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

Report of the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals on its tenth session

held in Geneva on 11 December 2020

Addendum

Annex III

Amendments to the eighth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (ST/SG/AC.10/30/Rev.8)
Chapter 1.2

Insert the following paragraph before “For the purposes of the GHS:”:

“This Chapter provides definitions and abbreviations of general applicability that are used in the GHS. Additional definitions of the individual hazard classes are presented in the relevant chapters.”

Delete the following definitions and related notes (when applicable):


Consequential amendments:

• Chapter 1.5, paragraph 1.5.3.1.3 and related footnote 1: delete “(CA)”;
• Annex 4, paragraph A4.1.1: delete “(CA)”
• Annex 4, paragraph A4.2.1: Delete “(CA)” in the second sentence and replace “CA” by “competent authority” in the third sentence.
• Chapter 1.4 (paragraphs 1.4.8.1, 1.4.8.3 (a), (b), (c) and (f); 1.4.10.5.2 (d) (iv)); Chapter 1.5 (Table 1.5.2 note under item 3); and Annex 4 (note under A4.3.3): Delete “(CBI)” and replace “CBI” with “Confidential business information”, as applicable.

Amend the definitions of “MARPOL” and “Recommendations on the Transport of Dangerous Goods, Model Re” to read as follows:

“MARPOL means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended.”

“UN Model Regulations means the Model Regulations annexed to the latest revised edition of the Recommendations on the Transport of Dangerous Goods published by the United Nations”.

Consequential amendment: In the GHS, replace all references to “UN Recommendations on the Transport of Dangerous Goods, Model Regulations”, “Recommendations on the Transport of Dangerous Goods, Model Regulations” and “UN Recommendations for the Transport of Dangerous Goods” with “UN Model Regulations”.

Insert a definition for “VDI” to read as follows:

“VDI means the “Association of German Engineers” (“Verein Deutscher Ingenieure”).”

Consequential amendment: Delete note and footnote “*” in Annex 4 (table A4.3.9.3) and in Annex 11 (paragraph A11.2.8.1).

Move to Chapter 1.2 the following definitions currently in footnotes 5, 8, 9, 11 to 15 and 17 and 18 in Annex 4, and place them in the alphabetical order:

“ADN means the European Agreement concerning the International Transport of Dangerous Goods by Inland Waterways, as amended.

EGC Code means the Code for Existing Ships Carrying Liquefied Gases in Bulk.


IGC Code means the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, including applicable amendments to which the vessel has been certified.

IMDG Code means the International Maritime Dangerous Goods code, as amended.

IMSB Code means the International Maritime Solid Bulk Cargoes Code, as amended.


Rotterdam Convention means the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.”.

SOLAS means the International Convention for the Safety of Life at Sea, 1974, as amended.


Consequential amendment: Delete footnotes 4 to 18 in Annex 4.

Chapter 1.4

1.4.4.3 Replace (twice) “label components” with “label elements”.

1.4.10.5.5.1 In the last sentence of the third paragraph, replace “labelled with the main components” with “labelled with the product identifier”.

Chapter 1.5

1.5.3.2.1 In item 9, delete “and safety characteristics”.

Chapter 2.1

“CHAPTER 2.1

EXPLOSIVES

2.1.1 Definitions and general considerations

2.1.1.1 Definitions

An explosive substance or mixture is a solid or liquid substance or mixture which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances and mixtures are included even when they do not evolve gases.

A pyrotechnic substance or mixture is a substance or mixture designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reactions.

An explosive article is an article containing one or more explosive substances or mixtures.
Division means the classification of an explosive substance, mixture or article according to Part I of the Manual of Tests and Criteria and relates to it being in a certain configuration.

Primary packaging means the minimum level of packaging of a configuration assigned a division, in which the explosive substance, mixture or article is intended to be retained until use.

NOTE: Divisions are generally assigned for the purpose of transport and may be subject to further packaging specifications according to the UN Model Regulations to be valid.

2.1.1.2 Scope

2.1.1.2.1 Except as provided in 2.1.1.2.2, the class of explosives comprises

(a) Explosive substances and mixtures;

(b) Explosive articles, except devices containing explosive substances or mixtures in such quantity or of such a character that their inadvertent or accidental ignition or initiation shall not cause any effect external to the device either by projection, fire, smoke, heat or loud noise; and

(c) Substances, mixtures and articles not mentioned under (a) and (b) above which are manufactured with the view to producing a practical explosive or pyrotechnic effect.

2.1.1.2.2 The following substances and mixtures are excluded from the class of explosives:

(a) Ammonium nitrate-based emulsions, suspensions or gels which meet the criteria of test series 8 of the Manual of Tests and Criteria for classification as ANEs of Category 2 oxidizing liquids (Chapter 2.13) or Category 2 oxidizing solids (Chapter 2.14).

(b) Substances and mixtures which meet the criteria for classification as desensitized explosives according to the criteria of Chapter 2.17.

(c) Substances and mixtures which have not been manufactured with the view to producing, in themselves, an explosive or pyrotechnic effect and which:

(i) are self-reactive substances and mixtures according to the criteria of Chapter 2.8; or

(ii) are organic peroxides according to the criteria of Chapter 2.15; or

(iii) are deemed not to have explosive properties on basis of the screening procedures in Appendix 6 of the Manual of Tests and Criteria; or

(iv) are too insensitive for inclusion in the hazard class according to test series 2 of the Manual of Tests and Criteria; or

(v) are excluded from assignment within Class 1 of the UN Model Regulations based on results in test series 6 of the Manual of Tests and Criteria.

NOTE: Performing test series 2 requires a substantial amount of material, which may not be available in the initial stages of research and development. Substances and mixtures in the research and development phase for which not enough material exists to perform test series 2 of the Manual of Tests and Criteria may, for the purpose of further scientific
characterisation, be regarded as self-reactive substances and mixtures Type C (see Chapter 2.8), provided that:

(a) The substance or mixture is not manufactured with the view to producing an explosive or pyrotechnic effect; and

(b) The decomposition energy of the substance or mixture is less than 2000 J/g; and

(c) The result in test 3 (a) and test 3 (b) of the Manual of Tests and Criteria is negative; and

(d) The result in test 2 (b) of the Manual of Tests and Criteria is “no explosion” at an orifice diameter of 6 mm; and

(e) The expansion of the lead block in Test F.3 of the Manual of Tests and Criteria is less than 100 ml per 10 g substance or mixture.

2.1.1.2.3 For explosive articles that are assigned a specific UN number in a class other than Class 1 according to the Dangerous Goods List of the UN Model Regulations, the following applies.

2.1.1.2.3.1 Explosive articles that are assigned a specific UN number in Class 2, 3, 4 or 5 are classified in the GHS hazard class and, where available, category corresponding to the transport classification, and excluded from the hazard class explosives, provided that:

(a) they are in the transport configuration; or

(b) the transport classification does not depend on a particular configuration; or

(c) they are in use, see 2.1.1.3.4.

2.1.1.2.3.2 Explosive articles that are assigned a specific UN number in Class 9 are classified as explosives in Sub-category 2C, provided that:

(a) they are in the transport configuration; or

(b) the transport classification does not depend on a particular configuration; or

(c) they are in use, see 2.1.1.3.4.

NOTE 1: Subject to approval from the competent authority, explosive articles that are assigned a specific UN number in division 6.1 within Class 6 or in Class 8 may be classified in the GHS hazard class and, where available, category corresponding to the transport classification, and excluded from the hazard class explosives, provided that conditions (a) to (c) of 2.1.1.2.3.1 are met.

NOTE 2: According to the UN Model Regulations, articles are normally not assigned packing groups and hence a category within the corresponding GHS hazard class cannot always be assigned on this basis. Expert judgement should be used to assign an appropriate category in these cases, taking into account the GHS classification of the substances or mixtures contained.

2.1.1.3 Other considerations

2.1.1.3.1 The relation to the classification according to the UN Model Regulations

The GHS classification of substances, mixtures and articles as explosives builds largely on the classification used for transport according to the UN Model Regulations. Information on their transport division and, when available, some of the underlying test results according to Part I of the Manual of Tests and Criteria, is therefore relevant for the GHS classification. Test data is not required when classification using expert judgement is possible based on available information from previous testing and characterization. Where appropriate, analogy to tested explosives may be used, taking into consideration whether
changes to the configuration may affect the hazard posed compared to the tested configuration. While the transport divisions are designed for the purpose of safe transport of explosives, the GHS classification draws from this classification to ensure appropriate hazard communication in other sectors, in particular supply and use. In doing this, any mitigating effects of the transport configuration on the explosive behaviour, such as a particular packaging, are evaluated as they may not be present in sectors outside of transport.

2.1.1.3.2 The configuration dependence of the division

Entry into the hazard class of explosives is based on the intrinsic explosive properties of substances and mixtures. The assignment to a division, however, is also dependent on the configuration using packaging, and the incorporation into articles of such substances and mixtures. The division is the relevant level of classification when the explosive is in the configuration to which the division was assigned, e.g. when transported or stored, and may form the basis for explosives licencing and safety measures such as distance requirements. The hazard categories, on the other hand, are the relevant level of classification for the safe handling.

2.1.1.3.3 The hierarchy of the categories

Category 2 only contains explosives which have been assigned to a division and corresponds to Class 1 of the UN Model Regulations. The sub-categories within Category 2 classify explosives on basis of the hazardous behaviour of the explosive in its primary packaging or, where applicable, of the explosive article alone. An explosive that has not been assigned a division is classified in Category 1 of the hazard class of explosives. This may be because it is considered too dangerous to be assigned a division, or because it is not (yet) in a suitable configuration to assign it to a division. Explosives in Category 1 are therefore not necessarily more hazardous than explosives in Category 2.

2.1.1.3.4 Change of classification over the life cycle

As the assignment to a division depends on the configuration, the classification of an explosive may change over its life cycle as a result of reconfiguration. An explosive that was assigned a division in a certain configuration, and hence classified in a sub-category within Category 2, may no longer retain that division when out of that configuration. If assigned to another division in the new configuration, it may need to be classified in another sub-category within Category 2, and if not assigned a division it should be classified in Category 1. However, the use of an explosive, meaning the preparation and intentional functioning, including removal from the primary packaging for functioning or installation or deployment in readiness for functioning, is not intended to require such re-classification.

2.1.1.3.5 Exclusions from the hazard class

Some substances, mixtures and articles that have explosive properties are excluded from the hazard class of explosives because they are not considered sensitive enough or because they do not present a significant explosion hazard in a particular configuration. The safety data sheet is an appropriate means to convey information on explosive properties for such substances and mixtures, and the explosion hazards of such articles (see Chapter 1.4).

2.1.2 Classification criteria

2.1.2.1 Explosive substances, mixtures and articles of this class are classified into one of two categories, and for Category 2 into one of three sub-categories according to the following table:
<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Explosive substances, mixtures and articles which (a) have not been assigned a division and which (i) are manufactured with the view of producing an explosive or pyrotechnic effect; or (ii) are substances or mixtures which show positive results when tested in test series 2 of the Manual of Tests and Criteria or (b) are out of the primary packaging of the configuration to which a division was assigned, unless they are explosive articles assigned a division: (i) without a primary packaging; or (ii) in a primary packaging that does not attenuate the explosive effect, taking into account also intervening packaging material, spacing or critical orientation.</td>
</tr>
<tr>
<td>2</td>
<td>2A</td>
<td>Explosive substances, mixtures and articles which have been assigned (a) Division 1.1, 1.2, 1.3, 1.5 or 1.6; or (b) Division 1.4 and are not meeting the criteria for sub-category 2B or 2C.</td>
</tr>
<tr>
<td></td>
<td>2B</td>
<td>Explosive substances, mixtures and articles which have been assigned Division 1.4 and a compatibility group other than S, and which: (a) do not detonate and disintegrate when functioned as intended; and (b) exhibit no high hazard event in test 6 (a) or 6 (b) of the Manual of Tests and Criteria; and (c) do not require attenuating features, other than that which may be provided by a primary packaging, to mitigate a high hazard event.</td>
</tr>
<tr>
<td></td>
<td>2C</td>
<td>Explosive substances, mixtures and articles which have been assigned Division 1.4 compatibility group S, and which: (a) do not detonate and disintegrate when functioned as intended; and (b) exhibit no high hazard event in test 6(a) or 6(b), or in the absence of these test results, similar results in test 6(d) of the Manual of Tests and Criteria; and (c) do not require attenuating features, other than that which may be provided by a primary packaging, to mitigate a high hazard event.</td>
</tr>
</tbody>
</table>

- Explosives in Category 2 that are removed from their primary packaging for use remain classified in Category 2, see 2.1.1.3.4.
- The manufacturer, supplier or competent authority may classify an explosive of Division 1.4 as sub-category 2A on basis of data or other considerations even if it meets the technical criteria for sub-category 2B or 2C.
- A high hazard event is exhibited when performing test 6 (a) or 6 (b), according to the Manual of Tests and Criteria, by: (i) a significant change in the witness plate shape, such as perforation, gouge, substantial dent or bowing; or (ii) instantaneous scattering of most of the confining material.

2.1.2.2 The divisions are as follows: (a) Division 1.1: Substances, mixtures and articles which have a mass explosion hazard (a mass explosion is one which affects almost the entire quantity present virtually instantaneously); (b) Division 1.2: Substances, mixtures and articles which have a projection hazard but not a mass explosion hazard;
(c) Division 1.3: Substances, mixtures and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard:
   (i) combustion of which give rise to considerable radiant heat; or
   (ii) which burn one after another, producing minor blast or projection effects or both;

(d) Division 1.4: Substances and articles which present no significant hazard: substances, mixtures and articles which present only a small hazard in the event of ignition or initiation. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package;

(e) Division 1.4 compatibility group S: Substances, mixtures and articles so packed or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder firefighting or other emergency response efforts in the immediate vicinity of the package.

(f) Division 1.5: Very insensitive substances or mixtures which have a mass explosion hazard: substances and mixtures which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions. The probability of transition from burning to detonation is greater when large quantities are present.

(g) Division 1.6: Extremely insensitive articles which do not have a mass explosion hazard: articles which predominantly contain extremely insensitive substances or mixtures and which demonstrate a negligible probability of accidental initiation or propagation. The hazard from articles of Division 1.6 is limited to the explosion of a single article.

NOTE 1: For some regulatory purposes, the divisions are further subdivided into compatibility groups which identify the kinds of explosives that are deemed to be compatible (see 2.1.2 of the UN Model Regulations, Chapter 2.1).

NOTE 2: While Division 1.4 compatibility group S is not a division of its own, this classification corresponds to a separate division based on additional criteria.

NOTE 3: For classification tests on explosive substances or mixtures, the tests should be performed on the substance or mixture as presented. If for example, for the purposes of supply or transport, the same substance or mixture is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, it must also be tested in the new form.

2.1.3 Hazard communication

General and specific considerations concerning labelling requirements are provided in Hazard communication: Labelling (Chapter 1.4). Annex 1 contains summary tables about classification and labelling. Annex 3 contains examples of precautionary statements and pictograms which can be used where allowed by the competent authority.
### Table 2.1.2: Label elements for explosives

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>2A</th>
<th>2B</th>
<th>2C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-category</td>
<td>Not applicable</td>
<td>2A</td>
<td>2B</td>
<td>2C</td>
<td></td>
</tr>
<tr>
<td>Symbol</td>
<td>Exploding bomb</td>
<td>Exploding bomb</td>
<td>Exploding bomb</td>
<td>Exclamation mark</td>
<td></td>
</tr>
<tr>
<td>Signal word</td>
<td>Danger</td>
<td>Danger</td>
<td>Warning</td>
<td>Warning</td>
<td></td>
</tr>
<tr>
<td>Hazard statement</td>
<td>Explosive</td>
<td>Explosive</td>
<td>Fire or projection hazard</td>
<td>Fire or projection hazard</td>
<td></td>
</tr>
<tr>
<td>Additional hazard statement</td>
<td>Very sensitive<strong>b</strong> or May be sensitive<strong>c</strong></td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

**a** For divisions 1.4, 1.5 and 1.6 no symbol appears on the label for transport, according to the UN Model Regulations.

**b** To be assigned additionally to explosives that are sensitive to initiation as determined by test series 3 or 4 of the Manual of Tests and Criteria. May also be applied to explosives sensitive to other stimuli, e.g. electrostatic discharge.

**c** To be assigned additionally to explosives for which sufficient information on their sensitivity to initiation is not available.

**NOTE:** Substances and mixtures excluded by 2.1.1.2.2 (c) (v) still have explosive properties. The user should be informed of these intrinsic explosive properties because they have to be considered for handling – especially if the substance or mixture is removed from its packaging or is repackaged – and for storage. For this reason, the explosive properties of the substance or mixture should be communicated in sub-section 2.3 (Other hazards which do not result in classification) and Section 9 (Physical and chemical properties) or 10 (Stability and reactivity) of the Safety Data Sheet in accordance with Table 1.5.2, and other sections of the Safety Data Sheet, as appropriate.

#### 2.1.4 Decision logic and guidance

The decision logic and guidance, which follow, are not part of the harmonized classification system, but have been provided here as additional guidance. It is strongly recommended that the person responsible for classification studies the criteria before and during use of the decision logic.
2.1.4.1 Decision logics

Decision logic 2.1 (a) for categories of explosives

Explosive substance, mixture or article

Has it been assigned a division according to Part I of the Manual of Tests and Criteria?

Yes → Is it in the primary packaging to which a division was assigned?

No → Is it an explosive article excluded by definition?

(See 2.1.1.2.1 (b))

No → Is it an explosive article where the division has been assigned (i) in a primary packaging that does not attenuate the explosive effect or (ii) without a primary packaging?

No → Is it manufactured with the view of producing an explosive or pyrotechnic effect?

No → Is it a substance or mixture that shows positive results in test series 2?

Yes → Is it excluded based on results in test series 6?

No → Not in the hazard class explosives

Explosive in Category 2

Go to decision logic 2.1 (b)

Category 1

Danger

---

1 ANEs, desensitized explosives, organic peroxides and self-reactive substances and mixtures are classified in other hazard classes, see 2.1.1.2.2.

2 Unless it is for use, see 2.1.1.3.4.

3 Screening procedures may be used to avoid testing, see 2.1.1.2.2.
Decision logic 2.1 (b) for sub-categories of explosives

Explosive in Category 2

Is it assigned Division 1.4?

Yes

Does it detonate and disintegrate when functioned as intended?

Yes

Sub-Category 2A

Danger

No

Does it exhibit a high hazard event in test 6 (a) or 6 (b)?

(See 2.1.2.1, note c to table 2.1.1)

Yes

Sub-Category 2B

Warning

No

Is a high hazard event mitigated by attenuating features, other than that which may be provided by a primary packaging?

Yes

Sub-Category 2C

Warning

No

Is it assigned compatibility group S?

Yes

No

---

4 In the absence of results from test 6 (a) or 6 (b), results from test 6 (d) may be used to assess whether there was a high hazard event, see 2.1.2.1. If the configuration includes attenuating features that are likely to mitigate a high hazard event, such as spacing or a specific orientation of explosive articles, Sub-category 2A may be assigned without the need to assess test data.
2.1.4.2 Description of explosion hazard levels

<table>
<thead>
<tr>
<th>Sub-category</th>
<th>Explosion hazard level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>Sub-category 2A represents a high explosion hazard. An explosive in this sub-category has the potential to cause complete destruction of objects and lethal or very severe injuries to persons.</td>
</tr>
<tr>
<td>2B</td>
<td>Sub-category 2B represents a medium explosion hazard. An explosive in this sub-category has the potential to cause serious damage to objects and serious injuries to persons. Injuries may result in permanent impairment.</td>
</tr>
<tr>
<td>2C</td>
<td>Sub-category 2C represents a low explosion hazard. An explosive in this sub-category can cause minor damage to objects and moderate injuries to persons. Injuries would not normally result in permanent impairment.</td>
</tr>
</tbody>
</table>

2.1.4.3 Principles of explosives classification

2.1.4.3.1 Assigning explosives to divisions by testing

Explosives are assigned divisions based on testing of specific configurations, which quantifies levels of blast, projections and fire. Formation of a configuration provides a level of protection from outside stimuli and fixes the sensitivity and hazard magnitude, which enables the assignment to a division. The divisions therefore describe the explosive behaviour in the particular configuration. Such descriptions reflect attenuating properties of the packaging and article, which may include spacing, or specific orientations of explosive articles to mitigate an explosive effect. The configuration is further controlled by design and packaging requirements specified in the UN Model Regulations.

Although divisions are not valid outside of the configurations to which they were assigned, they may still be used as a basis for regulatory measures in storage and handling when these configurations are modified. This normally presumes that additional safety measures are taken to account for the modified configurations, e.g. aggregate quantity limits and protective building designs.

2.1.4.3.2 Assigning explosives to divisions based on analogy

While classification in a division or a sub-category is based on testing in accordance with Part I of the Manual of Tests and Criteria, similar explosives configurations may be classified without testing, where appropriate, based on analogy to tested explosives. The use of analogy should take into consideration whether changes to the configuration may affect the hazard posed compared to the tested configuration, and is narrowly limited according to the quantity, packaging and design of the explosive.

2.1.4.3.3 Assigning explosives to sub-categories

Assignment to sub-categories within Category 2 builds on the information provided by the division to better reflect the hazard of the explosive in its primary packaging, which is intended to be retained until use. The primary packaging is all or part of the original tested configuration. It is normally the immediate container or the innermost packaging layer and may include attenuating properties which mitigate hazardous effects. However, only flexible inner packaging such as a thin-wall plastic bag or other unsubstantial material which provides negligible attenuation of explosive effects should not be considered the primary packaging. As explosives are unpackaged from their primary packaging they may present greater sensitivity or blast, projection or fire hazards. Retaining the primary packaging until use and limiting the amount of unpacked explosives are therefore generally important safety measures when handling explosives. When an explosive is installed or deployed and is later removed from use without initiation, it should be replaced in its primary packaging or an identical primary packaging.

Multiple explosive articles may sometimes be supplied where they are in direct contact without any intervening packaging material or spacing, or critical orientation.
Provided all applicable classification evaluation occurred in this configuration, their primary packaging can be discarded without affecting the classification.

2.1.4.3.3 Occasionally, larger explosive articles are supplied without any packaging, e.g. in a handling device such as a cradle. In these cases, there may be no primary packaging, i.e. the classification is of the article as such. Handling devices that do not affect the classification can be discarded.

2.1.4.3.4 Classification of explosives in situations where they cannot be assigned a division

2.1.4.3.4.1 Explosives in manufacturing processing and otherwise unfinished stages cannot be assigned a division until configured for transport, and hence are assigned to Category 1. Similarly, explosives assigned to Category 2 when taken out of their primary packaging for purposes other than use, are re-assigned to Category 1 (unless their primary packaging can be discarded, see 2.1.4.3.3).

2.1.4.3.4.2 The sensitivity and hazard severity of unpackaged explosives is dependent on non-intrinsic parameters related to the methods used, including quantity, depth, confinement, initiation stimulus, composition, physical state such as particle size, etc. The hazards posed by explosives in Category 1 thus vary extensively and may also vary dynamically as they flow through a process. For these reasons, the hazard communication for Category 1 cannot provide any details regarding the explosive behaviour. Process hazards analysis and risk management principles should be applied in these cases to identify and manage the risk of processes in accordance with best practices and applicable regulations.

2.1.4.3.5 Safety related to explosives failing test series 3 or 4

Category 1 also includes explosives that fail test series 3 or test series 4 as configured, having an unacceptable level of sensitivity to stimuli encountered during transport. The thresholds of these tests may not be representative of the energy levels encountered during explosives processing and manufacturing. Furthermore, these tests do not include all types of stimuli that may be encountered, such as electrostatic discharge. Additional investigations of the properties of the explosive at hand may thus be needed for safe processing and handling.”.
Chapter 2.2

2.2.4.1 Replace decision logic 2.2 with the following (the text of the footnote remains unchanged):

“Decision logic 2.2

The substance/mixture is a gas

Does it have a flammable range with air at 20°C and a standard pressure of 101.3 kPa?

No

Not classified as a flammable gas

Yes

Does it ignite spontaneously in air at 54°C or below?¹

Yes

Category 1A Pyrophoric gas and chemically unstable gas A

Danger

No

Is it chemically unstable at 20°C and a standard pressure of 101.3kPa?

Yes

Category 1A Pyrophoric gas and chemically unstable gas B

Danger

No

Is it chemically unstable at a temperature greater than 20°C and/or a pressure greater than 101.3kPa?

Yes

Category 1A Pyrophoric gas

Danger

No

Is it chemically unstable at 20°C and a standard pressure of 101.3kPa?

Yes

Category 1A Chemically unstable gas A

Danger

No
Chapter 2.3

2.3.1.2 In table 2.3.1, under “Criteria”:
Replace “(1)”, “(2)” and “(3)” with “(a)”, “(b)” and “(c)”; and
Replace “(a)”, “(b)”, “(c)” with “(i)”, “(ii)” and “(iii)”.

2.3.1.4 Replace decision logics 2.3.1 (a), (b) y (c) with the following:

*Decision logic 2.3.1 (a) for aerosols

Aerosol

Does it contain ≤ 1% flammable components (by mass) and does it have a heat of combustion < 20 kJ/g?

Yes

Category 3
No symbol
Warning

No

Does it contain ≥ 85% flammable components (by mass) and does it have a heat of combustion ≥ 30 kJ/g?

Yes

Category 1
Danger

No

For spray aerosols, go to decision logic 2.3.1 (b)
For foam aerosols, go to decision logic 2.3.1 (c)
**Decision logic 2.3.1 (b) for spray aerosols**

**Spray aerosol**

In the ignition distance test, does ignition occur at a distance $\geq 75$ cm?

- Yes
  - Category 1
    - Danger

- No
  - Does it have a heat of combustion $< 20$ kJ/g?
    - Yes
      - Category 2
        - Warning
    - No
      - In the ignition distance test, does ignition occur at a distance $\geq 15$ cm?
        - Yes
          - Category 2
            - Warning
        - No
          - In the enclosed space ignition test, is:
            - (a) the time equivalent $\leq 300$ s/m$^3$; or
            - (b) the deflagration density $\leq 300$ g/m$^3$?
              - Yes
                - Category 2
                  - Warning
              - No
                - Category 3
                  - No symbol
                    - Warning

**Decision logic 2.3.1 (c) for foam aerosols**

**Foam aerosol**

In the foam test, is:
(a) the flame height $\geq 20$ cm and the flame duration $\geq 2$ s; or
(b) the flame height $\geq 4$ cm and the flame duration $\geq 7$ s?

- Yes
  - Category 1
    - Danger

- No
  - In the foam test, is the flame height $\geq 4$ cm and the flame duration $\geq 2$ s?
    - Yes
      - Category 2
        - Warning
    - No
      - Category 3
        - No symbol
          - Warning


2.3.2.4.1 Replace decision logic 2.3.2 with the following *(the text of the footnote remains unchanged)*:

"**Decision logic 2.3.2 for chemicals under pressure**

Mixture containing liquids or solids (i.e. pastes or powders) and gases, in pressure receptacles other than an aerosol dispenser, which is not classified as a gas under pressure

- Does the mixture contain liquids and/or solids and is the pressure in the receptacle higher than 200 kPa at 20 °C?
  - No → Not classified as a chemical under pressure
  - Yes →
    - Does the mixture contain ≤ 1% flammable components (by mass) and does it have a heat of combustion < 20 kJ/g?
      - Yes → Category 3 Warning
      - No → Does the mixture contain ≥ 85% flammable components (by mass) and does it have a heat of combustion ≥ 20 kJ/g?
        - Yes → Category 1 Danger
        - No → Category 2 Warning

".

Chapter 2.4

2.4.4.1 Replace decision logic 2.4 with the following:

"**Decision logic 2.4 for oxidizing gases**

Gaseous substance or mixture of gases

- Does the gas contribute to the combustion of other material more than air does?
  - Yes → Category 1 Danger
  - No → Not classified

"."
Chapter 2.5

2.5.4.1 Replace decision logic 2.5 with the following:

“Decision logic 2.5 for gases under pressure

The substance/mixture is a gas

Is the gas contained in a receptacle at a pressure of 200 kPa (gauge) or more at 20°C, or is the gas liquefied or liquefied and refrigerated?

No

Not classified as a gas under pressure

Yes

Dissolved gas

Warning

Is the gas dissolved in a liquid phase solvent?

Yes

Refrigerated liquefied gas

Warning

No

Is the gas partially liquid because of its low temperature?

Yes

(Low pressure) Liquefied gas

Warning

No

Is the gas partially liquid at temperatures above -50°C?

Yes

(High pressure) Liquefied gas

Warning

No

Is its critical temperature above +65°C?

Yes

Compressed gas

Warning

No

Is its critical temperature between -50°C and +65°C?

Yes

Is the gas entirely in gaseous state at -50°C?

Yes

No
Chapter 2.6

2.6.4.1 Replace decision logic 2.6 with the following *(the text of the footnotes remains unchanged)*:

*“Decision logic 2.6 for flammable liquids”*

```
The substance/mixture is a liquid

Does it have a flash point ≤ 93°C?
  Yes
  Does it have a flash point > 60°C?
    Yes¹²
    Category 4
    Warning
  No
  Does it have a flash point ≥ 23°C?
    Yes¹²
    Category 3
    Warning
  No
  Does it have an initial boiling point > 35°C?
    Yes
    Category 2
    Danger
  No
  Not classified
```

Chapter 2.7

2.7.4 Replace decision logic 2.7 with the following:

*“Decision logic 2.7 for flammable solids”*

```
The substance/mixture is a solid

Screening test
  Negative
  Not classified
  Positive

Burning rate test:
(a) For substances or mixtures other than metal powders:
  Burning time < 45 s or burning rate > 2.2 mm/s?
(b) For metal powders:
  Burning time ≤ 10 min?
  Yes
  No

(a) For substances or mixtures other than metal powders:
  Does the wetted zone stop propagation of the flame?
(b) For metal powders:
  Burning time > 5 min?
  Yes
  No
```

Chapter 2.9

2.9.4.1 Replace decision logic 2.9 with the following:

“Decision logic 2.9 for pyrophoric liquids

The substance/mixture is a liquid

Does it ignite within 5 min when poured into a porcelain cup filled with diatomaceous earth or silica gel and exposed to air?

Yes

Category 1
Danger

No

Does it ignite or char a filter paper on contact with air within 5 min?

Yes

Category 1
Danger

No

Not classified

Chapter 2.10

2.10.4.1 Replace decision logic 2.10 with the following:

“Decision logic 2.10 for pyrophoric solids

The substance/mixture is a solid

Does it ignite within 5 min after exposure to air?

Yes

Category 1
Danger

No

Not classified

.”
Chapter 2.11

2.11.4.1 Replace decision logic 2.11 with the following:

"Decision logic 2.11 for self-heating substances and mixtures

1. Does it undergo dangerous self-heating when tested in a 100 mm sample cube at 140 °C?
   - No → Not classified
   - Yes → Category 1

2. Does it undergo dangerous self-heating when tested in a 25 mm sample cube at 140 °C?
   - Yes → Category 1 Danger
   - No → Category 2 Warning

3. Is it packaged in more than 3 m³?
   - Yes → Category 2 Warning
   - No → Not classified

4. Does it undergo dangerous self-heating when tested in a 100 mm sample cube at 120 °C?
   - No → Not classified
   - Yes → Category 2 Warning

5. Is it packaged in more than 450 litres volume?
   - Yes → Category 2 Warning
   - No → Not classified

6. Does it undergo dangerous self-heating when tested in a 100 mm sample cube at 100 °C?
   - Yes → Category 2 Warning
   - No → Not classified"
Chapter 2.12

2.12.4.1 Replace decision logic 2.12 with the following:

“Decision logic 2.12 for substances and mixtures which, in contact with water, emit flammable gases

```
<table>
<thead>
<tr>
<th>Substance/mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

In contact with water, does it react slowly at ambient temperatures such that the maximum rate of evolution of flammable gas is > 1 litre per kg of substance per hour?

Yes → Category 1
No → Not classified

In contact with water, does it react vigorously with water at ambient temperatures and demonstrate generally a tendency for the gas produced to ignite spontaneously, or does it react readily with water at ambient temperatures such that the rate of evolution of flammable gas is ≥ 10 litres per kg of substance over any one minute?

Yes → Category 2
No → Category 3

In contact with water, does it react readily with water at ambient temperatures such that the maximum rate of evolution of flammable gas is ≥ 20 litres per kg of substance per hour?

Yes → Category 3
No → Warning
```

"
Chapter 2.13

2.13.4.1 Replace decision logic 2.13 with the following:

“Decision logic 2.13 for oxidizing liquids

The substance/mixture is a liquid

Does it, in the 1:1 mixture, by mass, of substance (or mixture) and cellulose tested, exhibits a pressure rise ≥ 2070 kPa (gauge)?

No → Not classified

Yes →

Does it, in the 1:1 mixture, by mass, of substance (or mixture) and cellulose tested, exhibit a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 65% aqueous nitric acid and cellulose?

No → Not classified

Yes → Category 3 Warning

Does it, in the 1:1 mixture, by mass, of substance (or mixture) and cellulose tested, exhibit a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 40% aqueous sodium chlorate and cellulose?

No → Category 2 Danger

Yes → Category 1 Danger

Does it, in the 1:1 mixture, by mass, of substance (or mixture) and cellulose tested, spontaneously ignite or exhibit a mean pressure rise time less than that of a 1:1 mixture, by mass, of 50% perchloric acid and cellulose?

No →

Yes →
Chapter 2.14

2.14.4.1 Replace decision logic 2.14 with the following:

"Decision logic 2.14 for oxidizing solids"

The substance/mixture is a solid

Does it, in the 4:1 or 1:1 sample-to-cellulose ratio, by mass, tested ignite or burn?

No → Not classified

Yes

Does it, in the 4:1 or 1:1 sample-to-cellulose ratio, by mass, tested exhibit a mean burning time less than or equal to the mean burning time of a 3:7 mixture, by mass, of potassium bromate and cellulose or a mean burning rate greater than or equal to the mean burning rate of a 1:2 mixture, by mass, of calcium peroxide and cellulose?

No → Not classified

Yes

Does it, in the 4:1 or 1:1 sample-to-cellulose ratio, by mass, tested exhibit a mean burning time less than or equal to the mean burning time of a 2:3 mixture, by mass, of potassium bromate and cellulose or a mean burning rate greater than or equal to the mean burning rate of a 1:1 mixture, by mass, of calcium peroxide and cellulose?

No

Category 3

Warning

Yes

Category 2

Danger

Does it, in the 4:1 or 1:1 sample-to-cellulose ratio, by mass, tested exhibit a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose or a mean burning rate greater than the mean burning rate of a 3:1 mixture, by mass, of calcium peroxide and cellulose?

No

Category 1

Danger

Yes

Chapter 2.16

2.16.14.1 Replace decision logic 2.16 with the following:

"Decision logic 2.16 for substances and mixtures corrosive to metals"

Substance/mixture

Does it corrode on either steel or aluminium surfaces at a rate exceeding 6.25 mm/year at a test temperature of 55 °C when tested on both materials?

No → Not classified

Yes

Category 1

Warning
Chapter 2.17

2.17.14.1 Replace decision logic 2.17.1 with the following:

“Decision logic 2.17 for desensitized explosives

The substance/mixture is a solid or liquid

Does it contain an explosive substance or mixture which is
phlegmatized to suppress the explosive properties?

Yes

Is the exothermic decomposition energy less than 300 J/g?

No

Test 6 (a), 6 (b):
Is the result a mass explosion?

Yes

No

Burning rate test (Part V, sub-section 51.4):
Is the result a mass explosion?

Yes

No

Ac > 1200 kg/min?

Yes

No

Ac ≥ 300 kg/min but ≤ 1200 kg/min?

Yes

No

Ac ≥ 140 kg/min but < 300 kg/min?

Yes

No

Ac ≥ 60 kg/min but < 140 kg/min?

Yes

No

Ac < 60 kg/min?

Yes

Not classified as a
desensitized explosive

May fall within the scope of
other physical hazard classes

Explosive
Division 1.1

Danger

Explosive
Division 1.1

Danger

Hazard class “Explosives”
(see criteria in Chapter 2.1)

Category 1

Danger

Category 2

Danger

Category 3

Warning

Category 4

Warning
Chapter 3.1

3.1.5.1 Replace decision logic 3.1.1 with the following:

""
According to the criteria in 3.1.2 to 3.1.3.4, does it have an:
(a) Oral LD_{50} >2000 but ≤ 5000 mg/kg bodyweight; or
(b) Dermal LD_{50} >2000 but ≤ 5000 mg/kg bodyweight; or
(c) Inhalation (gas, vapour and/or dust/mist) LC_{50} in the equivalent range of
the oral and dermal LD_{50} (i.e. 2000-5000 mg/kg bodyweight)?

Yes
No

(a) Is there reliable information available indicating significant toxicity effects
in humans?; or
(b) Was any mortality observed when tested up to Category 4 values by the
oral, inhalation or dermal routes?; or
(c) Is there expert judgement that confirms significant clinical signs of
toxicity, when tested up to Category 4 values, except for diarrhoea,
piloerection or an ungroomed appearance?; or
(d) Is there expert judgement that confirms reliable information indicating the
potential for significant acute effects from other animals?

Yes
No

Classify in Category 5
No symbol
(Warning)
if assignment to a more hazardous class is not warranted
Not classified

3.1.5.2 Replace decision logic 3.1.2 with the following (the text of the footnote
remains unchanged):

Can bridging principles be applied?

Yes

Classify in the appropriate category

No

Is acute toxicity data available for all
ingredients of the mixture?

Yes

Apply the acute toxicity estimate
calculation to determine the ATE of
the mixture

100 \frac{ATE_{mix}}{ATE_i} = \sum_{i} C_i

where:
- C_i = concentration of ingredient i
- n = ingredients, and i is running from 1 to n
- ATE_i = Acute toxicity estimate of ingredient i

No

100 \frac{(\sum C_{\text{minor if } t > 10\%})}{ATE_{mix}} = \sum_{i} C_i

No symbol

Warning
Chapter 3.2

3.2.2.2.5 In table 3.2.2, under “Criteria”, replace “(1)”, “(2)” and “(3)” with “(a)”, “(b)” and “(c)”.

3.2.5.1 Replace decision logic 3.2.1 with the following:

```
Substance: Are there data/information to evaluate skin corrosion/irritation?

Mixture: Does the mixture as a whole or its ingredients have data/information to evaluate skin corrosion/irritation?

Yes

Does the mixture as a whole have data/information to evaluate skin corrosion/irritation?

Yes

Is the substance or mixture corrosive (see 3.2.2 and 3.2.3.1), an irritant (see 3.2.2 and 3.2.3.1), or a mild irritant (see 3.2.2 and 3.2.3.1) in accordance with the tiered approach (see 3.2.2.7 and Figure 3.2.1)?

Yes, corrosive

Yes, irritant

Yes, mild irritant

Substance: Classification not possible

Mixture: Apply decision logic 3.2.2 for classification based on similar tested mixtures and/or ingredients

No

Classification not possible

Classification not possible

Classified

Inconclusive

Not classified

Category 1

Danger

Category 2

Warning

Category 3

No symbol

Warning

"
3.2.5.2 Replace decision logic 3.2.2 with the following *(the related footnotes remain unchanged)*:

*Classification of mixtures on the basis of information/data on similar tested mixtures and/or ingredients*

<table>
<thead>
<tr>
<th>Mixture: Are there data on similar tested mixtures to evaluate skin corrosion/irritation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

3.2.5.3.4 In Table 3.2.6:

In the heading of the third column, amend the list of methods to read: “…Methods 1, 2, 3, 4 and 5”.

In the row for category 1, on the third cell of the table, replace “3 and 4” with “3, 4 and 5” in the list of methods before “< 50 %”.

In the row for category 1A, on the fifth cell of the table, replace “Method 4” with “methods 4 and 5” in the list of methods before “< 15 %”.
Chapter 3.3

3.3.5.1 Replace decision logic 3.3.1 with the following (the text of the footnotes remains unchanged):

```

Substance: Are there data/information to evaluate serious eye damage/irritation?

Yes

Mixture: Does the mixture as a whole or its ingredients have data/information to evaluate serious eye damage/irritation?

Yes

Does the mixture as a whole have data/information to evaluate serious eye damage/irritation?

Yes

Does the substance or mixture have potential to cause serious eye damage (see 3.3.1, 3.3.2.1.1, 3.3.2.2 and 3.3.3.1) considering 2:
(a) Existing human eye data;
(b) Irreversible eye damage in one or more test animals;
(c) Existing human or animal data indicating skin corrosion;
(d) Other existing animal eye data including single or repeated exposure;
(e) Existing ex vivo/in vitro eye data;
(f) pH extremes of $\leq 2$ or $\geq 11.5$;
(g) Information available from validated Structure Activity Relationship (SAR)?

Yes

Is the substance or mixture an eye irritant (see 3.3.1, 3.3.2.1.2, 3.3.2.2 and 3.3.3.1) considering 2:
(a) Existing human data, single or repeated exposure;
(b) Eye irritation data from an animal study (see 3.3.2.1.2, Table 3.3.2 for criteria for Category 2/2A)
(c) Other existing animal eye data including single or repeated exposure,
(d) Existing ex vivo/in vitro data,
(e) Information available from validated Structure/Activity Relationship (SAR) methods?

Yes

Is the substance or mixture an irritant Category 2B (see 3.3.2.1.2, Table 3.3.2)?

Yes

No

Classification not possible

Classification not possible

See decision logic 3.2.2 for use with similar tested mixtures and ingredients

Category 1

Danger

Category 2/2A

Warning

Category 2B

No symbol

Warning

Not classified

```

"
3.3.5.2 Replace decision logic 3.3.2 with the following *(the text of the footnotes remains unchanged)*:

"Classification of mixtures on the basis of information/data on similar tested mixtures and ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Are there data on similar tested mixtures to evaluate serious eye damage/eye irritation?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Can bridging principles be applied (see 3.3.3.2)?</td>
</tr>
<tr>
<td></td>
<td>Yes &gt; Classify in the appropriate category</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Does the mixture contain ≥ 1%\textsuperscript{45} of an ingredient which causes serious eye damage (see 3.3.1.1, 3.3.2.1.1 and 3.3.2.2) when the additivity approach may not apply (see 3.3.3.3.4)?</td>
</tr>
<tr>
<td></td>
<td>Yes &gt; Category 1</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>
|         | Does the mixture contain one or more ingredients\textsuperscript{4} corrosive or seriously damaging to the eye when the additivity approach applies (see 3.3.3.2 and Table 3.3.3), and where the sum of concentrations of ingredients classified as\textsuperscript{5}:
|         | skin Category 1 + eye Category 1 ≥ 3%?                                               |
|         | Yes > Category 1                                                                     |
|         | No                                                                                   |
|         | Does the mixture contain ≥ 3%\textsuperscript{45} of an ingredient which is an eye irritant (see 3.3.1.1, 3.3.2.1.2 and 3.3.2.2) when the additivity approach may not apply (see 3.3.3.3.4)? |
|         | Yes > Category 2/2A\textsuperscript{6}                                               |
|         | No                                                                                   |
|         | Does the mixture contain one or more ingredients\textsuperscript{4} corrosive or seriously damaging to the eye/eye irritant when the additivity approach applies (see 3.3.3.3.2 and Table 3.3.3), where the sum of concentrations of ingredients classified as\textsuperscript{5}?:
|         | (a) eye Category 1 + skin Category 1 ≥ 1% but < 3%, or
|         | (b) eye Category 2 ≥ 10%, or
|         | (c) 10 × (skin Category 1 + eye Category 1) + eye Category 2 ≥ 10%?                   |
|         | Yes > Category 2/2A\textsuperscript{6}                                               |
|         | No > Not classified                                                                   |

"
Chapter 3.4

3.4.5.1 Replace decision logic 3.4.1 with the following (the text of the footnotes remains unchanged):

```

Substance: Does the substance have respiratory sensitization data?

No Classification not possible

Yes

Mixture: Does the mixture as a whole or its ingredients have respiratory sensitization data?

No Classification not possible

Yes

Does the mixture as a whole have respiratory sensitization data? (see 3.4.3.1)

No

Yes

(a) Is there evidence in humans that the substance/mixture can lead to specific respiratory hypersensitivity, and/or
(b) are there positive results from an appropriate animal test? (see criteria in 3.4.2.1)

No

Yes

Can bridging principles be applied? (see 3.4.3.2)

No

Yes

Classify in the appropriate category

Does the mixture contain one or more ingredients classified as a respiratory sensitizer at least:
(a) ≥ 0.1% w/w (solid/liquid);
(b) ≥ 1.0% w/w (solid/liquid);
or
(c) ≥ 0.1% v/v (gas)?
(d) ≥ 0.2% v/v (gas)?
(See 3.4.3.3 and Table 3.4.5 for explanation and guidance)

No

Yes

Category 1
Danger

Not classified

Classification not possible

Not classified

```

"
3.4.5.2 Replace decision logic 3.4.2 with the following (the text of the footnotes remains unchanged):

```

Substance: Does the substance have skin sensitization data?

No classification possible

Mixture: Does the mixture as a whole or its ingredients have skin sensitization data?

No

Classification not possible

Yes

Does the mixture as a whole have skin sensitization data? (see 3.4.3.1)

(a) Is there evidence in humans that the substance/mixture can lead to sensitization by skin contact in a substantial number of persons, or

(b) are there positive results from an appropriate animal test?

(see criteria in 3.4.2.2.1 and 3.4.2.2.4)

No

Can bridging principles be applied? (see 3.4.3.2)

Yes

Classify in the appropriate category

Category 1 Warning

No

Does the mixture contain one or more ingredients classified as a skin sensitizer at 3, 4:

(a) ≥ 0.1%?

(b) ≥ 1.0%?

(See 3.4.3.3 and Table 3.4.5 for explanation and guidance)

No

Not classified

Yes

Category 1 Warning

Not classified

```

Chapter 3.5

3.5.2.7 (a) At the end of the current list, add: “Transgenic Rodent Somatic and Germ Cell Gene Mutation Assays (OECD 488)”.

3.5.2.8 Insert the following references after the introductory sentence, before the current examples (“Liver…”):

“In vivo Mammalian Alkaline Comet Assay (OECD 489)
Transgenic Rodent Somatic and Germ Cell Gene Mutation Assays (OECD 488)”

3.5.2.9 Amend the end of the second example to read as follows: “(OECD 476 and 490)”.
3.5.5.1.1 Replace decision logic 3.5.1 with the following:

"Substance: Does the substance have data on mutagenicity? 

No → Classification not possible

Yes →

According to the criteria (see 3.5.2), is the substance:
(a) Known to induce heritable mutations in germ cells of humans, or
(b) Should it be regarded as if it induces heritable mutations in the germ cells of humans?

Application of the criteria needs expert judgment in a weight of evidence approach.

No →

According to the criteria (see 3.5.2), does the substance cause concern for humans owing to the possibility that it may induce heritable mutations in the germ cells of humans?

Application of the criteria needs expert judgment in a weight of evidence approach.

Yes →

Category 1
Danger

No →

Not classified"
3.5.5.1.2 Replace decision logic 3.5.2 with the following *(the text of the footnotes remains unchanged)*:

```
Mixture: Classification of mixtures will be based on the available test data for the individual ingredients of the mixture, using cut-off values/concentration limits for those ingredients. The classification may be modified on a case-by-case basis based on the available test data for the mixture itself or based on bridging principles. See modified classification on a case-by-case basis below. For further details see 3.5.3.

Classification based on individual ingredients of the mixture

Does the mixture contain one or more ingredients classified as a Category 1 mutagen at ≥ 0.1%?  
Yes  
Category 1  
Danger

No

Does the mixture contain one or more ingredients classified as a Category 2 mutagen at ≥ 0.1%?  
Yes  
Category 2  
Warning

No  
Not classified

Classification based on a case-by-case basis

Are test data available for the mixture itself?  
Yes  
Are the test results on the mixture conclusive taking into account dose and other factors such as duration, observations and analysis (e.g. statistical analysis, test sensitivity) of germ cell mutagenicity test systems?  
Yes  
Classify in the appropriate category  
Danger or Warning or No classification

No

Can bridging principles be applied?  
See 3.5.3.2

Yes

No

See above: Classification based on individual ingredients of the mixture

**
Chapter 3.6

3.6.5.1 Replace decision logic 3.6.1 with the following:

"Substance: Does the substance have carcinogenicity data?

Yes

According to the criteria (see 3.6.2), is the substance:
(a) Known to have carcinogenic potential for humans, or
(b) Presumed to have carcinogenic potential for humans?
Application of the criteria needs expert judgment in a strength and weight of evidence approach.

No

According to the criteria (see 3.6.2), is the substance a suspected human carcinogen?
Application of the criteria needs expert judgment in a strength and weight of evidence approach.

No

Classification not possible

Yes

Category 1

Danger

No

Category 2

Warning

Yes

Not classified

"
3.6.5.2 Replace decision logic 3.6.2 with the following (the text of the footnotes remains unchanged):

"Mixture: Classification of mixtures will be based on the available test data for the individual ingredients of the mixture, using cut-off values/concentration limits for those ingredients. The classification may be modified on a case-by-case basis based on the available test data for the mixture as a whole or based on bridging principles. See modified classification on a case-by-case basis below. For further details see 3.6.2.7, 3.6.3.1 and 3.6.3.2.

Classification based on the individual ingredients of the mixture

Does the mixture contain one or more ingredients classified as a Category 1 carcinogen at ≥ 0.1%?

Yes → Category 1 Danger

No

Does the mixture contain one or more ingredients classified as a Category 2 carcinogen at:

(a) ≥ 0.1%?
(b) ≥ 1.0%?

Yes → Category 2 Warning

No → Not classified

Modified classification on a case-by-case basis

Are test data available for the mixture itself?

Yes → Are the test results on the mixture conclusive taking into account dose and other factors such as duration, observations and analysis (e.g. statistical analysis, test sensitivity) of carcinogenicity test systems?

Yes → Classify in the appropriate category

No → Can bridging principles be applied? (see 3.6.3.2)

Yes

No → See above: Classification based on individual ingredients of the mixture

"
Chapter 3.7

3.7.5.1.1 Replace decision logic 3.7.1 with the following:

“

**Substance:** Does the substance have data on reproductive toxicity?

- Yes
  - According to the criteria (see 3.7.2), is the substance:
    - (a) **Known** human reproductive toxicant, or
    - (b) **Presumed** human reproductive toxicant?
      - Yes
        - Category 1
        - Danger
      - No
        - Category 2
        - Warning
  - No
    - Classification not possible

- No
  - According to the criteria (see 3.7.2), is the substance a **suspected** human reproductive toxicant?
    - Yes
      - Category 2
      - Warning
    - No
      - Classification not possible

“
3.7.5.1.2 Replace decision logic 3.7.2 with the following *(the text of the footnotes remains unchanged):*

""

**Mixture**: Classification of mixtures will be based on the available test data for the *individual ingredients* of the mixture, using cut-off values/concentration limits for those ingredients. The classification may be modified on a case-by-case basis based on the available test data for the mixture as a whole or based on bridging principles. See modified classification on a case-by-case basis below. For further details see 3.7.3.1, 3.7.3.2 and 3.7.3.3.

### Classification based on the individual ingredients of the mixture

- **Does the mixture contain one or more ingredients classified as a Category 1 reproductive toxicant at:**
  - (a) $\geq 0.1\%$?
  - (b) $\geq 0.3\%$?

  - **Yes**: Category 1 Danger
  - **No**: ![](image)

- **Does the mixture contain one or more ingredients classified as a Category 2 reproductive toxicant at:**
  - (a) $\geq 0.1\%$?
  - (b) $\geq 3.0\%$?

  - **Yes**: Category 2 Warning
  - **No**:！Not classified

### Modified classification on a case-by-case basis

- **Are test data available for the mixture itself?**
  - **Yes**: Are the test results on the mixture conclusive taking into account dose and other factors such as duration, observations and analysis (e.g. statistical analysis, test sensitivity) of reproduction test systems?
    - **Yes**: Classify in the appropriate category
      - Danger or Warning or No classification
    - **No**: Can bridging principles be applied? *(see 3.7.3.2.1 to 3.7.3.2.4)*
      - **Yes**: See above: Classification based on individual ingredients of the mixture
      - **No**: Not classified

3.7.5.2.1 Replace decision logic 3.7.3 with the following:

""
3.7.5.2.2 Replace decision logic 3.7.4 with the following (the text of the footnotes remains unchanged):

"Mixture: Classification of mixtures will be based on the available test data for the individual ingredients of the mixture, using cut-off values/concentration limits for those ingredients. The classification may be modified on a case-by-case basis based on the available test data for the mixture as a whole or based on bridging principles. See modified classification on a case-by-case basis below. For further details see 3.7.3.1, 3.7.3.2 and 3.7.3.3.

Classification based on the individual ingredients of the mixture

Does the mixture contain one or more ingredients classified for effects on or via lactation at:
(a) $\geq 0.1\%$?
(b) $\geq 0.3\%$?

Yes Additional category for effects on or via lactation
No Not classified

Modified classification on a case-by-case basis

Are test data available for the mixture itself?

Yes Are the test results on the mixture conclusive taking into account dose and other factors such as duration, observations and analysis (e.g. statistical analysis, test sensitivity) of reproduction test systems?

Yes Additional category for effects on or via lactation
No symbol
No signal word or No classification

No

Can bridging principles be applied? (see 3.7.3.2.1 to 3.7.3.2.4)

Yes See above: Classification based on individual ingredients of the mixture
No

"
Chapter 3.8

3.8.5.1 Replace decision logic 3.8.1 with the following (the text of the footnote remains unchanged):

```
"Substance: Does the substance have data and/or information to evaluate specific target organ toxicity following single exposure?

No Classification not possible

Mixture: Does the mixture as a whole or its ingredients have data/information to evaluate specific target organ toxicity following single exposure?

Yes

Yes Does the mixture as a whole have data/information to evaluate specific target organ toxicity following single exposure?

No See decision logic 3.8.2

YesFollowing single exposure,

(a) Can the substance or mixture produce significant toxicity in humans, or
(b) Can it be presumed to have the potential to produce significant toxicity in humans on the basis of evidence from studies in experimental animals?

See 3.8.2 for criteria and guidance values. Application of the criteria needs expert judgment in a weight of evidence approach.

Yes

Yes Classification 1

Danger

No

No Classification not possible

Following single exposure,

Can the substance or mixture, produce transient narcotic effects or respiratory tract irritation or both?

See 3.8.2 and 3.8.3 for criteria and guidance values. Application of the criteria needs expert judgment in a weight of evidence approach.

Yes

Yes Classification 3

Warning

No

Not classified
```

"
3.8.5.2 Replace decision logic 3.8.2 with the following (the text of the footnotes remains unchanged):

**Mixture:** Can bridging principles, as in 3.8.3.3, be applied?

- Yes → Classify in the appropriate category

- No →

  Does the mixture contain one or more ingredients classified as a Category 1 specific target organ toxicant at a concentration of:\n  (a) ≥ 1.0%?\n  (b) ≥ 10%?\n  See Table 3.8.2 for explanation of cut-off values/concentration limits.

  - Yes → Category 1 Danger
  - No →

    Does the mixture contain one or more ingredients classified as a Category 1 specific target organ toxicant at a concentration of: \n    ≥ 1.0 and < 10%? \n    See Table 3.8.2 for explanation of cut-off values/concentration limits.

    - Yes → Category 2 Warning
    - No →

      Does the mixture contain one or more ingredients classified as a Category 2 specific target organ toxicant at a concentration of:\n      (a) ≥ 1.0%?\n      (b) ≥ 10%?\n      See Table 3.8.2 for explanation of cut-off values/concentration limits.

      - Yes → Category 2 Warning
      - No →

        Does the mixture contain one or more ingredients classified as a Category 3 specific target organ toxicant at a concentration ≥ 20%?\n        See 3.8.3.4.3. Care should be exercised when classifying such mixtures.

        - Yes → Category 3 Warning
        - No → Not classified

- No →

  Does the mixture contain one or more ingredients classified as a Category 1 specific target organ toxicant at a concentration of: \n  ≥ 1.0% and < 10%? \n  See Table 3.8.2 for explanation of cut-off values/concentration limits.

  - Yes → Category 2 Warning
  - No →

    Does the mixture contain one or more ingredients classified as a Category 2 specific target organ toxicant at a concentration of: \n    (a) ≥ 1.0%?\n    (b) ≥ 10%? \n    See Table 3.8.2 for explanation of cut-off values/concentration limits.

    - Yes → Category 2 Warning
    - No →

      Does the mixture contain one or more ingredients classified as a Category 3 specific target organ toxicant at a concentration ≥ 20%?\n      See 3.8.3.4.3. Care should be exercised when classifying such mixtures.

      - Yes → Category 3 Warning
      - No → Not classified
Chapter 3.9

Replace decision logic 3.9.1 with the following (the text of the footnote remains unchanged):

```
/Substance: Does the substance have data and/or information to evaluate specific target organ toxicity following repeated exposure?

Yes

Mixture: Does the mixture as a whole or its ingredients have data/information to evaluate specific target organ toxicity following repeated exposure?

Yes

Does the mixture as a whole have data/information to evaluate specific target organ toxicity following repeated exposure?

No

Following repeated exposure,
(a) Can the substance or mixture produce significant toxicity in humans, or
(b) Can it be presumed to have the potential to produce significant toxicity in humans on the basis of evidence from studies in experimental animals?
See 3.9.2 for criteria and guidance values. Application of the criteria needs expert judgment in a weight of evidence approach.

Yes

Category 1
Danger

No

Following repeated exposure,
Can the substance or mixture be presumed to have the potential to be harmful to human health on the basis of evidence from studies in experimental animals?
See 3.9.2 for criteria and guidance values. Application of the criteria needs expert judgment in a weight of evidence approach.

Yes

Category 2
Warning

No

Classification not possible

Not classified
```

3.9.5.2 Replace decision logic 3.9.2 with the following (the text of the footnotes remains unchanged):

```
Mixture: Can bridging principles (see 3.9.3.3) be applied?

Yes -> Classify in the appropriate category

No ->

Does the mixture contain one or more ingredients classified as a Category 1 specific target organ toxicant at a concentration of:
(a) ≥ 1.0%?
(b) ≥ 10%?
See Table 3.9.3 for explanation of cut-off values/concentration limits.

Yes -> Category 1
       Danger

No -> Category 2
       Warning

Does the mixture contain one or more ingredients classified as a Category 1 specific target organ toxicant at a concentration of:
≥ 1.0 and < 10%?
See Table 3.9.3 for explanation of cut-off values/concentration limits.

Yes -> Category 2
       Warning

No

Does the mixture contain one or more ingredients classified as a Category 2 specific target organ toxicant at a concentration of:
(a) ≥ 1.0%?
(b) ≥ 10%?
See Table 3.9.3 for explanation of cut-off values/concentration limits.

Yes

No -> Not classified

```

Chapter 3.10

3.10.5.1 Replace decision logic 3.10.1 with the following:

```
Substance: Does the substance have aspiration toxicity data?

No -> Classification not possible

Yes -> Mixture: Does the mixture as a whole or its ingredients have aspiration toxicity data?

No -> Classification not possible

Yes -> Does the mixture as a whole show aspiration toxicity based on practical experience in humans from reliable and good quality evidence?

No

Yes

(a) Is there practical experience in humans from reliable and good quality evidence, for example, certain hydrocarbons, turpentine and pine oil, or
(b) Is the substance a hydrocarbon with a kinematic viscosity ≤ 20.5 mm²/s measured at 40 °C?

No

Yes

Is there evidence causing concern based on animal studies and expert judgment, and does the substance have a kinematic viscosity ≤ 14 mm²/s, measured at 40 °C? (see note 2 to table 3.10.1)

Yes

No -> Not classified

```

3.10.5.2 Replace decision logic 3.10.2 with the following:

```
Mixture: Can bridging principles be applied? (See 3.10.3.2.1 to 3.10.3.2.5) Yes

No

Does the mixture contain ≥ 10% of an ingredient or ingredients classified in Category 1 and have a kinematic viscosity ≤ 20.5 mm²/s, measured at 40 °C? (See 3.10.3.3.1)

Yes

Category 1 Danger

No

Does the mixture contain ≥ 10% of an ingredient or ingredients classified in Category 2 and have a kinematic viscosity ≤ 14 mm²/s, measured at 40 °C? (See 3.10.3.3.2)

Yes

Category 2 Warning

No

Not classified
```

Chapter 4.1

4.1.3.3.4 (a) (ii) Replace “as Chronic 1, 2 or 3” by “as Chronic 1 or 2”.

4.1.5.1.1 Replace decision logic 4.1.1. with the following (the text of the footnotes remains unchanged):

```
Substance: Is there sufficient information (toxicity, degradation, bioaccumulation) for classification? Yes

No

Acute: Does it have a:
(a) 96 hr LC₉₀ (fish) ≤ 1 mg/l; and/or
(b) 48 hr EC₉₀ (crustacea) ≤ 1 mg/l; and/or
(c) 72 or 96 hr ErC₉₀ (algae or other aquatic plants) ≤ 1 mg/l?

Yes

Acute 1 Warning

No

Acute: Does it have a:
(a) 96 hr LC₉₀ (fish) ≤ 10 mg/l; and/or
(b) 48 hr EC₉₀ (crustacea) ≤ 10 mg/l; and/or
(c) 72 or 96 hr ErC₉₀ (algae or other aquatic plants) ≤ 10 mg/l?

Yes

Acute 2²

No

Acute: Does it have a:
(a) 96 hr LC₉₀ (fish) ≤ 100 mg/l; and/or
(b) 48 hr EC₉₀ (crustacea) ≤ 100 mg/l; and/or
(c) 72 or 96 hr ErC₉₀ (algae or other aquatic plants) ≤ 100 mg/l?

Yes

Acute 3²

No

Value for the L(E)C₉₀ of the mixture from decision logic 4.1.2

Not classified for Acute
```
**Mixture:** Does the mixture itself have aquatic toxicity data for fish, crustacea, and algae/aquatic plants?

- Yes → Values for mixtures from decision logic 4.1.2
- No → Acute

**Acute**

- Does it have a 96 hr LC₅₀ (fish), 48 hr EC₅₀ (crustacea), or 72 or 96 hr ErC₅₀ (algae or other aquatic plants) ≤ 1 mg/l?
  - Yes → Acute 1
  - No → Acute 2

**Acute**

- Does it have a 96 hr LC₅₀ (fish), 48 hr EC₅₀ (crustacea), or 72 or 96 hr ErC₅₀ (algae or other aquatic plants) ≤ 10 mg/l?
  - Yes → Acute 2
  - No → Acute 3

**Acute**

- Does it have a 96 hr LC₅₀ (fish), 48 hr EC₅₀ (crustacea), or 72 or 96 hr ErC₅₀ (algae or other aquatic plants) ≤ 100 mg/l?
  - Yes → Acute 3
  - No → Not classified for Acute

**Can bridging principles be applied?**

- Yes → Classify in the appropriate category
- No → Sum of the concentrations (in %) of ingredients classified as:
  - Acute 1 × M₄ ≥ 25%?
    - Yes → Acute 1
    - No → Acute 2
  - (Acute 1 × M₄ × 10) + Acute 2 ≥ 25%?
    - Yes → Acute 2
    - No → Acute 3
  - (Acute 1 × M₄ × 100) + (Acute 2 × 10) + Acute 3 ≥ 25%?
    - Yes → Acute 3
    - No → Not classified for Acute

Use all available ingredient information in the summation method as follows:
(a) For ingredients with available toxicity value(s) apply the additivity formula (decision logic 4.1.2), determine the hazard category for that part of the mixture and use this information in the summation method below;
(b) Classified ingredients will feed directly into the summation method below.
4.1.5.1.2 Replace decision logic 4.1.2 with the following:

"Apply the additivity formula:

\[
\frac{\sum C_i}{\text{L(E)C}_{50_{\text{m}}}} - \frac{\sum C_i}{\text{L(E)C}_{50_{\text{m}}}}
\]

where:

- \( C_i \) = concentration of ingredient i (weight percentage)
- \( \text{L(E)C}_{50_{i}} \) = (mg/l) LC_{50} or EC_{50} for ingredient i
- \( n \) = number of ingredients, and i is running from 1 to n
- \( \text{L(E)C}_{50_{\text{m}}} \) = \( \text{L(E)C}_{50} \) of the part of the mixture with test data

".

4.1.5.2.1 Replace decision logic 4.1.3 (a) with the following (*the text of the footnotes remains unchanged*):

"Are there adequate chronic toxicity data available for all three trophic levels? \( ^{5,6} \)

- Yes
- No

- Go to decision logic 4.1.3 (b)

Are there adequate chronic toxicity data available for one or two trophic levels? \( ^{5,6} \)

- Yes
- No

- Go to decision logic 4.1.3 (c)

Are there adequate acute toxicity data available for those trophic levels for which chronic toxicity data are lacking? \( ^{5,6} \)

- Yes
- No

Are there nevertheless some grounds for concern? \( ^{5,6} \)

- Yes
- No

Chronic 4
No symbol
No signal word

".
4.1.5.2.2 Replace decision logic 4.1.3 (b) with the following (the text of the footnote remains unchanged):

```
Is the substance rapidly degradable? Yes \rightarrow NOEC or ECx ≤ 0.01 mg/l? No → NOEC or ECx ≤ 0.1 mg/l? No → NOEC or ECx ≤ 1 mg/l?
```

Chronic 1
Warning Assign M factor according to table 4.1.5

Chronic 2
No signal word

Chronic 3
No symbol
No signal word

Not classified for long-term (chronic) hazard

4.1.5.2.3 Replace decision logic 4.1.3 (c) with the following (the text of the footnote remains unchanged):

```
Is the substance rapidly degradable? Yes \rightarrow L(E)C_{50} ≤ 1 mg/l? No or unknown \rightarrow L(E)C_{50} ≤ 1 mg/l? No → L(E)C_{50} ≤ 10 mg/l? No → L(E)C_{50} ≤ 100 mg/l?
```

Chronic 1
Warning Assign M factor according to table 4.1.5

Chronic 2
No signal word

Chronic 3
No symbol
No signal word

Not classified for long-term (chronic) hazard

```
L(E)C_{50} ≤ 1 mg/l and BCF ≥ 500 (or if absent log K_{ow} ≥ 4? Yes \rightarrow Chronic 1 Warning Assign M factor according to table 4.1.5
```

L(E)C_{50} ≤ 10 mg/l and BCF ≥ 500 (or if absent log K_{ow} ≥ 4? Yes \rightarrow Chronic 2 No signal word

L(E)C_{50} ≤ 100 mg/l and BCF ≥ 500 (or if absent log K_{ow} ≥ 4? Yes \rightarrow Chronic 3 No symbol No signal word

Not classified for long-term (chronic) hazard
4.1.5.2.4 Replace decision logic 4.1.4 with the following (the related footnotes remain unchanged):

```

Are there adequate chronic toxicity data available for the mixture as a whole?

Yes

Follow decision logic 4.1.3 for non-rapidly degradable substances (see 4.1.5.2.1) and classify the mixture for long-term (chronic) hazard.

No

Are there sufficient data available on the individual ingredients and similar tested mixtures to adequately characterize the hazard of the mixture?

Yes

Apply bridging principles (see 4.1.3.4) and classify the mixture for long-term (chronic) hazard.

No

Apply summation method (see 4.1.3.5.5) using the concentrations (in %) of ingredients classified as chronic, or if absent, acute, and classify the mixture for long-term (chronic) hazard.

Are there adequate acute classification and/or toxicity data available for some or all relevant ingredients?¹⁰

Yes

Classification not possible due to lack of sufficient data.

No

```

Chapter 4.2

4.2.4 Replace decision logic 4.2.1 with the following:

```

"Decision logic 4.2.1"

**Substance**: Is the substance listed in the Annexes to the Montreal Protocol?

No Classification not possible

**Mixture**: Does the mixture contain ≥ 0.1% of at least one ingredient listed in the Annexes to the Montreal Protocol?

No Classification not possible

Yes Category 1 Warning

```

""
Annex 1

Replace current Annex 1 with the following:

“Annex 1

Classification and labelling summary tables

NOTE 1: The codification of hazard statements is further explained in Annex 3 (Section 1). The hazard statement codes are intended to be used for reference purposes only. They are not part of the hazard statement text and should not be used to replace it.

NOTE 2: To provide clarity, assist labelling practitioners and enable comparison between equivalent classification and labelling systems under the GHS and the UN Model Regulations, transport hazard classes, divisions and pictograms are included in Tables Al.1 to Al.30. However, it should be noted that in these tables the UN Model Regulations classification and labelling entries are provided for indicative purposes only. For transport purposes, the classification and labelling provisions prescribed by the UN Model Regulations shall be used (see also Chapter 1.4, section 1.4.10 of the GHS).

NOTE 3: GHS hazard pictograms are displayed in the shape of a square set at a point with a black symbol on a white background with a red frame. The transport pictograms (commonly referred to as labels in the UN Model Regulations) shall be displayed on a background of contrasting colour or, where appropriate, shall have either a dotted or solid boundary line as provided in Chapter 5.2, section 5.2.2.2 of the UN Model Regulations and in Tables Al.1 to Al.30 below. For some hazard categories, the symbol, number and border line of the transport pictogram may be shown in white instead of black. Where such an alternative is available it is shown in the relevant tables below (see tables Al.2, Al.3, Al.5, Al.6, Al.12, Al.15 and Al.17).
**A1.1 Explosives** (see Chapter 2.1 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explosives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<tr>
<td>2B</td>
<td>1.4</td>
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</tr>
<tr>
<td>2C</td>
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<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Under the UN Model Regulations, (*) indicates the place for compatibility group and (**) indicates the place for division - to be left blank if explosive is the subsidiary hazard.

<sup>b</sup> Additional hazard statements for explosives that are sensitive to initiation or for which sufficient information on their sensitivity is not available (see section 2.1.3 of Chapter 2.1).
### A1.2 Flammable gases (see Chapter 2.2 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>UN Model Regulations pictogram*</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable gases</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely flammable gas</td>
<td>H220</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely flammable gas</td>
<td>H220</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>May ignite spontaneously if exposed to air</td>
<td>H220</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>May react explosively even in the absence of air</td>
<td>H232</td>
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<td></td>
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<td>Extremely flammable gas</td>
<td>H220</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>May react explosively even in the absence of air</td>
<td>H230</td>
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<tr>
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<tr>
<td>2</td>
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<td>No pictogram</td>
<td>Not applicable</td>
<td>Warning</td>
<td>Flammable gas</td>
<td>H221</td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, pyrophoric gases and chemically unstable gases (A and B) are classified based on their flammability in Class 2, Division 2.1.
### A1.3 Aerosols and chemicals under pressure (see Chapter 2.3 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
</tr>
<tr>
<td>Aerosols (section 2.3.1)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals under pressure (section 2.3.2)</td>
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</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### A1.4 Oxidizing gases (see Chapter 2.4 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
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<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
</tr>
<tr>
<td>Oxidizing gases</td>
<td>1</td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, oxidising gases are classified under the applicable Class 2 division according to their primary gas hazard and will display the applicable Class 2 transport pictogram. In addition, they are assigned a Division 5.1 (flame over circle) transport pictogram due to their oxidizing subsidiary hazard.
### A1.5 Gases under pressure (see Chapter 2.5 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
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<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
</tr>
<tr>
<td>Gases under pressure</td>
<td><strong>Compressed gas</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Liquefied gas</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Refrigerated liquefied gas</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Dissolved gas</strong></td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, this pictogram is not required for gases under pressure that are also toxic or flammable gases. In those cases, the applicable toxic or flammable gas hazard class pictogram is used instead.

### A1.6 Flammable liquids (see Chapter 2.6 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
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<tbody>
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<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
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<tr>
<td>Flammable liquids</td>
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<td>2</td>
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<td></td>
<td>3</td>
</tr>
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</table>

### A1.7 Flammable solids (see Chapter 2.7 for classification criteria)

<table>
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<td><strong>GHS hazard category</strong></td>
</tr>
<tr>
<td>Flammable solids</td>
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<td></td>
<td>2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GHS hazard statement code</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H224</td>
<td>Extremely flammable liquid and vapour</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour</td>
</tr>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H228</td>
<td>Flammable solid</td>
</tr>
</tbody>
</table>
### A1.8 Self-reactive substances and mixtures
(see Chapter 2.8 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>UN Model Regulations class or division</strong></td>
</tr>
<tr>
<td>Type A</td>
<td>4.1 Type A</td>
</tr>
<tr>
<td><strong>Self-reactive substances and mixtures</strong></td>
<td><strong>and if applicable</strong></td>
</tr>
<tr>
<td>Type B</td>
<td>4.1 Type B</td>
</tr>
<tr>
<td>Types C and D</td>
<td>4.1 Types C and D</td>
</tr>
<tr>
<td>Types E and F</td>
<td>4.1 Types E and F</td>
</tr>
<tr>
<td>Type G</td>
<td>Type G</td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, where a Type B substance or mixture has an explosive subsidiary hazard, then the transport pictogram for Divisions 1.1, 1.2 or 1.3 shall also be used without the indication of the division number or the compatibility group. For a substance or mixture of hazard category Type B, special provision 181 may apply (Exemption of explosive label with competent authority approval. See Chapter 3.3 of the UN Model Regulations for more details).

* May not be acceptable for transport in the packaging in which it is tested (See Chapter 2.4, paragraph 2.4.2.3.2.1 of the UN Model Regulations).

### A1.9 Pyrophoric liquids
(see Chapter 2.9 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
</tr>
<tr>
<td>Pyrophoric liquids</td>
<td>1</td>
</tr>
</tbody>
</table>
### A1.10 Pyrophoric solids (see Chapter 2.10 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Pyrophoric solids</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
</tr>
</tbody>
</table>

### A1.11 Self-heating substances and mixtures (see Chapter 2.11 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Self-heating substances and mixtures</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
</tr>
</tbody>
</table>

### A1.12 Substances and mixtures, which in contact with water, emit flammable gases (see Chapter 2.12 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Substances and mixtures, which in contact with water, emit flammable gases</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
</tr>
</tbody>
</table>

### A1.13 Oxidizing liquids (see Chapter 2.13 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Oxidizing liquids</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GHS hazard statement codes</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>5.1</td>
</tr>
</tbody>
</table>
### A1.14 Oxidizing solids (see Chapter 2.14 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizing solids</td>
<td>1</td>
<td>D</td>
<td>Danger</td>
<td>May cause fire or explosion; strong oxidizer</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>D</td>
<td>Danger</td>
<td>H271</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>D</td>
<td>Warning</td>
<td>May intensify fire; oxidizer</td>
</tr>
</tbody>
</table>

### A1.15 Organic peroxides (see Chapter 2.15 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic peroxides</td>
<td>Type A</td>
<td>D</td>
<td>Danger</td>
<td>Heating may cause an explosion</td>
</tr>
<tr>
<td></td>
<td>Type B</td>
<td>D</td>
<td>Danger</td>
<td>Heating may cause a fire or explosion</td>
</tr>
<tr>
<td>Types C and D</td>
<td>Type C</td>
<td>D</td>
<td>Danger</td>
<td>Heating may cause a fire</td>
</tr>
<tr>
<td>Types E and F</td>
<td>Type E</td>
<td>D</td>
<td>Warning</td>
<td>No hazard statement</td>
</tr>
<tr>
<td>Type G</td>
<td>Type G</td>
<td>D</td>
<td>No hazard statement</td>
<td></td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, where a Type B substance or mixture has an explosive subsidiary hazard, then the transport pictogram for Divisions 1.1, 1.2 or 1.3 shall also be used without the indication of the division number or the compatibility group. For a substance or mixture of hazard category Type B, special provision 181 may apply (Exemption of explosive label with competent authority approval. See Chapter 3.3 of the UN Model Regulations for more details).

* May not be acceptable for transport in the packaging in which it is tested (See Chapter 2.5, paragraph 2.5.3.2.2 of the UN Model Regulations).

### A1.16 Corrosive to metals (see Chapter 2.16 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals</td>
<td>1</td>
<td>D</td>
<td>Warning</td>
<td>May be corrosive to metals</td>
</tr>
</tbody>
</table>
**A1.17 Desensitized explosives** (see Chapter 2.17 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division*</td>
<td>GHS pictogram</td>
</tr>
<tr>
<td>1</td>
<td>Desensitized explosives</td>
<td>3</td>
<td>![Fire]</td>
</tr>
<tr>
<td>2</td>
<td>or</td>
<td>3</td>
<td>![Fire]</td>
</tr>
<tr>
<td>3</td>
<td>or</td>
<td>4.1</td>
<td>![Fire]</td>
</tr>
<tr>
<td>4</td>
<td>or</td>
<td>or</td>
<td>or</td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, liquid desensitized explosives are classified in Class 3 and solid desensitized explosives are classified in Division 4.1.

**A1.18 Acute toxicity** (see Chapter 3.1 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division*</td>
<td>GHS pictogram</td>
</tr>
<tr>
<td>1, 2</td>
<td>Oral</td>
<td>2.3</td>
<td>![Fire]</td>
</tr>
<tr>
<td>1, 2</td>
<td>Dermal</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>1, 2</td>
<td>Inhalation</td>
<td></td>
<td>![Fire]</td>
</tr>
<tr>
<td>3</td>
<td>Oral</td>
<td>6.1</td>
<td>![Fire]</td>
</tr>
<tr>
<td>3</td>
<td>Dermal</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>3</td>
<td>Inhalation</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>4</td>
<td>Oral</td>
<td>Not applicable</td>
<td>![Fire]</td>
</tr>
<tr>
<td>4</td>
<td>Dermal</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>4</td>
<td>Inhalation</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>5</td>
<td>Oral</td>
<td>Not applicable</td>
<td>![Fire]</td>
</tr>
<tr>
<td>5</td>
<td>Dermal</td>
<td>or</td>
<td>![Fire]</td>
</tr>
<tr>
<td>5</td>
<td>Inhalation</td>
<td>or</td>
<td>![Fire]</td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, toxic gases are classified in Division 2.3 and toxic substances (as defined in the UN Model Regulations) are classified in Division 6.1.
### A1.19 Skin corrosion/irritation (see Chapter 3.2 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
<td><strong>UN Model Regulations class or division</strong></td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>1, 1A, 1B, 1C</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>No pictogram</td>
</tr>
</tbody>
</table>

### A1.20 Serious eye damage/eye irritation (see Chapter 3.3 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
<td><strong>UN Model Regulations class or division</strong></td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2/2A</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>2B</td>
<td>No pictogram</td>
</tr>
</tbody>
</table>

### A1.21 Respiratory sensitization (see Chapter 3.4 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
<td><strong>UN Model Regulations class or division</strong></td>
</tr>
<tr>
<td><strong>Respiratory sensitization</strong></td>
<td>1, 1A, 1B</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### A1.22 Skin sensitization (see Chapter 3.4 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS hazard class</strong></td>
<td><strong>GHS hazard category</strong></td>
<td><strong>UN Model Regulations class or division</strong></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
<td>1, 1A, 1B</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
### A1.23 Germ cell mutagenicity (see Chapter 3.5 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>1, 1A, 1B</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### A1.24 Carcinogenicity (see Chapter 3.6 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1, 1A, 1B</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### A1.25 Reproductive toxicity (see Chapter 3.7 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>1, 1A, 1B</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### A1.26 Specific target organ toxicity - single exposure

(see Chapter 3.8 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division</td>
</tr>
<tr>
<td>1</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### A1.27 Specific target organ toxicity - repeated exposure

(see Chapter 3.9 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division</td>
</tr>
<tr>
<td>1</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

### A1.28 Aspiration hazard

(See chapter 3.10 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Labelling</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS hazard class</td>
<td>GHS hazard category</td>
<td>UN Model Regulations class or division</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>1</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>
### A1.29 (a) Hazardous to the aquatic environment, short-term (acute) (see Chapter 4.1 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>GHS hazard class</th>
<th>GHS hazard category</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>UN Model Regulations pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous to the aquatic environment, short-term (Acute)</td>
<td>Acute 1</td>
<td>9</td>
<td></td>
<td>and</td>
<td>Warning</td>
<td>Very toxic to aquatic life</td>
<td>H400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute 2</td>
<td>Not applicable</td>
<td>No pictogram</td>
<td>Not applicable</td>
<td>No signal word</td>
<td>Toxic to aquatic life</td>
<td>H401</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute 3</td>
<td>Not applicable</td>
<td>No pictogram</td>
<td>Not applicable</td>
<td>No signal word</td>
<td>Harmful to aquatic life</td>
<td>H402</td>
<td></td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, for category Acute 1, environmentally hazardous substances are classified under Class 9 and shall bear both the Class 9 transport pictogram and the environmentally hazardous substance transport mark (see Chapter 5.2, section 5.2.1.6 and Chapter 5.3, section 5.3.2.3, of the UN Model Regulations). However, if the environmentally hazardous substance presents any other hazards covered by UN Model Regulations, the Class 9 transport pictogram shall be replaced by the transport pictogram(s) applicable to the hazard(s) present and the environmentally hazardous substance pictogram is not required.

### A1.29 (b) Hazardous to the aquatic environment, long-term (chronic) (see Chapter 4.1 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>GHS hazard class</th>
<th>GHS hazard category</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>UN Model Regulations pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous to the aquatic environment, long-term (Chronic)</td>
<td>Chronic 1</td>
<td>9</td>
<td></td>
<td>and</td>
<td>Warning</td>
<td>Very toxic to aquatic life with long lasting effects</td>
<td>H410</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic 2</td>
<td>Not applicable</td>
<td>No pictogram</td>
<td>Not applicable</td>
<td>No signal word</td>
<td>Toxic to aquatic life with long lasting effects</td>
<td>H411</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic 3</td>
<td>Not applicable</td>
<td>No pictogram</td>
<td>Not applicable</td>
<td>No signal word</td>
<td>Harmful to aquatic life with long lasting effects</td>
<td>H412</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic 4</td>
<td>Not applicable</td>
<td>No pictogram</td>
<td>Not applicable</td>
<td>No signal word</td>
<td>May cause long lasting harmful effects to aquatic life</td>
<td>H413</td>
<td></td>
</tr>
</tbody>
</table>

* Under the UN Model Regulations, for categories Chronic 1 and 2, environmentally hazardous substances are classified under Class 9 and shall bear both the Class 9 transport pictogram and the environmentally hazardous substance transport mark (see Chapter 5.2, section 5.2.1.6 and Chapter 5.3, section 5.3.2.3, of the UN Model Regulations). However, if the environmentally hazardous substance presents any other hazards covered by UN Model Regulations, the Class 9 transport pictogram shall be replaced by the transport pictogram(s) applicable to the hazard(s) present and the environmentally hazardous substance pictogram is not required.

### A1.30 Hazardous to the ozone layer (see Chapter 4.2 for classification criteria)

<table>
<thead>
<tr>
<th>Classification</th>
<th>GHS hazard class</th>
<th>GHS hazard category</th>
<th>UN Model Regulations class or division</th>
<th>GHS pictogram</th>
<th>UN Model Regulations pictogram</th>
<th>GHS signal word</th>
<th>GHS hazard statement</th>
<th>GHS hazard statement code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous to the ozone layer</td>
<td>1</td>
<td>Not applicable</td>
<td></td>
<td></td>
<td>Not applicable</td>
<td>Warning</td>
<td>Harms public health and the environment by destroying ozone in the upper atmosphere</td>
<td>H420</td>
</tr>
</tbody>
</table>
Annex 3, Section 1, table A3.1.1

Replace the rows for H200, H201, H202, H203 and H205 with the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H200</td>
<td>[Deleted]</td>
</tr>
<tr>
<td>H201</td>
<td>[Deleted]</td>
</tr>
<tr>
<td>H202</td>
<td>[Deleted]</td>
</tr>
<tr>
<td>H203</td>
<td>[Deleted]</td>
</tr>
<tr>
<td>H205</td>
<td>[Deleted]</td>
</tr>
</tbody>
</table>

H204, column (4)
Replace “Division 1.4” with “2B, 2C”.

H209, H210, H211
Insert the following new rows:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H209</td>
<td>Explosive</td>
<td>Explosives (chapter 2.1)</td>
</tr>
<tr>
<td>H210</td>
<td>Very sensitive</td>
<td>Explosives (chapter 2.1)</td>
</tr>
<tr>
<td>H211</td>
<td>May be sensitive</td>
<td>Explosives (chapter 2.1)</td>
</tr>
</tbody>
</table>

Annex 3, Section 2, table A3.2.2

P203, column (4)
Hazard class “Explosives”, replace “Unstable explosive” by “1, 2A, 2B”
Hazard class “Flammable gases”, replace “A, B (chemically unstable gases)” by:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Chemically unstable gas A</td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas B</td>
</tr>
</tbody>
</table>

P210, column (4)
Hazard class “Explosives”, replace “Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”
Hazard class “Flammable gases”, replace “1A, 1B, 2” by:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Flammable gas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pyrophoric gas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas B</td>
<td></td>
</tr>
<tr>
<td>1B, 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P222, hazard class “Flammable gases”, column (4)
Insert “1A,” before “Pyrophoric gas”.

P230
In column (2), replace: “Keep wetted with…” by “Keep diluted with…:”.
In column (4), hazard class “Explosives”: replace: “Divisions 1.1, 1.2, 1.3, 1.5” with “1, 2A, 2B, 2C”.
In column (5), hazard class “Explosives” (divisions 1.1, 1.2, 1.3 et 1.5), replace the current with the following:

“- for explosive substances and mixtures that are diluted with solids or liquids, or wetted with, dissolved or suspended in water or other liquids to reduce their explosive properties.
...Manufacturer/supplier or competent authority to specify appropriate material.”.
P234, hazard class “Explosives”
In column (4), replace “Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “2A, 2B, 2C”.
In column (5), add the following condition for use: “- Omit where P236 is used”.

P236
Insert the following new row for a new precautionary statement P236:

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
</table>
| P236 | Keep only in original packaging; Division … in the transport configuration. | Explosives (chapter 2.1) | 2A, 2B, 2C | - To be applied for explosives assigned a division within Class 1 for transport.
- May be omitted for single packaging where the transport pictogram displaying the division (within Class 1) appears.
- May be omitted where the use of different outer packaging results in different divisions for transport. …Manufacturer/supplier or competent authority to specify the division for transport. |

P240, hazard class “Explosives”, column (4)
Replace “Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

P250, hazard class “Explosives”, column (4)
Replace “Unstable explosive and divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

P264
In column (2), amend the text to read: “Wash hands [and…] thoroughly after handling.”
In columns (3) after “Skin irritation (Chapter 3.2)”, insert the following new row: “Serious eye damage (chapter 3.3)”.
In column (4), insert “1” for the new row “Serious eye damage (chapter 3.3)”.
In column (5):
- Merge the “conditions for use” cells for all the listed hazard classes and categories.
- Replace “… Manufacturer/supplier or the competent authority to specify parts of the body to be washed after handling.” with “- text in square brackets to be used when the manufacturer/supplier or the competent authority specify other parts of the body to be washed after handling.”.

P265 (new)
Insert a new entry for the precautionary statement P265, as follows:

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P265</td>
<td>Do not touch eyes.</td>
<td>Serious eye damage (chapter 3.3)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye irritation (chapter 3.3)</td>
<td>2/2A, 2B</td>
<td></td>
</tr>
</tbody>
</table>

P280
In column (4):
- Hazard class “Explosives”, replace “Unstable explosive and divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.
- Hazard class “Flammable gases”: Insert “1A,” before “Pyrophoric gas”.
In column (5):
- Merge the “conditions for use” cells for all the listed physical hazards entries (from “explosives” to “desensitized explosives”).
• Amend the condition for use for “serious eye damage (chapter 3.3)” and “eye irritation (chapter 3.3)” to read as follows:

“Specify protective gloves and eye/face protection. Manufacturer/supplier or the competent authority may further specify type of equipment where appropriate.”

P264+P265 (new)

Insert the following new entry at the end of table A3.2.1:

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P264</td>
<td>Wash hands [and...] thoroughly after handling. Do not touch eyes.</td>
<td>Serious eye damage (chapter 3.3)</td>
<td>1</td>
<td>- text in square brackets to be used when the manufacturer/supplier or the competent authority specify other parts of the body to be washed after handling.</td>
</tr>
<tr>
<td>+P265</td>
<td></td>
<td>Eye irritation (chapter 3.3)</td>
<td>2/2A, 2B</td>
<td></td>
</tr>
</tbody>
</table>

Annex 3, section 2, table A3.2.3

P370, hazard class “Explosives”, column (4)

Replace “Unstable explosive and divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

P372 and P373, hazard class “Explosives”

In column (4), replace “Unstable explosive and Divisions 1.1, 1.2, 1.3, and 1.5” with “1, 2A, 2B”

Delete the cells related to division 1.4 in columns (4) and (5)

P375, hazard class “Explosives”

In column (4), replace “Division 1.4” with “2C”.

In column (5), delete “– for explosives of division 1.4 (compatibility group S) in transport packaging.”.

P377 and P381, hazard class “Flammable gases”, column (4)

Replace by:

<table>
<thead>
<tr>
<th>1A</th>
<th>Flammable gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pyrophoric gas</td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas A</td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas B</td>
</tr>
<tr>
<td>1B, 2</td>
<td></td>
</tr>
</tbody>
</table>

P380, hazard class “Explosives”, column (4)

Replace “Unstable explosive and Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

P370 + P380 + P375, hazard class “Explosives”

In column (4), replace “Division 1.4” with “2C”.

In column (5), delete “– for explosives of division 1.4 (compatibility group S) in transport packaging.”

P370 + P372 + P380 + P373, hazard class “Explosives”

In column (4), replace “Unstable explosives and divisions 1.1, 1.2, 1.3, 1.5” with “1, 2A, 2B”.

Delete the cells related to division 1.4 in columns (4) and (5).
Annex 3, section 2, table A3.2.4

P401, hazard class “Explosives”, column (4)
Replace “Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

P403, hazard class “Flammable gases”, column (4)
Replace by:

<table>
<thead>
<tr>
<th></th>
<th>1A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flammable gas</td>
</tr>
<tr>
<td></td>
<td>Pyrophoric gas</td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas A</td>
</tr>
<tr>
<td></td>
<td>Chemically unstable gas B</td>
</tr>
<tr>
<td>1B, 2</td>
<td></td>
</tr>
</tbody>
</table>

Annex 3, section 2, table A3.2.5

P503, hazard class “Explosives”, column (4)
Replace “Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5” with “1, 2A, 2B, 2C”.

Annex 3, section 3, matrix of precautionary statements

Matrix tables for explosives (Chapter 2.1) (*unstable explosives and explosives of divisions 1.1, 1.2, 1.3, 1.5 and 1.4*)
Replace with the following:
## EXPLOSIVES
**(CHAPTER 2.1)**

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Symbol</th>
<th>Signal word</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exploding bomb</td>
<td>Danger</td>
<td>H209 Explosive, H210 Very sensitive, H211 May be sensitive</td>
</tr>
</tbody>
</table>

### Precautionary statements

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Response</th>
<th>Storage</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain, read and follow all safety instructions before use.</td>
<td>P370 + P372 + P380 + P373 In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.</td>
<td>Store in accordance with… … Manufacturer/supplier or the competent authority to specify local/regional/national/international regulations as applicable.</td>
<td>Refer to manufacturer/ supplier/… for information on disposal/recovery/ recycling … Manufacturer/supplier or the competent authority to specify appropriate source of information in accordance with local/regional/national/international regulations as applicable.</td>
</tr>
<tr>
<td>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep diluted with… - for explosive substances and mixtures that are diluted with solids or liquids, or wetted with, dissolved or suspended in water or other liquids to reduce their explosives properties … Manufacturer/supplier or the competent authority to specify appropriate material.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground and bond container and receiving equipment. – if the explosive is electrostatically sensitive.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not subject to grinding/shock/friction/… – if the explosive is mechanically sensitive. …Manufacturer/supplier or the competent authority to specify applicable rough handling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/… Manufacturer/supplier or the competent authority to specify the appropriate personal protective equipment.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### EXPLOSIVES (CHAPTER 2.1)

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Symbol</th>
<th>Signal word</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A Exploding bomb</td>
<td>*</td>
<td>Danger</td>
<td>H209 Explosive</td>
</tr>
<tr>
<td>2B Exploding bomb</td>
<td></td>
<td>Warning</td>
<td>H204 Fire or projection hazard</td>
</tr>
</tbody>
</table>

#### Precautionary statements

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Response</th>
<th>Storage</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>P203 Obtain, read and follow all safety instructions before use.</td>
<td>P370 + P372 + P380 + P373 In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.</td>
<td>P401 Store in accordance with… … Manufacturer/supplier or the competent authority to specify local/regional/national/international regulations as applicable.</td>
<td>P503 Refer to manufacturer/supplier/… for information on disposal/recovery/recycling … Manufacturer/supplier or the competent authority to specify appropriate source of information in accordance with local/regional/national/international regulations as applicable.</td>
</tr>
<tr>
<td>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P230 Keep only in original packaging. - Omit where P236 is used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P234 Keep only in original packaging; Division … in the transport configuration. - to be applied for explosives assigned a division within Class 1 for transport. - may be omitted for single packaging where the transport pictogram displaying the division (within Class 1) appears. - may be omitted where the use of different outer packaging results in different divisions for transport. … Manufacturer/supplier or the competent authority to specify the division for transport.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P240 Ground and bond container and receiving equipment. – if the explosive is electrostatically sensitive.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P250 Do not subject to grinding/shock/friction/… – if the explosive is mechanically sensitive. …Manufacturer/supplier or the competent authority to specify applicable rough handling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/…</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer/supplier or the competent authority to specify the appropriate personal protective equipment.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Explosives

## Hazard Category

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Symbol</th>
<th>Signal word</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2C</td>
<td>Exclamation mark</td>
<td>Warning</td>
<td>H204 Fire or projection hazard</td>
</tr>
</tbody>
</table>

### Precautionary Statements

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Response</th>
<th>Storage</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
<td>P370 + P380 + P375 In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion</td>
<td>P401 Store in accordance with... Manufacturer/supplier or the competent authority to specify local/regional/national/international regulations as applicable.</td>
<td>P503 Refer to manufacturer/supplier/… for information on disposal/recovery/recycling Manufacturer/supplier or the competent authority to specify appropriate source of information in accordance with local/regional/national/international regulations as applicable.</td>
</tr>
<tr>
<td>P230 Keep diluted with... For explosive substances and mixtures that are diluted with solids or liquids, or wetted with, dissolved or suspended in water or other liquids to reduce their explosives properties, Manufacturer/supplier or the competent authority to specify appropriate material.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P234 Keep only in original packaging. - Omit where P236 is used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P236 Keep only in original packaging; Division … in the transport configuration. - to be applied for explosives assigned a division within Class 1 for transport. - may be omitted for single packaging where the transport pictogram displaying the division (within Class 1) appears. - may be omitted where the use of different outer packaging results in different divisions for transport, Manufacturer/supplier or the competent authority to specify the division for transport.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P240 Ground and bond container and receiving equipment. – if the explosive is electrostatically sensitive.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P250 Do not subject to grinding/shock/friction/... – if the explosive is mechanically sensitive. Manufacturer/supplier or the competent authority to specify applicable rough handling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... Manufacturer/supplier or the competent authority to specify the appropriate personal protective equipment.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Desensitized explosives (chapter 2.17), categories 1, 2, 3 and 4, column “Prevention”,

Replace the text of precautionary statement P230 with the following:

“Keep diluted with…
…Manufacturer/supplier or competent authority to specify appropriate material.”

Acute toxicity, oral, (chapter 3.1), categories 1, 2, 3 and 4, column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

Acute toxicity, dermal, (chapter 3.1), categories 1 and 2, column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

Skin corrosion/irritation, (chapter 3.2), categories 1, A1 to 1C and 2, column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

Eye damage/irritation, (chapter 3.3), categories 1 and 2/2A, column “Prevention”

Insert the following new combined precautionary statement:

“P264+P265
Wash hands [and...] thoroughly after handling. Do not touch eyes.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

For P280, add: “- Specify protective gloves and eye/face protection.” before the
sentence starting with “The competent authority…”.

Eye damage/irritation, (chapter 3.3), category 2B, column “Prevention”

Insert the following new combined precautionary statement:

“P264+P265
Wash hands [and...] thoroughly after handling. Do not touch eyes.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

Reproductive toxicity (chapter 3.7) (effects on or via lactation), column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”

Specific target organ toxicity (single exposure) (chapter 3.8), categories 1 and 2, column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling.
- text in square brackets to be used when the manufacturer/supplier or the
competent authority specify other parts of the body to be washed after handling.”
Specific target organ toxicity (repeated exposure) (chapter 3.9), category 1, column “Prevention”

Replace the text of precautionary statement P264 with the following:

“Wash hands [and...] thoroughly after handling. Do not touch eyes.
- text in square brackets to be used when the manufacturer/supplier or the competent authority specify other parts of the body to be washed after handling.”

Annex 4

A4.3.9 Amend the heading of section 9 to read “Physical and chemical properties”.

Annex 9

Insert the following Note under the heading of Annex 9 and delete current footnote 1:

“NOTE: The text of Annex 9 is largely based on the “Guidance document on the use of the harmonised system for the classification of chemicals which are hazardous for the aquatic environment” published by OECD in 2001, as Series on Testing and Assessment No.27 (ENV/JM/MONO(2001)8). The Guidance document has remained unchanged since its publication in 2001, but since then, new OECD Test Guidelines or Guidance Documents have been adopted which are an additional source of information. For a list of updated references, refer to appendices V and VI to Annex 9.”

A9.3.2.7.2 Replace “OECD Test Guideline on Lemna (in preparation)” with “OECD Test Guideline on Lemna (in preparation)\(^1\)” and add a footnote “\(^1\)” to read as follows: “Published. OECD Test Guideline No. 221: Lemna sp. Growth Inhibition Test.”

A9.4.2.4.9 Replace “(e.g. the OECD Test Guideline 303)” with “(e.g. the OECD Test Guideline 303)\(^3\)” and add a footnote “\(^3\)” to read as follows: “\(^3\) OECD Test Guidelines 311 and 314 are also available.”

Appendix V to Annex 9

• Item 1:
  Amend sub-paragraphs (b) to (e) to read as follows:

  “(b) ISO guidelines: Available from the national standardisation organisations or ISO [http://www.iso.org/iso/home.html];

  (c) OECD guidelines for the testing of chemicals. OECD, Paris, 1993 with regular updates [http://www.oecd.org/env/ehs/testing/oecdguidelinesforthetestingofchemicals.htm];


  (e) ASTM: [https://www.astm.org/Standard/standards-and-publications.html]”

• Item 2:
  Amend the following entries to read as follows:


  “OECD Test Guideline 203 (1992) (Updated in 2019) Fish, Acute Toxicity Test”

  “OECD Test Guideline 210 (1992) (Updated in 2013) Fish, Early-Life Stage Toxicity Test”

OECD Test Guideline 238 (2014) Sediment-Free Myriophyllum Spicatum Toxicity Test
OECD Test Guideline 240 (2015), Medaka Extended One-generation Test
OECD Test Guideline 242 (2016) Potamopyrgus antipodarum Reproduction Test

• Item 3:
Amend the following entries to read as follows:


“OECD Test Guideline 303A (1981). Simulation test-aerobic sewage treatment: couple units tests. OECD guidelines for testing of chemicals. Additional test guidelines include:


OECD Test Guideline 308 (2002). Aerobic and anaerobic transformation in aquatic sediment systems. OECD guidelines for testing of chemicals

OECD Test Guideline 309 (2004). Aerobic mineralisation in surface water – Simulation biodegradation test. OECD guidelines for testing of chemicals. Additional test guidelines include:

OECD Test Guideline 310 (2014) Ready Biodegradability - CO₂ in sealed vessels (Headspace Test)

• Item 4:
Amend the following entries to read as follows:


Annex 9, Appendix VI

Amend all references to the following entries to read as follows:


Annex 10, Appendix

Under “Bibliography”

- Point 1, after “Guideline 201” insert “(Updated in 2011)”.
- Point 2, after “Guideline 202” insert “(Updated in 2004)”.
- Point 3, after “Guideline 203” insert “(Updated in 2019)”.
- Point 5, after “Guideline 210” insert “(Updated in 2013)”.

Amend the footnote to OECD Test Guideline 204 to read: “This test guideline has been cancelled.”.