self-accelerating decomposition temperature is 60°C or higher for a 50 kg package), and, for liquid mixtures, a diluent having a boiling point of not less than 150 °C is used for desensitization, will be defined as organic peroxide TYPE G. If the organic peroxide is not thermally stable or a diluent having a boiling point less than 150 °C is used for desensitization, it shall be defined as organic peroxide TYPE F.”

- 20.4.4 Replace “transport” with “classification” in paragraphs 20.4.4.4; 20.4.4.6; and 20.4.4.9.
- 20.4.4.8 Replace “transport” with “containment”.
- 20.5.2 In the first sentence, replace “transported” with “classified”.
- Figure 20.3 In current boxes 2 and 10, delete “for transport”;
In box 6 replace “in package” with “as packaged”;
Delete the words “Exit A”, “Exit B”, “Exit C”, “Exit D” and “Exit D” and amend the text in the exit boxes as follows:
- Amend the text in the exit box currently under “Exit A” to read: “Type A”;
 - Amend the text in the exit box currently under “Exit B” to read: “Type B”;
 - Amend the text in the exit box currently under “Exit C” to read: “Type C”;
 - Amend the text in the exit box currently under “Exit D” to read: “Type D”;
- Delete the words “of Figure 20.1 (b)” of the reference “go to box 11”.⁸

Section 21

- 21.2.1 In the second sentence replace “transport” with “containment”.
- 21.2.2 In the paragraph under sub-paragraphs (a) and (b), amend the beginning of the first sentence to read: “If the screening...”.
In the second sentence replace “transport” with “containment”.
- 21.3.2 Delete “during transport”.
- 21.3.3 Replace: “the substance is to be transported under conditions” with “the substance is likely to encounter conditions”.
- 21.4.2 Delete the whole sub-section (21.4.2 to figure 21.4.2.2) and renumber subsequent sub-sections 21.4.3 and 21.4.4 accordingly.

Section 22

- 22.1, 22.2, 22.3.1 and 22.4.1.3 Delete “for transport”.
- 22.4.1.1 Delete “as for transport”.

Section 22

- 23.4.2.3.2 In the last sentence replace “transport” with “the package”.

⁸ **Note by the secretariat:** *The Sub-Committee is invited to consider whether the proposed reference “go to box 11”, should be amended to read “go to box 11 of figure 20.1” as there is no box 11 in figure 20.3.*

Section 24

24.1, 24.3.1 and 24.4.1.3 Delete “for transport”.

24.4.1.1 Delete “as for transport”.

Section 25

In the last sentence of footnote 1, replace “transport conditions” with “packing conditions”.

Section 26

26.1.1.1 In the second sentence, replace “transport” with “containment”.

26.3.3 Amend the start of the third sentence to read: “If the substance is under temperature control a solid but is liquid...”.

Section 27

27.1.1; 27.2.1; 27.3.1 and 27.4.3.1 Delete “for transport”.

27.4.2 In the title, replace “g.2” with “G.2”.

Section 28

28.1 In the second sentence, delete “as used in transport”.

In sub-paragraph (b) and in the second reference, replace “Frank-Kamenskii” with “Frank-Kamenetskii”.

28.2.1 Delete “at transport temperatures”.

28.2.2 In notes a, b and c to Table 28.1 replace “transported” with “contained”.

In the sentence after the table, delete “for transport”. 28.2.3 In the note to Table 28.2, delete “for transport”.

28.2.4 Replace “transported” with “contained”.

28.3.2 In the first sentence delete “to be transported” and at the beginning of the second sentence delete “transport in”.

28.3.5 In the first sentence, delete “offered for transport”.

28.4.4.1.1 At the end of the first sentence delete “as for transport”.

28.4.4.1.2 Delete “offered for transport”.

28.4.4.2.6 At the end of the first sentence delete “offered for transport”.

Part III Amend the end of the title to read: “... RELATING TO VARIOUS HAZARD CLASSES”.

Contents of Part III Amend in accordance with the changes to the headings of the specific sections.

Section 30

- 30.1.1 In sub-paragraph (a) insert “and Chapter 2.3 of the GHS” after “Regulations”.
- In sub-paragraph (b): delete “of Class 3” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “and Chapter 2.6 of the GHS” at the end.
- In sub-paragraph (c): replace “Readily combustible” with “Flammable”, delete “of Division 4.1” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “and chapters 2.7 and 2.17 of the GHS” at the end.
- In sub-paragraph (d): delete “of Division 4.2” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “and chapters 2.9, 2.10 and 2.11 of the GHS” at the end.
- In sub-paragraph (e): delete “of Division 4.3” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “and Chapter 2.12 of the GHS” at the end.
- In sub-paragraph (f): delete “of Division 5.1” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “chapters 2.13 and 2.14 of the GHS” at the end.
- In sub-paragraph (g): Amend the beginning to read “Corrosive substances” and in the text between parentheses replace “Manual and Chapter” with “Manual, Chapter” and insert “and Chapter 2.16 of the GHS” at the end.
- 30.1.2 Amend to read: “Section 36 is reserved, to allow for future developments.”
- 30.2 In the first sentence replace “transport” with “classification”.

Section 31

Amend the end of the title to read: “... RELATING TO FLAMMABILITY OF AEROSOLS”

- 31.1.1 Amend the end of the first sentence to read: “... classification of aerosols as either flammable (Division 2.1/Category 1 or 2) or non-flammable (Division 2.2/Category 3).”
- In the second sentence, insert “Chapter 2.3 of the GHS,” after “Model Regulations.”
- 31.1.2 Replace “adequately assess the hazard of flammable aerosol” with “adequately assess the flammability hazards of aerosols”.
- 31.1.3 In the definition for “*Aerosols or aerosol dispensers*” delete “meeting the requirements of section 6.2.4 of the Model Regulations,” and insert the following sentence at the end of the definition: “(for transport purposes the receptacles need to meet the requirements of section 6.2.4 of the Model Regulations)”.
- In Note 2 under the definition of “*Flammable components*” insert “and section 2.7.1. of the GHS” at the end of the first sentence and delete “of Division 4.1” in the second sentence.
- 31.2.1 Delete “offered for transport” in the first sentence.

Amend the end of the first sentence as follows: "... of Chapter 3.3 of the Model Regulations. Aerosols for supply and use shall be subjected to the classification scheme as set out in section 2.3.2 of the GHS. For flammability, aerosols shall be..."

Delete the last sentence ("The classification procedure...for transport").

Amend the beginning of the Note to read: "Aerosols not submitted..." and add "(Category 1)" at the end.

31.3 Delete "flammable" from the title.

31.3.1 In the first sentence, insert "non-flammable," after "classified as".

Amend sub-paragraph (a) to read as follows:

"(a) The aerosol is classified as extremely flammable (Division 2.1/Category 1) if:

(i) it contains 85% or more flammable components and the chemical heat of combustion exceeds or is equal to 30 kJ/g, or

(ii) if it meets the criteria for extreme flammability in 31.3.2 for spray aerosols or in 31.3.4 for foam aerosols; and

(b) The aerosol is classified as flammable (Division 2.1/Category 2) if it meets the criteria for flammability in 31.3.2 for spray aerosols or in 31.3.4 for foam aerosols; and"

Current sub-paragraph (b) becomes (c). Amend the beginning to read as follows: "The aerosol is classified as non-flammable (Division 2.2/Category 3) if it contains..."

31.3.2 Amend the first sentence to read as follows: "In the case of spray aerosols the classification shall account for the chemical heat of combustion and the results of the ignition distance test (see section 31.4 of this Manual).

Delete sub-paragraphs (a) and (b).

31.3.4 Delete sub-paragraphs (a) and (b).

31.3.5 Replace "criteria" with "procedure".

31.4.4.2 In the first sentence delete "as flammable, extremely flammable or non-flammable" in the first sentence.

Replace the sub-paragraphs (a) to (d) with the following table:

Table 31.5: Classification criteria for spray aerosols

Criteria	Model Regulations Division	GHS Category
Ignition occurs at a distance of 75 cm or more, regardless of the heat of combustion	2.1	1
Ignition occurs at a distance of less than 75 cm, with a chemical heat of combustion equal to or more than 20 kJ/g	2.1	2
Ignition occurs at a distance equal or greater than 15 cm but less than 75 cm, with a chemical heat of combustion less than 20 kJ/g	2.1	2
No ignition occurs in the ignition distance test and the chemical heat of combustion is less than 20 kJ/g	Perform enclosed space ignition test described in section 31.5	

31.5.4.4 Amend to read as follows:

“Spray aerosols with a chemical heat of combustion less than 20 kJ/g for which no ignition occurs in the ignition distance test (see sub-section 31.4 of this Manual) shall be classified according to the following criteria:”

Insert the following new table 31.6:

Table 31.6: Criteria for the enclosed space ignition test

Criteria	Model Regulations Division	GHS Category
Time equivalent is less than or equal to 300 s/m ³ or the deflagration density is less than or equal to 300 g/m ³	2.1	2
Time equivalent is more than 300 s/m ³ and the deflagration density is more than 300 g/m ³	2.2	3

31.6.4.2 Amend to read as follows: “Foam aerosols shall be classified according to the following criteria:”

Insert the following new table 31.7:

Table 31.7: Criteria for foam aerosols

Criteria	Model Regulations Division	GHS Category
Flame height is 20 cm or more and the flame duration is 2 s or more	2.1	1
Flame height is 4 cm or more and the flame duration is 7 s or more	2.1	1
Flame height is 4 cm or more and the flame duration is 2 s or more	2.1	2
Flame height is 4 cm or less and the flame duration is 2 s or less (if any)	2.2	3

Section 32

In the title, delete: “OF CLASS 3”.

32.1 Amend the end of the first sentence to read: “... flammable liquids (Class 3/Categories 1 to 4).”

In the second sentence, insert: “, Chapter 2.6 of the GHS” after “Model Regulations” .

Insert a new sentence at the end to read as follows: “Note 2 to paragraph 2.1.2.7 of the GHS should also be taken into consideration.”

- 32.2.2 Amend the beginning of the first sentence to read as follows: “Substances are classified as flammable liquids...”.

Amend the last sentence to read as follows:

“However, liquids with a flash point of more than 35 °C and not more than 60 °C may be regarded as non-flammable for some regulatory purposes (e.g. transport) if they do not sustain combustion (i.e. negative results have been obtained in the sustainability tests L.2 in sub-section 32.5.2 of this Manual).”

- 32.2.3 Amend the beginning of the first sentence to read as follows: “Flammable liquids listed by name in the dangerous goods list of Chapter 3.2 of the Model Regulations should be...”.

Amend the end of the third sentence to read as follows: “...or more than 65.6°C in an open-cup test, may be classified as “generic” or “not otherwise specified” dangerous goods with a flash point at or below that limit.”.

In the last sentence, insert “/Category 3” after “packing group III” and “/Category 2 when offered” after “packing group II”.

- 32.2.4 Delete “of substances”.

- 32.2.5 Delete “for the purposes of the Model Regulations” and replace “have passed a suitable combustibility test” with “yield negative results when submitted to a suitable combustibility test”.

- 32.3.1.1 Delete “that presents a risk”.

Insert the following new table 32.1 and related note:

“Table 32.1: Hazard grouping based on flammability

Criteria	Model Regulations Packing group	GHS Category
Flash point < 23 °C and initial boiling point ≤ 35 °C	I	1
Flash point < 23 °C and initial boiling point > 35 °C	II	2
Flash point ≥ 23 °C and ≤ 60 °C and initial boiling point > 35 °C	III	3
Flash point > 60 °C and ≤ 93 °C	<i>Not applicable</i>	4

NOTE: *The criterion of initial boiling point > 35 °C for packing group III/Category 3 is currently not used in GHS.*”.

- 32.3.1.2 Replace “risk” with “hazard” and delete “the hazard grouping shown in”.

- 32.3.1.3 Replace “risk(s)” and “risks” with “hazard characteristics” (three times) and “hazard group/hazard grouping” with “packing group/category” (three times).⁹

⁹ **Note by the secretariat:** *In the marked-up copy in informal document TDG/INF.7/Add.4 – GHS/INF.5/Add.4, the terms “hazard group/hazard grouping” have been replaced by packing*

- Amend the end of the paragraph to read: "... packing group for such a substance."
- 32.3.2.1 In the first sentence, replace "United Nations" with "Model Regulations"; insert "flammable liquids" after "liquid desensitized explosives" and in the text between parentheses insert "and note 2 to paragraph 2.1.1.1 of the GHS" at the end.
- In the last sentence replace "liquid mixture to suppress" with "liquid mixture in order to suppress".
- 32.3.2.2 Delete and renumber subsequent paragraphs accordingly .
- 32.3.2.2 (new; former 32.3.2.3) In the first sentence:
- Amend the beginning to read as follows: "Where a substance meets the criteria for classification as an explosive but is diluted to be exempted from this class..."
 - Replace "for another class or division" with "for another class"
 - Replace "in that class or division" with "in that class"
 - Replace "Class 1" with "the Class of explosives"
- In the second sentence, insert "for some regulatory purposes (e.g. transport)" after "non-dangerous" and replace "2.1.3.5.3" with "2.1.3.6.3".
- 32.4.1 Amend the beginning of the title to read: "Tests for non-viscous ...".
- 32.4.2 Amend the beginning the title to read: "Tests for viscous ...".
- 32.4.2.1 In the first sentence, replace "substances of Class 3" with "liquids" and insert "as per sub-section 2.3.2.2 of the Model Regulations" after "is determined".
- 32.4.2.2 Delete "the ISO method."
- 32.5.1.4 Amend the end of the paragraph to read as follows: "(see 2.3.2.2 of the Model Regulations) or may not be subject to the Model Regulations (see 2.3.2.5 of the Model Regulations)."
- 32.5.2.2.1 Amend the beginning of the last but one sentence in the introductory paragraph to read as follows: "Essential diagrams for a suitable apparatus are given in figures..."

Section 33

In the title, replace "CLASS 4" with: "FLAMMABLE SOLIDS, SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION AND SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES".

- 33.1 Amend the end of the paragraph to read as follows: "relating to flammable solids, substances liable to spontaneous combustion and substances which, in contact with water, emit flammable gases."
- 33.2 Amend the title to read as follows: "Flammable solids and solid desensitized explosives".

group" (instead of "packing group/category" as indicated here). The Sub-Committee is invited to revised the text of the paragraph and clarify the terms to be used.

33.2.1.1.1 Amend the first sentence to read as follows: “Section 33.2.1.3 presents the scheme for the classification of flammable solids (see Chapter 2.4, sub-section 2.4.2.2 of the Model Regulations and Chapter 2.7 of the GHS).”.

In the second sentence:

- Insert “Chapter 2.4,” after “principles given in” and “Chapter 2.7, paragraph 2.7.2. of the GHS,” after “Model Regulations.”.
- Delete “here” at the end.

33.2.1.1.2 Replace “Division 4.1” with “the class of flammable solids”.

33.2.1.1.3 Delete “and in the Model Regulations”, replace “readily combustible” with “flammable” and delete : for transport”.

33.2.1.2.1 Amend the first sentence to read: “Products should be classified according to the criteria in Chapter 2.4, paragraphs 2.4.2.2.2 and 2.4.2.2.3 of the Model Regulations and Chapter 2.7, paragraph 2.7.2 of the GHS, unless it is impractical (e.g. because of the physical form) to perform the tests.”.

In the second sentence, delete “or articles”.

Delete the last sentence (“The classification procedure...for transport.”)

33.2.1.3 Amend title to read as follows: “Classification procedure for flammable solids”.

33.2.1.3.2 In the second and fourth sentences delete “of Division 4.1”.

In the fourth sentence replace “readily combustible” with “flammable”; “packing group II or packing group III” with “packing group II/Category 1 or packing group III/ Category 2”.

Fig. 33.2.1.3 Amend the title to read as follows: “FLOW CHART FOR CLASSIFICATION OF FLAMMABLE SOLIDS, EXCEPT METAL POWDERS”

In the text in exit boxes, replace:

- “Division 4.1/P.G.II” with “PG II/Cat. 1”
- “Division 4.1/P.G.III” with “PG III/Cat.2”
- “Not readily combustible solid of Division 4.1” with “Not classified as combustible solid”.

33.2.1.4 In the title, replace “readily combustible” with “flammable”.

33.2.1.4.4.1 In the first sentence, replace “in Division 4.1” by “as flammable solids” and “33.2.1.3.4.2” with “33.2.1.4.3.2”.

33.2.1.4.4.2 Insert “/Category 1” after “packing group II” (twice).

33.2.1.4.4.3 Insert “/Category 2” after “packing group III” (twice).

33.2.1.4.5 In the column “Result” replace “Not 4.1” with “Not a flammable solid” (three times).

33.2.3 Delete “of Division 4.1”.

33.2.3.1 Amend the first sentence to read as follows: “This sub-section presents the Model Regulations scheme for the classification of desensitized explosives as flammable solids (see Chapter 2.4, sub-section 2.4.2.4 of the Model Regulations and note 2 to paragraph 2.1.1.1 of the GHS).”

- In the second sentence, replace “solid mixture to suppress” with “solid mixture in order to suppress”.
- 33.2.3.2 Delete and renumber subsequent paragraphs accordingly.
- 33.2.3.2 (new; former 33.2.3.3) In the first sentence:
- Amend the beginning to read as follows: “Where a substance meets the criteria for classification as an explosive but is diluted to be exempted from this class by test series 6...”.
 - Replace “class or division” with “hazard class”; “in that class or division” with “in that class” and “Class 1” with “the class of explosives”.
- In the second sentence, insert “for some regulatory purposes (e.g. transport)” after “non-dangerous” and replace “2.1.3.5.3” with “2.1.3.6.3”.
- 33.2.3.3 (new; former 33.2.3.4) Amend to read as follows: “The classification scheme of desensitized explosives for supply and use (including storage” according to the GHS is given in section 51.”.
- 33.3 Amend the title to read: “Pyrophoric and self-heating substances”.
- 33.3.1.1.1 Amend the first sentence to read as follows:
- “This sub-section presents the scheme for the classification of substances liable to spontaneous combustion i.e. pyrophoric and self-heating substances (see Chapter 2.4, section 2.4.3 of the Model Regulations and Chapter 2.9, 2.10 and 2.11 of the GHS).
- In the second sentence, replace “sub-sections 2.4.3.2 and 2.4.3.3 of the Model Regulations” with “these references” and delete “here”.
- 33.3.1.1.2 In sub-paragraph (a), amend the beginning to read as follows: “Liquid or solid substances which, even...”.
- In sub-paragraph (b), second sentence, replace “These substances” with “They” .
- 33.3.1.1.3 Delete “for transport”.
- 33.3.1.2.1 Amend the beginning of the first sentence to read as follows: “Products should be subjected to the classification procedures, unless it is ...”.
- Delete the second sentence.
- 33.3.1.3 In the title, delete “for substances liable to spontaneous combustion”.
- 33.3.1.3.1 Delete “here,” in the second sentence.
- In the sentence, delete “of Division 4.2”.
- In the last sentence, insert “/Category 1” after “Packing group I”.
- 33.3.1.3.2 In the third sentence delete “here”.
- In the fourth sentence delete “of Division 4.2”.
- In the last sentence, insert “/Category 1” after “Packing group I”.
- 33.3.1.3.3.1 In the fourth sentence replace “assigned to Division 4.2.” with “classified as a self-heating substance.”.
- Amend the end of the fifth sentence to read: “packing group II/Category 1”.
- In the last sentence, delete “here”.

- 33.3.1.3.3.2 Delete “of Division 4.2”.
- 33.3.1.3.3.3 Amend the end of the paragraph to read: “packing group II/Category 1.
- 33.3.1.3.3.4 In sub-paragraphs (a) and (b), replace “transported” with “contained”. In the last sentence, delete “of Divisions 4.2” (twice) and insert “/Category 2” after “packing group III”.
- 33.3.1.3.3.5 Amend the end of the sentence to read: “...positive result in this test may be classified as self-heating substances (see 20.2.6).”.

Figure 33.3.1.3.3.1 In the rectangular boxes on the right hand side,

- Replace:
 - “Packing Group II” with “PG.II/Cat.1”
 - “Packing Group III” with “PG.III/Cat.2”, and
 - “transported” with “contained” (twice)
- Delete “of Division 4.2”

In the current note replace “classified in Divisions 4.2” with “classified as self-heating substances”.

- 33.3.1.4.4 Amend the end of the sentence to read as follows: “... classified as a pyrophoric solid, packing group I/Category 1.”
- 33.3.1.4.5 In the column “Result” replace (three times) “Not PG I of 4.2” with “Not a pyrophoric solid”.
- 33.3.1.5.4 Amend the end of the sentence to read: “... classified as a pyrophoric liquid, packing group I/Category 1.”
- 33.3.1.5.5 In the column “Result” replace “Not 4.2” with “Not a pyrophoric liquid” (two times) and “4.2” with “pyrophoric liquid” (four times).
- 33.3.1.6.3 In the last but one sentence, insert “/Category 1” after “packing group II”.
- In sub-paragraphs (a) and (b) replace “transported” with “contained”.
- 33.3.1.6.4.2 In the first sentence, replace “in Divisions 4.2” with “as a self-heating substance”.
- In sub-paragraphs (a) and (b) replace “transported” with “contained”.
- 33.3.1.6.4.3 Insert “/Category 1” after “Packing group II”.
- 33.3.1.6.4.4 In the first sentence, insert “/Category 2” after “packing group III”.
- In sub-paragraphs (a) and (b), replace “transported” with “contained”.
- 33.3.1.6.5 In the column “Result” replace:
- “P.G. III of 4.2” with “self-heating PG III/Cat.2” (three times);
 - “P.G. II of 4.2” with “self-heating PG II/Cat.1” (three times); and
 - “Not 4.2” with “Not self-heating” (twice).
- 33.4 Amend the title to read as follows: “Water-reactive substances”.

- 33.4.1.1.1 Amend the first sentence to read as follows:
“This section of the Manual presents the scheme for the classification of substances which, in contact with water, emit flammable gases (see Chapter 2.4, section 2.4.4 of the Model Regulations and Chapter 2.12 of the GHS).”
Amend the middle of the last sentence to read: “...classification principles given in these references, together with...” and delete “here” at the end.
- 33.4.1.1.3 In the third line delete “for transport”.
- 33.4.1.2.1 In the first sentence, delete “offered for transport”, insert “Chapter 2.4,” after “set out in” and insert “and Chapter 2.12 of the GHS” after “Model Regulations”.
Delete the last sentence.
- 33.4.1.3.1 At the end of the fourth sentence replace “assigned to Division 4.3” with “and the substance should be classified as a substance which, in contact with water, emits flammable gases”.
In the last but one sentence delete “here”.
In the last sentence, delete “of Division 4.3” and insert:
- “/category 1” after “packing group I”;
 - “2” after “II”; and
 - “3” after “III”.
- 33.4.1.4.3.5 In the last but one sentence insert “/category” after “packing group” and replace “Division 4.3” with “this hazard class”.
- 33.4.1.4.4.1 In the first sentence, replace “Division 4.3” with “this hazard class”.
- 33.4.1.4.4.2 At the beginning of the paragraph, insert “/Category 1” after “Packing Group I”.
- 33.4.1.4.4.3 Insert “/Category 2” after “Packing Group II” at the beginning of the paragraph and “/ Category 1” after “Packing Group I” at the end.
- 33.4.1.4.4.4 Insert “/Category 3” after “Packing Group III” at the beginning of the paragraph and “/Category 2” after “Packing Group II” at the end.
- 33.4.1.4.5 In the column “Result” replace “Not 4.3” with “Not classified in this hazard class”.

Section 34

Amend the end of the title to read: “... RELATING TO OXIDIZING SOLIDS AND LIQUIDS”.

- 34.1.1 Amend the first sentence to read as follows:
“This section presents the scheme for the classification of oxidizing solids and liquids (see Chapter 2.5, section 2.5.2 of the Model Regulations and Chapters 2.13 and 2.14 of the GHS).”
In the last sentence, replace “paragraphs 2.5.2.2 and 2.5.2.3 of the Model Regulations” with “these references” and delete “here”.

- 34.2.1 Amend the first sentence to read: “New products should be classified according to the criteria unless it is impracticable (e.g. because of the physical properties) to perform the tests.”.
Delete the last sentence.
- 34.3 In the first sentence delete “outlined here”, replace “substances” with “solids and liquids” and delete “for transport”.
- 34.3.1 In the first sentence delete “substance”.
Delete the second sentence (“The recommended test...Regulations”)
Amend the current third sentence to read as follows:
“Whether a solid is oxidizing and, if so, whether packing group I, II or III/category 1, 2 or 3 should be assigned, is decided on the basis of the test result. For transport, in case of solids presenting more than one hazard characteristics, see also **Precedence of hazards characteristics** in Chapter 2.0, section 2.0.3 of the Model Regulations.”
In the last sentence, replace “substance” with “solid”.
- 34.3.2 In the first sentence delete “substance”.
In the second sentence, delete “given here”.
Amend the last sentence to read as follows:
“Whether a liquid is oxidizing and, if so, whether packing group I, II or III/category 1, 2 or 3 should be assigned, is decided on the basis of the test result. For transport, in case of liquids presenting more than one hazard characteristics, see also **Precedence of hazards characteristics** in Chapter 2.0, section 2.0.3 of the Model Regulations.”
- 34.4 In the title replace “substances” with “solids and liquids”.
- 34.4.1.1 In the last sentence, insert “/category 1 or 2” after “packing group I or II”.
- 34.4.1.2.6 In the first sentence delete “, in the form in which it will be transported,”.
- 34.4.1.3.1 In the second sentence replace “in which it will be transported (see” with “as determined in paragraph 34.4.1.2.6,”.
- 34.4.1.3.3 In the last sentence insert “/category” after “packing group” and replace “in Division 5.1” with “as an oxidizing solid”.
- 34.4.1.4.2 At the beginning of the fourth paragraphs following the introductory sentence, replace:
- “Packing group I” with “PG I/cat. 1”
 - “Packing group II” with “PG II/cat.2”
 - “Packing group III” with “PG III/cat.3”, and
 - “Not Division 5.1” with “Not an oxidizing solid”
- At the end of the paragraph starting with “PG II/cat.2”, replace “packing group I” with “packing group I/category 1”.
- At the end of the paragraph starting with “PG III/cat.3”, replace “packing groups I and II” with “packing groups I and II/categories 1 and 2”.

Amend the beginning of the last paragraph to read: “For the assignment of precedence of hazards for transport purposes in the case of substances having other hazards, e.g. toxicity or corrosivity, the requirements of Chapter 2.0, section...”.

34.4.1.5 In the column “Result” replace:

- “PG III” with “PG III/cat.3” (twice)
- “PG II” with “PG II/cat.2” (eight times)
- “PG I” with “PG I/ cat.1” (once), and
- “Not 5.1” with “Not an oxidizing solid” (four times)

In note ^a insert “/cat. 2” after “PG II”.

In note ^b insert “/cat. 3” after “PG III”.

In note ^c insert “as an oxidizing solid” after “classified”.

34.4.2.1 In the text of footnote 2, replace “the oxidizing properties of the substance” with “their oxidizing properties”.

[34.4.2.25 Amend the paragraph number to read: “34.4.2.2.5”].¹⁰

34.4.2.4.2 At the beginning of the fourth paragraphs following the introductory sentence, replace:

- “Packing group I” with “PG I/cat.1”;
- “Packing group II” with “PG II/cat.2”;
- “Packing group III” with “PG III/cat.3”; and
- “Not Division 5.1” with “Not an oxidizing liquid”.

At the second indent of the criteria for “PG II/cat.2” replace “packing group I” with “packing group I/category 1”.

At the second indent of the criteria for “PG III/cat.3” replace “packing group I and II” with “packing groups I and II /categories 1 and 2”.

Amend the beginning of the last paragraph to read: “For the assignment of precedence of hazards for transport purposes in the case of substances having other hazards, e.g. toxicity or corrosivity, the requirements of Chapter 2.0, section...”.

34.4.2.5 In the column “Result” replace:

- “PG III” with “PG III/cat.3” (three times);
- “PG II” with “PG II/cat.2” (four times);
- “PG I” with “PG I/cat. 1” (once); and
- “Not Div. 5.1” with “Not an oxidizing liquid”(five times).

In note ^b insert “transport” before “Class 8” and add (see Chapter 2.0, section 2.0.3 of the Model regulations)” and the end.

¹⁰ ***Note by the secretariat:*** This is a correction to be included in a forthcoming corrigendum to the 6th revised edition of the Manual (i.e. it should not be considered as an amendment and therefore it will not be included in the consolidated list of amendments to the 6th revised edition).

- 34.4.3.2.2 At the end of the last sentence insert “/category 3” after “Packing Group III”
- 34.4.3.2.3 In the last sentence insert “/category 3” after “Packing Group III”
- 34.4.3.4 In the column “Sample”, replace:
- “Packing Group I” with “PG I/cat.1”
 - “Packing Group II” with “PG II/cat.2”, and
 - “Packing Group III” with “PG III/cat.3”
- 34.4.3.5.4 In the introductory sentence delete “transport” and insert “/categories” after “packing groups”.
- At the beginning of the fourth paragraphs following the introductory sentence, replace:
- “Packing group I” with “PG I/cat.1”
 - “Packing group II” with “PG II/cat.2”
 - “Packing group III” with “PG III/cat.3”, and
 - “Not Division 5.1” with “Not an oxidizing solid”
- Amend the last paragraph to read as follows: “For the assignment of precedence of hazards for transport purposes in the case of substances having other hazards, e.g. toxicity or corrosivity, the requirements of Chapter 2.0, section 2.0.3 of the Model Regulations should be met”.
- Delete the rest of the paragraph (“In GHS terminology... of calcium peroxide and cellulose).
- 34.4.3.6 Amend the heading of the last column to read as follows: “Resulting packing group/category” and replace:
- “III” with “III/3” (twice)
 - “II” with “II/2” (four times)
 - “I” with “I/1” (three times), and
 - “Not 5.1” with “Not an oxidizing solid” (three times)
- At the end of note ^a insert “/cat. 2”.
- At the end of note ^b insert “/cat. 3”.

Section 36

Amend to read: “[36. *Reserved*]”.

Section 37

Amend the end of the title to read: “... RELATING TO SUBSTANCES CORROSIVE TO METALS”.

- 37.1.1 Delete “United Nations” and replace “corrosive substances of Class 8” with “substances corrosive to metals”.

In the text between parentheses, amend the beginning to read “see Chapter 2.8 sections” and insert “and Chapter 2.16 of the GHS” after “Model Regulations”.

The rest of this paragraph, “The method for...purposes of classification” becomes new paragraph 37.1.2, with the following amendments:

- Insert “or 435” after “OECD Guideline 404”; and
- “and Chapter 3.2 of the GHS” after “Model Regulations”

37.1.3 Insert a new paragraph to read as follows:

“37.1.3 In assigning the packing group to a substance or mixture in accordance with Chapter 2.8, paragraph 2.8.2.2 of the Model Regulations, account shall be taken of human experience in instances of accidental exposure. In the absence of human experience, the grouping shall be based on data obtained from experiments with OECD test guidelines 404 or 435. A substance or mixture which is determined not to be corrosive in accordance with OECD test guideline 430 or 431 may be considered not to be corrosive to skin for the purposes of classification without further testing.”

37.2 In the first sentence delete “offered for transport”, insert “Chapter 2.8” after “as set out in” and “and Chapter 2.16, paragraph 2.16.2 of the GHS” after “Model Regulations”.

Delete the last sentence (“The classification...is offered for transport”).

37.3 Delete “for transport”.

Section 38

Amend the end of the title to read: “... RELATING TO SUBSTANCES AND ARTICLES OF TRANSPORT CLASS 9”.

38.1, 38.2.1.1 and 38.2.3.1 Replace “Class 9” with “transport Class 9”.

38.2.3.2 Replace “Class 9” with “transport Class 9” and “fertilisers” to fertilizers”.

38.2.3.3 At the end of the paragraph delete: “and provided that they do not contain an excess of nitrate greater than 10% by mass (calculated as potassium nitrate)”.

Section 51

51.2.2 Amend the introductory sentence to read as follows: “Any explosive while in a desensitized state shall be considered in this class unless, in that state:”

Amend sub-paragraph (a) to read as follows: “It is intended to produce a practical explosive or pyrotechnic effect;”

In sub-paragraph (b), replace “They have a mass explosion hazard” with “It has a mass explosion hazard” and “their corrected burning rate” with “the corrected burning rate”.

In sub-paragraph (c), replace “Their” with “The”.

Appendix 4

In the column “Address”:

- For France, replace “INERIS/LSE” with “INERIS/CERT”
- For Germany, delete “Abteilung II” and insert “Abteilung 2” under “Bundesanstalt ...”
- For the Netherlands, delete “Prins Maurits Laboratory”
- For Japan, replace the address with the following:
 - “Physical & Chemical Analysis Center
 - Nippon Kaiji Kentei Kyokai (NKKK)
 - 1-14-2 Sachiura, Kanazawa-ku
 - Yokohama 236-0003, Japan”
- For Spain, replace the address with the following:
 - “Laboratorio Oficial J.M. Madariaga (LOM)
 - Erik Kandel, 1 (Tecnogetafe)
 - E-28906 Getafe (Madrid)
 - Spain”
- For Sweden, replace the address with the following:
 - “Swedish Civil Contingencies Agency
 - Section for the Safe Handling of Hazardous Substances
 - S-651 81 Karlstad
 - Sweden”
- For the United States of America, replace the address with the following:
 - “Associate Administrator for Hazardous Materials Safety
 - Pipeline and Hazardous Materials Safety Administration
 - US Department of Transportation
 - 1200 New Jersey Avenue, SE
 - Washington, D.C. 20590
 - USA”

Appendix 5

Section 2 At the end of the 7th sentence (“Usually, the bursting pressure...”) delete “transport”.

At the end of the 8th sentence (“The 10 l vessel...”) delete delete “as to be used in transport”.

Appendix 6

- 2.1 In the first sentence, replace “a new substance” with “new substances” and offered for transport” with “offered for classification”.
- 2.2 At the end of the first sentence insert: “taking into account their physical state, e.g. for solid nanomaterials”.
In the second sentence delete “during transport”.

Add a new sentence at the end to read as follows: “Some potentially corrosive materials may not be corrosive when solid but may liquefy during normal operations of transport, storage or use. Judgement needs to be applied in such cases to determine the need or otherwise for testing and classification.”.

- 3.1 Delete “of Division 4.1” and “of Division 5.2”.
- 3.2 Replace “Class 1 Acceptance Procedure” with “acceptance procedure”.
- 3.3 At the introductory sentence, delete “Class 1” .
- In sub-paragraph (d):
- Delete “of Division 5.1” in the introductory sentence
 - In the first indent, insert “/category I” after “packing group I” and “/2” after “II”
 - In the second indent, insert “/category III” after “packing group III”
- 3.4 Delete “class 1” and replace “should be applied” with “has to be performed”.
- 4 In the title, delete “(Class 3)”.
- 5 In the title, delete “(Class 4)”.
- 5.1 In the title, delete “(Division 4.1)”.
- 5.2 In the title, delete “(Division 4.2)”.
- 5.3 Amend the title to read as follows: “Substances which, in contact with water, may react to emit flammable gases”.
- 6 In the title, delete “(Class 5)”.
- 6.1 In the title, delete “(Division 5.1)”.
- 6.1.1 In the first sentence, delete “of Division 5.1”.
- 6.2 In the title, delete “(Division 5.2)”.

Part II

Consequential amendments to the nineteenth revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations

Chapter 2.1

2.1.1.1 (c) Amend the end of the sentence to read: "... a practical explosive or ..."
