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**COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS**

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

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Item 3 (c) of the provisional agenda

HAZARD COMMUNICATION ISSUES

Codification of hazard and precautionary statements

Transmitted by the representatives from the European Chemical Industry Council (CEFIC), the International Association of the Soap, Detergent and Maintenance Products Industry (AISE) and the International Paint and Printing Ink Council (IPPIC)

Addendum 1

# Proposal for the revision of Annexes 1, 2 and 3 of the GHS

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# “ANNEX 1

# CLASSIFICATION

# SUMMARY TABLES

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# Annex 1

# CLASSIFICATION SUMMARY TABLES

## A1.1 Introduction

A1.1.1 This Annex contains a summary of the classification criteria in the individual hazard class chapters in Parts 2, 3 and 4 of the GHS. The criteria in those hazard class chapters shall always be referred to for full information on the classification criteria for substances and mixtures.

## A1.2 Classification summary tables for physical hazards

### A1.2.1 ***Explosives*** *(see Chapter 2.1 for details)*

| Hazard category | Explosives: Classification criteria |
|---|---|
| **Unstable explosives** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.1** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.2** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.3** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.4** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.5** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |
| **Division 1.6** | According to the results of the test in Part I of the *Manual of Tests and Criteria, UN Recommendations on the Transport of Dangerous Goods.* |

### A1.2.2 ***Flammable gases*** *(See Chapter 2.2 for details)*

| Hazard category | Flammable gases: Classification criteria |
|---|---|
| **1** | Gases and gas mixtures, which at 20 °C and a standard pressure of 101.3 kPa:<br>(a) are ignitable when in a mixture of 13% or less by volume in air; or<br>(b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. |
| **2** | Gases or gas mixtures, other than those of Category 1, which, at 20 °C and a standard pressure of 101.3 kPa, have a flammable range while mixed in air. |

**A1.2.3** ***Flammable aerosols*** *(See Chapter 2.3 for details)*

| Hazard category | Flammable aerosols: Classification criteria |
|---|---|
| **1** | On the basis of its components, of its chemical heat of combustion and, if applicable, of the results of the foam test, for foam aerosols, and of the ignition distance test and enclosed space test, for spray aerosols (see decision logic in 2.3.4.1 of Chapter 2.3). |
| **2** | On the basis of its components, of its chemical heat of combustion and, if applicable, of the results of the foam test, for foam aerosols, and of the ignition distance test and enclosed space test, for spray aerosols (see decision logic in 2.3.4.1 of Chapter 2.3). |

**A1.2.4** ***Oxidizing gases*** *(See Chapter 2.4 for details)*

| Hazard category | Oxidizing gases: Classification criteria |
|---|---|
| **1** | Any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does. |

**A1.2.5** ***Gases under pressure*** *(See Chapter 2.5 for details)*

| Hazard category | Gases under pressure: Classification criteria |
|---|---|
| **Compressed gas** | A gas, which when packaged under pressure is entirely gaseous at -50 °C; including all gases with a critical temperature ≤ -50 °C. |
| **Liquefied gas** | A gas which when packaged under pressure, is partially liquid at temperatures above -50 °C. A distinction is made between:<br>i) *High pressure liquefied gas*: a gas with a critical temperature between -50 °C and +65 °C; and<br>ii) *Low pressure liquefied gas*: a gas with a critical temperature above +65 °C. |
| **Refrigerated liquefied gas** | A gas which when packaged is made partially liquid because of its low temperature. |
| **Dissolved gas** | A gas which when packaged under pressure is dissolved in a liquid phase solvent. |

**A1.2.6** ***Flammable liquids*** *(See Chapter 2.6 for details)*

| Hazard category | Flammable liquids: Classification criteria |
|---|---|
| **1** | Flash point < 23 °C and initial boiling point ≤ 35 °C. |
| **2** | Flash point < 23 °C and initial boiling point >35 °C. |
| **3** | Flash point ≥ 23 °C and ≤ 60 °C. |
| **4** | Flash point > 60 °C and ≤ 93 °C. |

**A1.2.7** ***Flammable solids*** *(See Chapter 2.7 for details)*

| Hazard category | Flammable solids: Classification criteria |
|---|---|
| **1** | Burning rate test:<br>Substances and mixtures other than metal powders:<br>(a) wetted zone does not stop fire and<br>(b) burning time < 45 s or burning rate > 2.2 mm/s<br>Metal powders:<br>- burning time ≤ 5 min. |
| **2** | Burning rate test:<br>Substances and mixtures other than metal powders:<br>(a) wetted zone stops the fire for at least 4 minutes and<br>(b) burning time < 45 s or burning rate > 2.2 mm/s<br>Metal powders :<br>- burning time > 5 min and ≤ 10 min. |

**A1.2.8** ***Self-reactive substances and mixtures*** *(See Chapter 2.8 for details)*

| Hazard category | Self-reactive substances and mixtures: Classification criteria |
|---|---|
| **Type A** | According to the results of tests in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.8.4.1 of Chapter 2.8. |
| **Type B** | According to the results of tests in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.8.4.1 of Chapter 2.8. |
| **Type C and D** | According to the results of tests in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.8.4.1 of Chapter 2.8. |
| **Type E and F** | According to the results of tests in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.8.4.1 of Chapter 2.8. |
| **Type G** | According to the results of tests in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.8.4.1 of Chapter 2.8. |

**A1.2.9** ***Pyrophoric liquids*** *(See Chapter 2.9 for details)*

| Hazard category | Pyrophoric liquids: Classification criteria |
|---|---|
| **1** | The liquid ignites within 5 min when added to an inert carrier and exposed to air, or it ignites or chars a filter paper on contact with air within 5 min. |

**A1.2.10** ***Pyrophoric solids*** *(See Chapter 2.10 for details)*

| Hazard category | Pyrophoric solids: Classification criteria |
|---|---|
| **1** | The solid ignites within 5 minutes of coming into contact with air. |

**A1.2.11** ***Self-heating substances and mixtures*** *(See Chapter 2.11 for details)*

| Hazard category | Self-heating substances and mixtures: Classification criteria |
|---|---|
| **1** | A positive result is obtained in a test using a 25 mm sample cube at 140 °C. |
| **2** | (a) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C and the substance is to be packed in packages with a volume of more than 3 m3; or<br>(b) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C, a positive result is obtained in a test using a 100 mm cube sample at 120 °C and the substance is to be packed in packages with a volume of more than 450 litres; or<br>(c) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C and a positive result is obtained in a test using a 100 mm cube sample at 100 °C. |

**A1.2.12** ***Substances and mixtures, which on contact with water, emit flammable gases*** *(See Chapter 2.12 for details)*

| Hazard category | Substances and mixtures, which on contact with water, emit flammable gases: Classification criteria |
|---|---|
| **1** | Any substance which reacts vigorously with water at ambient temperatures and demonstrates generally a tendency for the gas produced to ignite spontaneously, or which reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is equal to or greater than 10 litres per kilogram of substance over any one minute. |
| **2** | Any substance which reacts readily with water at ambient temperatures such that the maximum rate of evolution of flammable gas is equal to or greater than 20 litres per kilogram of substance per hour, and which does not meet the criteria for Category 1. |
| **3** | Any substance which reacts slowly with water at ambient temperatures such that the maximum rate of evolution of flammable gas is equal to or greater than 1 litre per kilogram of substance per hour, and which does not meet the criteria for Categories 1 and 2. |

**A1.2.13** ***Oxidizing liquids*** *(See Chapter 2.13 for details)*

| Hazard category | Oxidizing liquids: Classification criteria |
|---|---|
| **1** | Any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, spontaneously ignites; or the mean pressure rise time of a 1:1 mixture, by mass, of substance and cellulose is less than that of a 1:1 mixture, by mass, of 50% perchloric acid and cellulose. |
| **2** | Any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, exhibits 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 solution and cellulose; and the criteria for Category 1 are not met. |
| **3** | Any substance which, in the 1:1 mixture, by mass, of substance and cellulose tested, exhibits 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; and the criteria for Categories 1 and 2 are not met. |

**A1.2.14** ***Oxidizing solids*** *(See Chapter 2.14 for details)*

| Hazard category | Oxidizing solids: Classification criteria |
|---|---|
| **1** | Any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose. |
| **2** | Any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture (by mass) of potassium bromate and cellulose and the criteria for Category 1 are not met. |
| **3** | Any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose and the criteria for Categories 1 and 2 are not met. |

**A1.2.15** ***Organic peroxides*** *(See Chapter 2.15 for details)*

| Hazard category | Organic peroxides: Classification criteria |
|---|---|
| **Type A** | According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.15.4.1 of Chapter 2.15. |
| **Type B** | According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.15.4.1 of Chapter 2.15. |
| **Types C and D** | According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.15.4.1 of Chapter 2.15. |
| **Types E and F** | According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.15.4.1 of Chapter 2.15. |
| **Type G** | According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II* and the application of the decision logic under 2.15.4.1 of Chapter 2.15. |

**A1.2.16** ***Corrosive to metals*** *(See Chapter 2.16 for details)*

| Hazard category | Substances and mixtures corrosive to metals: Classification criteria |
|---|---|
| **1** | Corrosion rate on steel or aluminium surfaces exceeding 6.25 mm per year at a test temperature of 55 °C. |

## A1.3 Classification summary tables for health hazards

### A1.3.1 *Acute toxicity* *(See Chapter 3.1 for details)*

| Hazard category | Acute toxicity: Classification criteria |
|---|---|
| **1** | Oral $LD_{50} \leq 5$ mg/kg bodyweight, or<br>Dermal $LD_{50} \leq 50$ mg/kg bodyweight, or<br>Inhalation (gas) $LC_{50} \leq 100$ ppm, or<br>Inhalation (vapour) LC50 ≤ 0.5 mg/l, or<br>Inhalation (dust/mist) $LC_{50} \leq 0.05$ mg/l |
| **2** | Oral $LD_{50}$ >5 but < 50 mg/kg bodyweight, or<br>Dermal $LD_{50}$ >50 but < 200 mg/kg bodyweight, or<br>Inhalation (gas) $LC_{50}$ >100 but < 500 ppm, or<br>Inhalation (vapour) $LC_{50}$ > 0.5 but < 2.0 mg/l, or<br>Inhalation (dust/mist) $LC_{50}$ >0.05 but ≤ 0.5 mg/l |
| **3** | Oral $LD_{50}$ >50 but ≤ 300 mg/kg bodyweight, or<br>Dermal $LD_{50}$ > 200 but ≤ 1000 mg/kg bodyweight, or<br>Inhalation (gas) $LC_{50}$ >500 but ≤ 2500 ppm, or<br>Inhalation (vapour) $LC_{50}$ >2 but ≤ 10.0 mg/l, or<br>Inhalation (dust/mist) $LC_{50}$ >0.5 but ≤ 1.0 mg/l |
| **4** | Oral $LD_{50}$ >300 but ≤ 2000 mg/kg bodyweight, or<br>Dermal $LD_{50}$ >1000 but ≤ 2000 mg/kg bodyweight, or<br>Inhalation (gas) $LC_{50}$ >2500 but ≤ 5000 ppm, or<br>Inhalation (vapour) $LC_{50}$ >10 but ≤ 20 mg/l, or<br>Inhalation (dust/mist) $LC_{50}$ >1 but ≤ 5 mg/l |
| **5** | Oral $LD_{50}$ >2000 but ≤ 5000 mg/kg bodyweight,<br>For gases, vapours, dusts, mists, $LC_{50}$ in the equivalent range of the oral and dermal $LD_{50}$ (i.e., between 2000 and 5000 mg/kg bodyweight).<br>See also the additional criteria:<br>(a) Indication of significant effect in humans;<br>(b) Any mortality at Category 4;<br>(c) Significant clinical signs at Category 4;<br>(d) Indication from other studies. |

**A1.3.2** ***Skin corrosion/irritation*** *(See Chapter 3.2 for details)*

| Hazard category | Skin corrosion/irritation: Classification criteria |
|---|---|
| **1**<br><br>**Corrosive**<br><br>**Including sub-categories 1A, 1B, and 1C;**<br><br>(See Chapter 3.2, Table 3.2.1) | 1. *For substances and tested mixtures:*<br>(a) Human experience showing irreversible damage to the skin;<br>(b) Structure/activity or structure property relationship to a substance or mixture already classified as corrosive;<br>(c) pH extremes of ≤ 2 and ≥ 11.5 including acid/alkali reserve capacity;<br>(d) Positive results in a valid and accepted *in vitro* skin corrosion test; or<br>(e) Animal experience or test data that indicate that the substance/mixture causes irreversible damage to the skin following exposure of up to 4 hours (See Table 3.2.1).<br>2. *If data for a mixture are not available,* use bridging principles in 3.2.3.2.<br>3. *If bridging principles do not apply,*<br>(a) For mixtures where substances can be added:<br>Classify as corrosive if the sum of the concentrations of corrosive substances in the mixture is ≥ 5% (for substances with additivity); or<br>(b) For mixtures where substances cannot be added:<br>≥ 1%. See 3.2.3.3.4. |
| **2**<br><br>**Irritant**<br><br>(applies to all authorities) | 1. *For substances and tested mixtures*<br>(a) Human experience or data showing reversible damage to the skin following exposure of up to 4 hours;<br>(b) Structure/activity or structure property relationship to a substance or mixture already classified as an irritant;<br>(c) Positive results in a valid and accepted *in vitro* skin irritation test; or<br>(d) Animal experience or test data that indicate that the substance/mixture causes reversible damage to the skin following exposure of up to 4 hours, mean value of ≥ 2.3 < 4.0 for erythema/eschar or for oedema, or inflammation that persists to the end of the observation period, in 2 of 3 tested animals (Table 3.2.2).<br>2. *If data for a mixture are not available,* use bridging principles in 3.2.3.2.<br>3. *If bridging principles do not apply,*<br>classify as an irritant if:<br>(a) For mixtures where substances can be added:<br>the sum of concentrations of corrosive substances in the mixture is ≥ 1% but ≤ 5%;<br>the sum of the concentrations of irritant substances is ≥ 10%; or<br>the sum of (10 × the concentrations of corrosive ingredients) +<br>(the concentrations of irritant ingredients) is ≥ 10%; or<br>(b) For mixtures where substances cannot be added: ≥ 3%. (See 3.2.3.3.4). |

| Hazard category | Skin corrosion/irritation: Classification criteria *(cont"d)* |
|---|---|
| **3**<br><br>**Mild irritant**<br><br>(applies to some authorities) | 1. *For substances and tested mixtures*<br><br>Animal experience or test data that indicates that the substance/mixture causes reversible damage to the skin following exposure of up to 4 hours, mean value of ≥ 1.5 < 2.3 for erythema/eschar in 2 of 3 tested animals (See Table 3.2.2).<br><br>2. *If data for a mixture are not available*, ~~and~~use the bridging principles in 3.2.3.2.<br><br>3. *If bridging principles do not apply,*<br>classify as mild irritant if:<br><br>(a) For mixtures where substances can be added<br>the sum of the concentrations of irritant substances in the mixture is ≥ 1% but ≤ 10%;<br><br>(b) For mixtures where substances cannot be added:<br>the sum of the concentrations of mild irritant substances is ≥ 10%;<br><br>(c) the sum of (10 × the concentrations of corrosive substances) +<br>(the concentrations of irritant substances) is ≥ 1% but ≤ 10%; or<br><br>(d) the sum of (10 × the concentrations of corrosive substances) +<br>(the concentrations of irritant substances) +<br>(the concentrations of mild irritant substances) is ≥ 10%. |

**A1.3.3** ***Serious eye damage/eye irritation*** *(See Chapter 3.3 for details)*

| Hazard category | Serious eye damage/eye irritation: Classification criteria |
|---|---|
| **1**<br><br>**Irreversible effects** | 1. *For substances and tested mixtures*<br>(a) Classification as corrosive to skin;<br>(b) Human experience or data showing damage to the eye which is not fully reversible within 21 days;<br>(c) Structure/activity or structure property relationship to a substance or mixture already classified as corrosive;<br>(d) pH extremes of ≤ 2 and ≥ 11.5 including buffering capacity;<br>(e) Positive results in a valid and accepted *in vitro* test to assess serious damage to eyes; or<br>(f) Animal experience or test data that the substance or mixture produces either<br>(i) in at least one animal, effects on the cornea, iris or conjunctiva that are not expected to reverse or have not reversed; or<br>(ii) in at least 2 of 3 tested animals a positive response of corneal opacity ≥ 3 and/or iritis >1.5 (see Table 3.3.1).<br>2. *If data for a mixture are not available,* use bridging principles in 3.3.3.2.<br>3. *If bridging principles do not apply,*<br>(a) For mixtures where substances can be added:<br>Classify as Category 1 if the sum of the concentrations of substances classified as corrosive to the skin and/or<br>eye Category 1 substances in the mixture is ≥ 3%; or<br>(b) For mixtures where substances cannot be added:<br>≥ 1 (see 3.3.3.3.4). |

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| Hazard category | Serious eye damage/eye irritation: Classification criteria *(cont"d)* |
|---|---|
| **2A**<br><br>**Irritant** | 1. *For substances and tested mixtures*<br>(a) Classification as severe skin irritant;<br>(b) Human experience or data showing production of changes in the eye which are fully reversible within 21 days;<br>(c) Structure/activity or structure property relationship to a substance or mixture already classified as an eye irritant;<br>(d) Positive results in a valid and accepted *in vitro* eye irritation test; or<br>(e) Animal experience or test data that indicate that the substance/mixture produces a positive response in at least 2 of 3 tested animals of:<br>(i) corneal opacity ≥1;<br>(ii) iritis ≥1; or<br>(iii) conjunctival edema (chemosis) ≥2 (Table 3.3.2).<br>2. *If data for a mixture are not available,* use bridging principles in 3.3.3.2.<br>3. *If bridging does not apply,*<br>classify as an irritant (2A) if:<br>(a) For mixtures where substances can be added:<br>(i) the sum of the concentrations of skin and/or eye Category 1 substances in the mixture is ≥ 1% but ≤ 3%;<br>(ii) the sum of the concentrations of eye irritant substances is ≥ 10%; or<br>(iii) the sum of (10 × the concentrations of skin and/or eye category 1 substances) + (the concentrations of eye irritants) is ≥ 10%;<br>(b) For mixtures where substances cannot be added:<br>the sum of the concentrations of eye irritant ingredients is ≥ 3% (see 3.3.3.3.4). |

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| Hazard category | Serious eye damage/eye irritation: Classification criteria *(cont"d)* |
|---|---|
| **2B**<br><br>**Mild irritant** | 1. *For substances and tested mixtures*<br>(a) Human experience or data showing production of mild eye irritation;<br>(b) Animal experience or test data that indicate that the lesions are fully reversible within 7 days (see Table 3.3.2).<br>2. *If data for a mixture are not available,* use bridging principles in 3.3.3.2.<br>3. *If bridging does not apply,*<br>classify as an irritant (2B) if:<br>(a) For mixtures where substances can be added:<br>(i) the sum of the concentrations of skin and/or eye Category 1 substances in the mixture is ≥ 1% but ≤ 3%;<br>(ii) the sum of the concentrations of eye irritant substances is ≥ 10%; or<br>(iii) the sum of (10 × the concentrations of skin and/or eye category 1 substances) + (the concentrations of eye irritants) is ≥ 10%;<br>(b) For mixtures where substances cannot be added:<br>the sum of the concentrations of eye irritant ingredients is ≥ 3% (see 3.3.3.3.4). |

**A1.3.4.1** ***Respiratory sensitizer*** *(See Chapter 3.4 for details)*

| Hazard category | Respiratory sensitizers: Classification criteria |
|---|---|
| **1** | 1. *For substances and tested mixtures*<br>(a) If there is human evidence that the individual substance induces specific respiratory hypersensitivity, and/or<br>(b) Where there are positive results from an appropriate animal test.<br>2. *If these mixture meets the criteria*<br>set forth in the "Bridging Principles" through one of the following:<br>(a) Dilution;<br>(b) Batching;<br>(c) Substantially similar mixture.<br>3. *If bridging principles do not apply,*<br>classify if any individual respiratory sensitizer in the mixture has a concentration of:<br>≥ 1.0% Solid/liquid<br>≥ 0.2% Gas. |

**A1.3.4.2** ***Skin sensitizer*** *(See Chapter 3.4 for details)*

| Hazard category | Skin sensitizers: Classification criteria |
|---|---|
| **1** | 1. *For substances and tested mixtures*<br>(a) If there is evidence in humans that the individual substance can induce sensitization by skin contact in a substantial number of persons, or<br>(b) Where there are positive results from an appropriate animal test.<br>2. *If the mixture meets the criteria*<br>set forth in the "Bridging Principles" through one of the following:<br>(a) Dilution;<br>(b) Batching;<br>(c) Substantially similar mixture.<br>43. *If bridging principles do not apply,*<br>classify if any individual skin sensitizer in the mixture has a concentration of:<br>≥ 1.0% solid/liquid/gas |

**A1.3.5** ***Germ cell mutagenicity*** *(See Chapter 3.5 for details)*

| Hazard category | Germ cell mutagenicity: Classification criteria |
|---|---|
| **1 (Both 1A and 1B)** | Known to induce heritable mutations or regarded as if it induces heritable mutations in the germ cells of humans (see criteria in 3.5.2); or<br>mixtures containing ≥ 0.1 % of such a substance. |
| **2** | Causes concern for man owing to the possibility that it may induce heritable mutations in the germ cells of humans (see criteria in 3.5.2); or<br>mixtures containing ≥ 1.0 % of such a substance. |

**A1.3.6** ***Carcinogenicity*** *(See Chapter 3.6 for details)*

| Hazard category | Carcinogenicity: Classification criteria |
|---|---|
| **1 (Both 1A and 1B)** | Known or presumed human carcinogen including mixtures containing ≥ 0.1% of such a substance. |
| **2** | Suspected human carcinogen including mixtures containing more than ≥ 0.1 or ≥1.0 % of such a substance<br>(see Notes 1 and 2 in Table 3.6.1 of Chapter 3.6 [a]). |

[a] *Some authorities will choose to label according to this provision, others may not*

**A1.3.7** ***Toxic to reproduction*** *(See Chapter 3.7 for details)*

| Hazard category | Toxic to reproduction: Classification criteria |
|---|---|
| **1 (Both 1A and 1B)** | Known or presumed human reproductive toxicants<br>(see criteria in section 3.7.2 of Chapter 3.7); or<br>mixtures containing ≥ 0.1% or ≥ 0.3 % of such a substance<br>(see section 3.7.3 and Notes 1 and 2 of Table 3.7.1, Chapter 3.7). |
| **2** | Suspected human reproductive toxicants<br>(see criteria in section 3.7.2 of Chapter 3.7); or<br>mixtures containing ≥ 0.1% or ≥3.0 % of such a substance<br>(see section 3.7.3 and Notes 3 and 4 of Table 3.7.1, Chapter 3.7). |
| **Additional category for effects on or via lactation** | Substances which cause concern for the health of breastfed children<br>(see criteria in section 3.7.2 of Chapter 3.7); or<br>mixtures containing ≥ 0.1% or ≥ 0.3 % of such a substance<br>(see criteria in section 3.7.3 and Notes 1 and 2 of Table 3.7.1, Chapter 3.7). |

**A1.3.8** ***Specific target organ systemic toxicity following single exposure*** *(See Chapter 3.8 for details)*

| Hazard category | Specific target organ systemic toxicity following single exposure: Classification criteria |
|---|---|
| **1** | Reliable evidence on the substance or mixture (including bridging) of an adverse effect on specific organ/systems or systemic toxicity in humans or animals. May use guidance values in Table 3.8.1, Category 1 criteria as part of weight of evidence evaluation. May be named for specific organ/system.<br><br>Mixture that lacks sufficient data, but contains Category 1 ingredient at a concentration of ≥ 1.0 to ≤ 10.0% for some authorities; and ≥10.0% for all authorities. |
| **2** | Evidence on the substance or mixture (including bridging) of an adverse effect on specific organ/systems or systemic toxicity from animal studies or humans considering weight of evidence and guidance values in Table 3.8.1, Category 2 criteria. May be named for specific organ/system affected.<br><br>Mixture that lacks sufficient data, but contains Category 1 ingredient: ≥ 1 but ≤ 10% for some authorities; and /or contains Category 2 ingredient: ≥ 1 to ≤ 10% for some authorities; and ≥ 10% for all authorities. |
| **3** | (a) (Respiratory tract irritation)<br><br>Evidence on the substance or mixture of transient irritant effects on respiratory tract in humans ; or<br><br>(b) (Narcotic effects)<br><br>Evidence on the substance or mixture of transient narcotic effects from animal studies and in humans. |

**A1.3.9** ***Specific target organ systemic toxicity following repeated exposure*** *(See Chapter 3.9 for details)*

| Hazard category | Specific target organ systemic toxicity following repeated exposure: Classification criteria |
|---|---|
| **1** | Reliable evidence on the substance or mixture (including bridging) of an adverse effect on specific organ/systems or systemic toxicity in humans or animals. May use guidance values in Table 3.9.1 as part of weight of evidence evaluation. May be named for specific organ/system.<br>Mixture that lacks sufficient data, but contains Category 1 ingredient: ≥ 1 to ≤ 10% for some authorities; and ≥ 10% for all authorities. |
| **2** | Evidence on the substance or mixture (including bridging) of an adverse effect on specific organ/systems or systemic toxicity from animal studies or humans considering weight of evidence and guidance values in Table 3.9.2. May be named for specific organ/system.<br>Mixture that lacks sufficient data, but contains Category 1 ingredient: ≥ 1.0 but ≤ 10% for some authorities (see Note 3 of Table 3.9.3); and/or<br>contains Category 2 ingredient: ≥ 1.0 or ≤10%. |

**A1.3.10** ***Aspiration hazard*** *(See Chapter 3.10 for details)*

| Hazard category | Aspiration hazard: Classification criteria |
|---|---|
| **1** | 1. *For substances and tested mixtures*<br>(a) Practical experience from reliable and good quality human evidence showing human aspiration toxicity including chemical pneumonia, varying degree of pulmonary injury or death following aspiration;<br>(b) Hydrocarbons with a kinematic viscosity of 20.5 $mm^2/s$ or less, measured at 40 °C;<br>2. *If data for a mixture are not available,* use bridging principles in 3.10.3.2.<br>3. *If bridging principles do not apply,*<br>classify under aspiration hazard Category 1:<br>(a) Mixtures containing 10% or more of a substance or substances classified in Category 1 and having a kinematic viscosity of 20.5 $mm^2/s$ or less when measured at 40 °C;<br>(b) Mixtures which separate into two or more distinct layers, one of which contains 10 % or more of a substance or substances classified in Category 1 aspiration toxicity hazard and has a kinematic viscosity of 20.5 $mm^2/s$ or less, measured at 40 °C. |
| **2** | 1. *Substances other than those classified in Category 1*<br>which, on the basis of animal studies and expert judgment are presumed to cause human aspiration toxicity and have a kinematic viscosity of 14 $mm^2/s$ or less, measured at 40 °C.<br>2. *If data for a mixture are not available,* use bridging principles in 3.10.3.2.<br>3. *If bridging principles do not apply,*<br>classify under aspiration hazard Category 2:<br>(a) Mixtures containing 10% or more of a substance or substances classified in Category 2 and having a kinematic viscosity of 14 $mm^2/s$ or less, measured at 40 °C;<br>(b) Mixtures which separate into two or more distinct layers, one of which contains 10% or more of a substance or substances classified in Category 2 aspiration toxicity hazard and has a kinematic viscosity of 14 $mm^2/s$ or less, measured at 40 °C. |

**A1.4 Classification summary tables for environmental hazards**

**A1.4.1 *Hazards to the aquatic environment***

**A1.4.1.1 *Acute hazards to the aquatic environment*** *(See Chapter 4.1 for details)*

| Hazard category | Acute hazards to the aquatic environment: Classification criteria |
|---|---|
| **1** | 1. *For substances and tested mixtures:*<br>$L(E)C_{50} \leq 1mg/l$<br>where $L(E)C_{50}$ is either fish 96hr $LC_{50}$, crustacea 48hr EC $LC_{50}$ or aquatic plant 72 or 96hr $ErC_{50}$.<br>2. *If data for a mixture are not available,* use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>(a) For mixtures with classified ingredients:<br>The summation method (see 4.1.3.5.5) reveals:<br>• [Concentration of Acute 1] × M > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>(b) For mixtures with tested ingredients:<br>The additivity formula (see 4.1.3.5.2 and 4.1.3.5.3) reveals:<br>• $L(E)C_{50} \leq 1mg/l$.<br>(c) For mixtures with both classified and tested ingredients:<br>The combined additivity formula and summation method (see 4.1.3.5.2 to 4.1.3.5.5.3) reveal:<br>• Concentration of Acute 1 × M > 25%.<br>4. *For mixtures with no usable information for one or more relevant ingredients,* classify using the available information and add the statement: "× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |

*Continued on next page*

| Hazard category | Acute hazards to the aquatic environment: Classification criteria *(cont"d)* |
|---|---|
| **2** | 1. *For substances and tested mixtures:*<br>$1mg/l < L(E)C_{50} \leq 10mg/l$<br>where $L(E)C_{50}$ is either fish 96hr $LC_{50}$,<br>crustacea 48hr EC $LC_{50}$ or<br>aquatic plant 72 or 96hr $ErC_{50}$.<br>2. *If data for a mixture are not available,* use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>(a) For mixtures with classified ingredients:<br>The summation method (see 4.1.3.5.5) reveals:<br>[Concentration of Acute 1] × M × 10 + (Concentration of Acute 2] > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>(b) For mixtures with tested ingredients:<br>The additivity formula (see 4.1.3.5.2 and 4.1.3.5.3) reveals:<br>$1mg/l < L(E)C_{50} \leq 10mg/l$.<br>(c) For mixtures with both classified and tested ingredients:<br>The combined additivity formula and summation method (see 4.1.3.5.2 to 4.1.3.5.5.3) reveal:<br>[Concentration of Acute 1] × M× 10 + [Concentration of Acute 2] > 25%.<br>4. *For mixtures with no usable information for one or more relevant ingredients,* classify using the available information and add the statement:<br>"× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |

*Continued on next page*

| Hazard category | Acute hazards to the aquatic environment: Classification criteria *(cont"d)* |
|---|---|
| **3** | 1. *For substances and tested mixtures:*<br>10mg/l < L(E)$C_{50}$ ≤ 100mg/l<br>where L(E)$C_{50}$ is either fish 96hr $LC_{50}$,<br>crustacea 48hr EC $LC_{50}$ or<br>aquatic plant 72 or 96hr $ErC_{50}$.<br>2. *If data for a mixture are not available,* use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>(~~d~~a)For mixtures with classified ingredients:<br>The summation method (see 4.1.3.5.5) reveals:<br>[Concentration of Acute 1] × M x 100 + [Concentration of Acute 2] × 10 + [Concentration of Acute 3] > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>(~~e~~b)For mixtures with tested ingredients:<br>The additivity formula (see 4.1.3.5.2 and 4.1.3.5.3) reveals:<br>10mg/l < L(E)$C_{50}$ ≤ 100mg/l.<br>(~~f~~c) For mixtures with both classified and tested ingredients:<br>The combined additivity formula and summation method (see 4.1.3.5.2 to 4.1.3.5.5.3) reveal:<br>[Concentration of Acute 1] × M × 100 + [Concentration of Acute 2] × 10 + [Concentration of Acute 3] > 25%.<br>4. *For mixtures with no usable information for one or more relevant ingredients,* classify using the available information and add the statement:<br>"× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |

**A1.4.1.2** ***Chronic hazards to the aquatic environment*** *(See Chapter 4.1 for details)*

| Hazard category | Chronic hazards to the aquatic environment : Classification criteria |
|---|---|
| **1** | 1. *For substances:*<br>- $L(E)C_{50} \leq 1$mg/l; and<br>- Lack the potential to rapidly biodegrade and/or have the potential to bioaccumulate (BCF ≥ 500 or if absent log Kow ≥ 4)<br>where $L(E)C_{50}$ is either fish 96hr $LC_{50}$,<br>crustacea 48hr EC $LC_{50}$ or<br>aquatic plant 72 or 96hr $ErC_{50}$.<br>2. *For mixtures,*<br>use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>[Concentration of Chronic 1] × M > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>4. *For mixtures with no usable information for one or more relevant ingredients,*<br>classify using the available information and add the statement:<br>"×percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |
| **2** | 1. For substances:<br>- 1 mg/l < $L(E)C_{50} \leq 10$ mg/l; and<br>- Lack the potential to rapidly biodegrade and/or have the potential to bioaccumulate (BCF ≥ 500 or if absent log Kow ≥ 4); unless<br>- Chronic NOECs > 1mg/l.<br>2. *For mixtures*,<br>use bridging (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>[Concentration of Chronic 1] × M × 10 + [Concentration of Chronic 2] > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>4. *For mixtures with no usable information for one or more relevant ingredients*,<br>classify using the available information and add the statement:<br>"× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |

*Continued on next page*

| Hazard category | Chronic hazards to the aquatic environment: Classification criteria *(cont"d)* |
|---|---|
| **3** | 1. *For substances:*<br>- 10 mg/l < L(E)$C_{50}$ ≤ 100 mg/l; and<br>- Lack the potential to rapidly biodegrade and/or have the potential to bioaccumulate (BCF ≥ 500 or if absent log Kow ≥ 4); unless<br>- Chronic NOECs > 1mg/l.<br>2. *For mixtures,*<br>use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>[Concentration of Chronic 1] × M × 100 + [Concentration of Chronic 2] × 10 + [Concentration of Chronic 3] > 25%<br>where M is a multiplying factor (see 4.1.3.5.5.5).<br>4. *For mixtures with no usable information for one or more relevant ingredients,* classify using the available information and add the statement:<br>"× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |
| **4** | 1. *For substances:*<br>- poorly soluble and no acute toxicity is observed up the water solubility<br>- Lack the potential to rapidly biodegrade and have the potential to bioaccumulate (BCF ≥ 500 or if absent log Kow ≥ 4); unless<br>- Chronic NOECs > 1mg/l.<br>2. *For mixtures,*<br>use bridging principles (see 4.1.3.4).<br>3. *If bridging principles do not apply,*<br>Sum of concentrations of components classified as Chronic 1, 2, 3 or 4 > 25%.<br>4. *For mixtures with no usable information for one or more relevant ingredients,* classify using the available information and add the statement:<br>"× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment". |

[

# ANNEX 2

# LABEL ELEMENTS

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# Annex 2

# SECTION 1

# GHS AND TDG PICTOGRAMS

## A2.1.1 Introduction

A2.1.1.1 ***Pictogram*** means a graphical composition that may include a symbol plus other graphic elements, such as a border, background pattern or colour that is intended to convey specific information.

***Symbol*** means a graphical element intended to succinctly convey information.

A2.1.1.2 Symbols that are used in pictograms are described in 1.4.10.3.

A2.1.1.3 The pictograms for each hazard class and hazard category of the GHS shall conform, in terms of colour, symbols and their general format, to the specimens shown. Pictograms shall be in the form of a square set at an angle of 45° (diamond shaped).

A2.1.1.4 The provisions applicable to pictograms in this section and paragraph 1.4.10.4 and its sub-paragraphs shall apply.

A2.1.1.5 Where a *UN Model Regulations on the Transport of Dangerous Goods* pictogram appears on a label, a GHS pictogram for the same hazard shall not appear.

A2.1.1.6 Pictograms prescribed by the GHS shall have a black symbol on a white background with a red frame[1] sufficiently wide to be clearly visible.

A2.1.1.7 TDG (Transport of Dangerous Goods) pictograms as prescribed by the *UN Model Regulations on the Transport of Dangerous Goods* shall be used for transport[2]. Where pictograms are used to comply with the requirements of transport regulations, the provisions of the transport regulations shall take precedence.

A2.1.1.8 GHS pictograms shall meet the requirements of A2.1.1.6. The tables in A2.1.2 for GHS pictograms contain 2 columns:

Column (1) An illustration of the pictogram and its reference number;
Column (2) The GHS hazard classes and hazard categories that the pictogram is used for.

A2.1.1.9 TDG pictograms shall be of minimum dimensions of 100 mm by 100 mm, except in the case of gases under pressure or of packages of such dimensions that they can only bear smaller labels. This section provides further information on TDG pictograms relating to the symbols used and their colour(s), background colour(s) and provisions relating to textual content. TDG pictograms shall have a

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[1] *When such a pictogram appears on a label for a package which will not be exported, the competent authority may choose to give suppliers and employers discretion to use a black border.*

[2] *Competent authorities may allow the use of UN Recommendations on the Transport of Dangerous Goods, Model Regulations pictograms in other use settings where the package is not covered by the Model Regulations.*

line of the same colour as the symbol, 5 mm inside the edge and running parallel with it. The tables in A2.1.3 for TDG pictograms contain 3 columns:

Column 1 An illustration of the pictogram and its reference number;

Column 2 A description of the colours used for the elements of the pictogram:

Column 3 The GHS hazard classes and hazard categories that the pictogram is used for.

**A2.1.2 GHS pictograms**

**A2.1.2.1 *Physical hazards***

A2.1.2.1.1 Symbol: Exploding bomb

| Pictogram (1) | Hazard class and hazard category (2) |
|---|---|
| GHS01  | Chapter 2.1<br>Unstable explosives<br>Explosives of Divisions 1.1, 1.2, 1.3, 1.4<br>Chapter 2.8<br>Self reactive substances and mixtures, Types A, B<br>Chapter 2.15<br>Organic peroxides, Types A, B |

A2.1.2.1.2 No symbol: Explosives

| Pictogram (1) | Hazard class and hazard category (2) |
|---|---|
| GHS01.5   | Chapter 2.1<br>Explosives of Division 1.5 |

| Pictogram (1) | Hazard class and hazard category (2) |
|---|---|
| GHS01.6   | Chapter 2.1<br>Explosives of Division 1.6 |

A2.1.2.1.3 Symbol: Flame

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS02<br>  | Chapter 2.2<br>Flammable gases, hazard category 1<br><br>Chapter 2.3<br>Flammable aerosols, hazard categories, 1, 2<br><br>Chapter 2.6<br>Flammable liquids, hazard categories 1, 2, 3<br><br>Chapter 2.7<br>Flammable solids, hazard categories 1, 2<br><br>Chapter 2.8<br>Self-reactive substances and mixtures, Types B, C, D, E, F<br><br>Chapter 2.9<br>Pyrophoric liquids, hazard category 1<br><br>Chapter 2.10<br>Pyrophoric solids, hazard category 1<br><br>Chapter 2.11<br>Self-heating substances and mixtures, hazard categories 1, 2, 3<br><br>Chapter 2.12<br>Substances and mixtures, which in contact with water, emit flammable gases, hazard categories 1, 2, 3<br><br>Chapter 2.15<br>Organic peroxides, Types B, C, D, E, F |

A2.1.2.1.4 Symbol: Flame over circle

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS03<br>  | Chapter 2.4<br>Oxidizing gases, hazard category 1<br><br>Chapter 2.13<br>Oxidizing liquids, hazard categories 1, 2, 3<br><br>Chapter 2.14<br>Oxidizing solids, hazard categories 1, 2, 3 |

A2.1.2.1.5 Symbol: Gas cylinder

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS04<br>  | Chapter 2.5<br>Gases under pressure:<br>Compressed gases;<br>Liquefied gases;<br>Refrigerated liquefied gases;<br>Dissolved gases |

A2.1.2.1.6 Symbol: Corrosion

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS05<br>  | Chapter 2.16<br>Corrosive to metals, hazard category 1 |

A2.1.2.1.7 A GHS pictogram is not required for the following physical hazard classes and hazard categories:

Chapter 2.2: Flammable gases, hazard category 2
Chapter 2.6: Flammable liquids, hazard category 4
Chapter 2.8: Self-reactive substances and mixtures, Type G
Chapter 2.15: Organic peroxides, Type G

**A2.1.2.2** ***Health hazards***

A2.1.2.2.1 Symbol: Skull and crossbones

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS06<br>  | Chapter 3.1<br>Acute toxicity (oral, dermal, inhalation), hazard categories 1, 2, 3 |

A2.1.2.2.2 Symbol: Corrosion

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS05<br>  | Chapter 3.2<br>Skin corrosion, hazard categories 1A, 1B, 1C<br><br>Chapter 3.3<br>Severe eye damage, hazard category 1 |

A2.1.2.2.3 Symbol: Exclamation mark

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS07<br>  | Chapter 3.1<br>Acute toxicity (oral, dermal, inhalation), hazard category 4<br><br>Chapter 3.2<br>Skin irritation, hazard category 2<br><br>Chapter 3.3<br>Eye irritation, hazard category 2A<br><br>Chapter 3.4<br>Skin sensitisation, hazard category 1<br><br>Chapter 3.8<br>Specific Target Organ Systemic Toxicity – Single exposure, hazard category 3<br>Respiratory tract irritation<br>Narcotic effects |

A2.1.2.2.4 Symbol: Health hazard

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS08<br>  | Chapter 3.4<br>Respiratory sensitization, hazard category 1<br><br>Chapter 3.5<br>Germ cell mutagenicity, hazard categories 1A, 1B, 2<br><br>Chapter 3.6<br>Carcinogenicity, hazard categories 1A, 1B, 2<br><br>Chapter 3.7<br>Reproductive toxicity, hazard categories 1A, 1B, 2<br><br>Chapter 3.8<br>Specific Target Organ Systemic Toxicity – Single exposure, hazard categories 1, 2<br><br>Chapter 3.9<br>Specific Target Organ Systemic Toxicity – Repeated exposure, hazard categories 1, 2<br><br>Chapter 3.10<br>Aspiration hazard, hazard categories 1, 2 |

A2.1.2.2.5 A GHS pictogram is not required for the following health hazard classes and hazard categories:

Chapter 3.1: Acute toxicity (oral, dermal, inhalation), hazard category 5
Chapter 3.2: Skin irritation, hazard category 3
Chapter 3.3: Eye irritation, hazard category 2B
Chapter 3.7: Reproductive toxicity, Effects on or via lactation, additional hazard category

**A2.1.2.3** ***Environmental hazards***

A2.1.2.3.1 Symbol: Environment

| Pictogram<br>(1) | Hazard class and hazard category<br>(2) |
|---|---|
| GHS09<br>  | Chapter 4.1<br>Hazardous to the aquatic environment<br>– Acute toxicity, hazard category 1<br>– Chronic toxicity, hazard categories 1, 2 |

A2.1.2.3.2 A GHS pictogram is not required for the following environmental hazard classes and hazard categories:

Chapter 4.1: Hazardous to the aquatic environment – Acute toxicity, hazard categories 2, 3

Chapter 4.1: Hazardous to the aquatic environment – Chronic toxicity, hazard categories 3, 4

**A2.1.3 TDG pictograms**

**A2.1.3.1 *Physical hazards***

A2.1.3.1.1 Symbol: Exploding bomb

(a)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.8<br>Self reactive substances and mixtures, Type B<br>Chapter 2.15<br>Organic peroxides, Type B |
| Notes on use | | |
| Under the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations,* special provision 181 may apply (Exemption of explosive pictogram with competent authority approval. See Chapter 3.3 of *UN Model Regulations* for more details). | | |

(b)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.1<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosives of Division 1.1<br>Chapter 2.8<br>Self Reactive substances and mixtures, Type A<br>Chapter 2.15<br>Organic Peroxides, Type A |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>Place for Compatibility Group (*), to be left blank if explosive is the subsidiary risk. | | |

(c)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.2<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosives of Division 1.2<br>Chapter 2.8<br>Self reactive substances and mixtures, Type A<br>Chapter 2.15<br>Organic peroxides, Type A |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>Place for Compatibility Group (*), to be left blank if explosive is the subsidiary risk. | | |

(d)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.3<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosives of Division 1.3<br>Chapter 2.8<br>Self reactive substances and mixtures, Type A<br>Chapter 2.15<br>Organic peroxides, Type A |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>Place for compatibility group (*), to be left blank if explosive is the subsidiary risk. | | |

A2.1.3.1.2 No symbol: Explosives

(a)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.4<br>  | Figures:<br>"1.4": black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosives of Division 1.4 |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>When used as a transport pictogram, the numerals 1.4 shall be about 30 mm in height and be about 5 mm thick (for a pictogram measuring 100 mm ×100 mm) | | |

(b)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.5<br>  | Figures:<br>"1.5": black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosives of Division 1.5 |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>When used as a transport pictogram, the numerals 1.5 shall be about 30mm in height and be about 5 mm thick (for a pictogram measuring 100 mm × 100 mm) | | |

(c)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG1.6<br>  <br> | Figures:<br>"1.6": black;<br>Background colour:<br>orange;<br>Figure in bottom corner:<br>"1": black; | Chapter 2.1<br>Explosive articles of Division 1.6 |
| Notes on use | | |
| Division to be left blank if explosive is the subsidiary risk.<br>When used as a transport pictogram, the numerals 1.6 shall be about 30 mm in height and be about 5 mm thick (for a pictogram measuring 100 mm × 100 mm) | | |

A2.1.3.1.3 Symbol: Flame

(a)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG2.1<br>  <br><br>  <br> | Symbol colour:<br>black or white;<br>Background colour:<br>red;<br>Figure in bottom corner:<br>"2": black or white; | Chapter 2.2<br>Flammable gases, hazard category 1<br>Chapter 2.3<br>Flammable aerosols, hazard categories 1, 2 |

(b)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG3<br>  <br><br><br> | Symbol colour:<br>black or white;<br>Background colour:<br>red;<br>Figure in bottom corner:<br>"3": black or white; | Chapter 2.6<br>Flammable liquids,<br>hazard categories 1, 2, 3 |
| Notes on use | | |
| Subsidiary risk pictogram TDG3 not required if pictogram TDG5.2 is assigned | | |

(c)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG4.1<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>white with seven vertical red stripes;<br>Figure in bottom corner:<br>"4": black; | Chapter 2.7<br>Flammable solids,<br>hazard categories 1, 2<br>Chapter 2.8<br>Self-reactive substances and mixtures,<br>Types B, C, D, E, F |
| Notes on use | | |
| Subsidiary risk pictogram TDG4.1 not required if pictogram TDG4.2 is assigned. | | |

(d)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG4.2<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>upper half white;<br>lower half red;<br>Figure in bottom corner:<br>"4": black; | Chapter 2.9<br>Pyrophoric liquids, hazard category 1<br>Chapter 2.10<br>Pyrophoric solids, hazard category 1<br>Chapter 2.11<br>Self-heating substances and mixtures, hazard categories 1, 2 |
| Notes on use | | |
| Subsidiary risk pictogram TDG4.1 not required if pictogram TDG4.2 is assigned. | | |

(e)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG4.3<br>  <br><br>  <br> | Symbol colour:<br>black or white;<br>Background colour:<br>blue;<br>Figure in bottom corner:<br>"4": black or white; | Chapter 2.12<br>Substances and mixtures, which in contact with water, emit flammable gases, hazard categories 1, 2, 3 |

(f)

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG5.2<br>  <br><br><br> | Symbol colour:<br>black or white;<br>Background colour:<br>upper half red;<br>lower half yellow<br>Figure in bottom corner:<br>"5.2": black or white; | Chapter 2.15<br>Organic peroxides, Types B, C, D, E, F |
| Notes on use | | |
| Subsidiary risk pictogram TDG3 not required if pictogram TDG5.2 is assigned | | |

A2.1.3.1.4 Symbol: Flame over circle

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG5.1<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>yellow<br>Figure in bottom corner:<br>"5.1": black; | Chapter 2.4<br>Oxidizing gases, hazard category 1<br>Chapter 2.13<br>Oxidizing liquids, hazard categories 1, 2, 3<br>Chapter 2.14<br>Oxidizing solids, hazard categories 1, 2, 3 |

A2.1.3.1.5 Symbol: Gas cylinder

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG2.2<br>  <br><br>  <br> | Symbol colour:<br>black or white;<br>Background colour:<br>green<br>Figure in bottom corner:<br>"2": black or white; | Chapter 2.5<br>Gases under pressure:<br>Compressed gases;<br>Liquefied gases;<br>Refrigerated liquefied gases;<br>Dissolved gases |
| Notes on use | | |
| This Pictogram is not required for toxic or flammable gases in the *UN RTDG Model Regulations*. | | |

A2.1.3.1.6 Symbol: Corrosion

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG8<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>upper half white;<br>lower half black with white border;<br>Figure in bottom corner:<br>"8": black; | Chapter 2.16<br>Corrosive to metals, hazard category 1 |
| Notes on use | | |
| Subsidiary risk pictogram TDG6.1 not required if the toxicity arises solely from the destructive effect on tissue. | | |

A2.1.3.1.7 A TDG pictogram is not required under the *UN RTDG Model Regulations* for the following physical hazard classes and/or hazard categories;

Chapter 2.2: Flammable gases, hazard category 2
Chapter 2.6: Flammable liquids, hazard category 4
Chapter 2.8: Self-reactive substances and mixtures, Type G
Chapter 2.15: Organic peroxides, Type G

**A2.1.3.2 *Health hazards***

A2.1.3.2.1 Symbol: Skull and crossbones

**(a)**

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG6.1<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>white;<br>Figure in bottom corner:<br>"6": black; | Chapter 3.1<br>Acute toxicity (oral), hazard categories 1, 2, 3<br>Acute toxicity (dermal), hazard categories 1, 2, 3<br>Acute toxicity (inhalation: vapours, dusts and mists), hazard categories 1, 2, 3 |

**(b)**

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG2.3<br>  <br> | Symbol colour:<br>black;<br>Background colour:<br>white;<br>Figure in bottom corner:<br>"2": black; | Chapter 3.1<br>Acute toxicity (inhalation: gases), hazard categories 1, 2, 3 |

A2.1.3.2.2 Symbol: Corrosion

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG8<br>  <br> | Symbol colour:<br>black;<br><br>Background colour:<br>upper half white;<br>lower half black with white border;<br><br>Figure in bottom corner:<br>"8": black; | Chapter 3.2<br>Skin corrosion, hazard categories 1A, 1B, 1C<br><br>Chapter 3.3[a]<br>Severe eye damage, hazard category 1 |
| Notes on use | | |
| Subsidiary risk pictogram TDG6.1 not required if the toxicity arises solely from the destructive effect on tissue. | | |

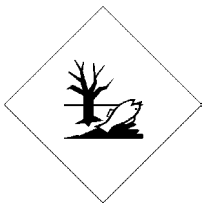
[a] *Not applicable for the purposes of the Recommendations on the Transport of Dangerous Goods, Model Regulations.*

A2.1.3.2.3 The following health hazard classes and hazard categories are not applicable for the *UN RTDG Model Regulations:*

Chapter 3.1: Acute toxicity (oral), hazard categories 4, 5
Chapter 3.1: Acute toxicity (dermal), hazard categories 4, 5
Chapter 3.1: Acute toxicity (inhalation – vapours, dusts and mists, gases), hazard categories 4, 5
Chapter 3.2: Skin irritation, hazard categories 2, 3
Chapter 3.3: Serious eye damage/eye irritation, hazard categories 1, 2A, 2B
Chapter 3.4: Respiratory sensitization, hazard category 1
Skin sensitization, hazard category 1
Chapter 3.5: Germ cell mutagenicity, hazard categories 1A, 1B, 2
Chapter 3.6: Carcinogenicity, hazard categories 1A, 1B, 2
Chapter 3.7: Reproductive toxicity, hazard categories 1A, 1B, 2
Effects on or via lactation, additional hazard category
Chapter 3.8: Specific Target Organ Systemic Toxicity – Single exposure, hazard categories 1, 2
Respiratory Tract Irritation, hazard category 3
Narcosis, hazard category 3
Chapter 3.9: Specific Target Organ Systemic Toxicity – Repeated exposure, hazard categories 1, 2
Chapter 3.10: Aspiration hazard, hazard categories 1, 2

### A2.1.3.3 Environmental hazards

A2.1.3.3.1 Symbol: Environment

| Pictogram<br>(1) | Description<br>(2) | Hazard class and hazard category<br>(3) |
|---|---|---|
| TDG-ENV<br>  | Symbol colour:<br>black;<br>Background colour:<br>white;<br>Border:<br>black; | Chapter 4.1<br>Hazardous to the aquatic environment:<br>Acute Toxicity, hazard category 1<br>Chronic Toxicity, hazard categories 1, 2 |
| Notes on use | | |
| For Category 1, (Acute) and Categories 1 and 2 (Chronic) under the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations* the pictogram is not required if the substance presents any other hazards covered by *UN Model Regulations*. If no other hazard is presented (i.e. for UN Nos. 3077 and 3082 in Class 9 of the *UN Model Regulations)*, this pictogram is required as a mark in addition to the *UN Model Regulations* Class 9 label. | | |

A2.1.3.3.2 The following environmental hazard classes and hazard categories are not applicable for the *UN RTDG Model Regulations:*

Chapter 4.1: Hazardous to the aquatic environment: Acute toxicity, hazard categories 2, 3

Chapter 4.1: Hazardous to the aquatic environment: Chronic toxicity, hazard categories 3, 4

# Annex 2

# SECTION 2

# CODIFICATION OF HAZARD STATEMENTS

## A2.2.1 Introduction

A2.2.1.1 ***Hazard statement*** means a statement assigned to a hazard class and category that describes the nature of the hazards of a hazardous product, including, where appropriate, the degree of hazard.

A2.2.1.2 This section contains the codes assigned to each of the hazard statements applicable to the hazard categories defined under the GHS.

A2.2.1.3 The hazard statement codes shall only be used for reference purposes and shall neither form part of the hazard statement text that appears on a GHS label, nor replace it.

## A2.2.2 Codification of hazard statements

A2.2.2.1 Hazard statements are assigned a unique alphanumerical code which consists of one letter and three numbers, as follows:

(a) the letter "H" (for "hazard statement");

(b) a number designating the type of hazard to which the hazard statement is assigned according to the numbering of the different parts of the GHS, as follows:

- "2" for physical hazards;
- "3" for health hazards:
- "4" for environmental hazards;

(c) two numbers corresponding to the sequential numbering of hazards arising from the intrinsic properties of the substance or mixture, such as explosivity (codes from 200 to 210), flammability (codes from 220 to 230), etc.

A2.2.2.2 The codes to be used for designating hazard statements are listed, in numerical order, in Table A2.2.1 for physical hazards, Table A2.2.2 for health hazards and Table A2.2.3 for environmental hazards. Each table is divided into 4 columns containing the following information:

Column (1) The hazard statement code;

Column (2) The hazard statement text;

The text in bold is the text that shall appear on the label, except otherwise specified. The text in italics enclosed within brackets provides extra information

that can be specified. In such cases, the manufacturer or supplier can choose, or the competent authorities may prescribe the most appropriate phrase.

For example: "**causes damages to organs** *(or state all organs affected, if known)* **through prolonged or repeated exposure** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)".*

Column (3) Hazard class, with a reference to the chapter of the GHS where information about the hazard class may be found.

Column (4) The hazard category or categories within a hazard class for which the use of a hazard statement is applicable.

**Table A2.2.1 Hazard statement codes for physical hazards**

| Code<br><br>(1) | Physical hazard statements<br><br>(2) | Hazard class (GHS chapter)<br><br>(3) | Hazard category<br><br>(4) |
|---|---|---|---|
| H201 | **Unstable explosive** | Explosives (chapter 2.1) | Unstable Explosive |
| H202 | **Explosive; mass explosion hazard** | Explosives (chapter 2.1) | Division 1.1 |
| H203 | **Explosive; severe projection hazard** | Explosives (chapter 2.1) | Division 1.2 |
| H204 | **Explosive; fire, blast or projection hazard** | Explosives (chapter 2.1) | Division 1.3 |
| H205 | **Fire or projection hazard** | Explosives (chapter 2.1) | Division 1.4 |
| H206 | **May mass explode in fire** | Explosives (chapter 2.1) | Division 1.5 |
| | | | |
| H220 | **Extremely flammable gas** | Flammable gases (chapter 2.2) | 1 |
| H221 | **Flammable gas** | Flammable gases (chapter 2.2) | 2 |
| H222 | **Extremely flammable aerosol** | Flammable aerosols (chapter 2.3) | 1 |
| H223 | **Flammable aerosol** | Flammable aerosols (chapter 2.3) | 2 |
| H224 | **Extremely flammable liquid and vapour** | Flammable liquids (chapter 2.6) | 1 |
| H225 | **Highly flammable liquid and vapour** | Flammable liquids (chapter 2.6) | 2 |
| H226 | **Flammable liquid and vapour** | Flammable liquids (chapter 2.6) | 3 |
| H227 | **Combustible liquid** | Flammable liquids (chapter 2.6) | 4 |
| H228 | **Flammable solid** | Flammable solids (chapter 2.7) | 1, 2 |
| | | | |

| Code<br><br>(1) | Physical hazard statements<br><br>(2) | Hazard class (GHS chapter)<br><br>(3) | Hazard category<br><br>(4) |
|---|---|---|---|
| H240 | **Heating may cause an explosion** | Self-reactive substances and mixtures (chapter 2.8); and<br>Organic peroxides (chapter 2.15) | Type A |
| H241 | **Heating may cause a fire or explosion** | Self-reactive substances and mixtures (chapter 2.8); and<br>Organic peroxides (chapter 2.15) | Type B |
| H242 | **Heating may cause a fire** | Self-reactive substances and mixtures (chapter 2.8); and<br>Organic peroxides (chapter 2.15) | Types<br>C, D, E, F |
| | | | |
| H250 | **Catches fire spontaneously if exposed to air** | Pyrophoric liquids (chapter 2.9);<br>Pyrophoric Solids (chapter 2.10) | 1 |
| H251 | **Self-heating; may catch fire** | Self-heating substances and mixtures (chapter 2.11) | 1 |
| H252 | **Self-heating in large quantities; may catch fire** | Self-heating substances and mixtures (chapter 2.11) | 2 |
| | | | |
| H260 | **In contact with water releases flammable gases which may ignite spontaneously** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1 |
| H261 | **In contact with water releases flammable gas** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 2, 3 |
| | | | |
| H270 | **May cause or intensify fire; oxidizer** | Oxidizing gases (chapter 2.4) | 1 |
| H271 | **May cause fire or explosion; strong oxidizer** | Oxidizing liquids (chapter 2.13);<br>Oxidizing solids (chapter 2.14) | 1 |
| H272 | **May intensify fire; oxidizer** | Oxidizing liquids (chapter 2.13);<br>Oxidizing solids (chapter 2.14) | 2, 3 |
| | | | |
| H280 | **Contains gas under pressure; may explode if heated** | Gases under pressure (chapter 2.5) | Compressed gas<br>Liquefied gas<br>Dissolved gas |
| H281 | **Contains refrigerated gas; may cause cryogenic burns or injury** | Gases under pressure (chapter 2.5) | Refrigerated liquefied gas |
| | | | |
| H290 | **May be corrosive to metals** | Corrosive to metals (Chapter 2.16) | 1 |

**Table A2.2.2 Hazard statement codes for health hazards**

| Code (1) | Health hazard statements (2) | Hazard class (GHS chapter) (3) | Hazard category (4) |
|---|---|---|---|
| H301 | **Fatal if swallowed** | Acute toxicity – oral (chapter 3.1) | 1, 2 |
| H302 | **Toxic if swallowed** | Acute toxicity – oral (chapter 3.1) | 3 |
| H303 | **Harmful if swallowed** | Acute toxicity – oral (chapter 3.1) | 4 |
| H304 | **May be harmful if swallowed** | Acute toxicity – oral (chapter 3.1) | 5 |
| H305 | **May be fatal if swallowed and enters airways** | Aspiration hazard (chapter 3.10) | 1 |
| H306 | **May be harmful if swallowed and enters airways** | Aspiration hazard (chapter 3.10) | 2 |
| | | | |
| H310 | **Fatal in contact with skin** | Acute toxicity – dermal (chapter 3.1) | 1, 2 |
| H311 | **Toxic in contact with skin** | Acute toxicity – dermal (chapter 3.1) | 3 |
| H312 | **Harmful in contact with skin** | Acute toxicity – dermal (chapter 3.1) | 4 |
| H313 | **May be harmful in contact with skin** | Acute toxicity – dermal (chapter 3.1) | 5 |
| H314 | **Causes severe skin burns and eye damage** | Skin corrosion/irritation (chapter 3.2) | 1A, 1B, 1C |
| H315 | **Causes skin irritation** | Skin corrosion/irritation (chapter 3.2) | 2 |
| H316 | **Causes mild skin irritation** | Skin corrosion/irritation (chapter 3.2) | 3 |
| H317 | **May cause an allergic skin reaction** | Skin sensitisation (chapter 3.4) | 1 |
| H318 | **Causes serious eye damage** | Serious eye damage/eye irritation (chapter 3.3) | 1 |
| H319 | **Causes serious eye irritation** | Serious eye damage/eye irritation (chapter 3.3) | 2A |
| H320 | **Causes eye irritation** | Serious eye damage/eye irritation (chapter 3.3) | 2B |
| | | | |
| H330 | **Fatal if inhaled** | Acute toxicity – inhalation (chapter 3.1) | 1, 2 |
| H331 | **Toxic if inhaled** | Acute toxicity – inhalation (chapter 3.1) | 3 |

| Code (1) | Health hazard statements (2) | Hazard class (GHS chapter) (3) | Hazard category (4) |
|---|---|---|---|
| H332 | **Harmful if inhaled** | Acute toxicity – inhalation (chapter 3.1) | 4 |
| H333 | **May be harmful if inhaled** | Acute toxicity – inhalation (chapter 3.1) | 5 |
| H334 | **May cause allergy or asthma symptoms or breathing difficulties if inhaled** | Respiratory sensitisation (chapter 3.4) | 1 |
| H335 | **May cause respiratory irritation** | Specific target organ systemic toxicity – single exposure; Respiratory tract Irritation (chapter 3.8); | 3 |
| H336 | **May cause drowsiness or dizziness** | Specific target organ systemic toxicity – single exposure; Narcosis (chapter 3.8) | 3 |
| | | | |
| H350 | **May cause genetic defects** (*state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Germ cell mutagenicity (chapter 3.5) | 1A, 1B |
| H351 | **Suspected of causing genetic defects** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Germ cell mutagenicity (chapter 3.5) | 2 |
| H352 | **May cause cancer** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Carcinogenicity (chapter 3.6) | 1A, 1B |
| H353 | **Suspected of causing cancer** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Carcinogenicity (chapter 3.6) | 2 |
| H354 | **May damage fertility or the unborn child** *(state specific effect if known (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Reproductive toxicity (chapter 3.7) | 1A, 1B |
| H355 | **Suspected of damaging fertility or the unborn child** *(state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Reproductive toxicity (chapter 3.7) | 2 |

| Code (1) | Health hazard statements (2) | Hazard class (GHS chapter) (3) | Hazard category (4) |
|---|---|---|---|
| H356 | **May cause harm to breast-fed children** | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category |
| H360 | **Causes damage to organs** *(or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1 |
| H361 | **May cause damage to organs** *(or state all organs affected, if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 2 |
| H362 | **Causes damage to organs** *(or state all organs affected, if known)* **through prolonged or repeated exposure** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Specific target organ systemic toxicity – repeated exposure (chapter 3.9) | 1 |
| H363 | **May cause damage to organs** *(or state all organs affected, if known)* **through prolonged or repeated exposure** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)* | Specific target organ systemic toxicity – repeated exposure (chapter 3.9) | 2 |

**Table A2.2.3 Hazard statement codes for environmental hazards**

| Code (1) | Environmental hazard statements (2) | Hazard class (GHS chapter) (3) | Hazard category (4) |
|---|---|---|---|
| H401 | **Very toxic to aquatic life** | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 1 |
| H402 | **Toxic to aquatic life** | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 2 |
| H403 | **Harmful to aquatic life** | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 3 |
| | | | |
| H410 | **Very toxic to aquatic life with long lasting effects** | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 1 |
| H411 | **Toxic to aquatic life with long lasting effects** | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 2 |
| H412 | **Harmful to aquatic life with long lasting effects** | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 3 |
| H413 | **May cause long lasting harmful effects to aquatic life** | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 4 |

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# Annex 2

# SECTION 3

# CODIFICATION AND USE OF PRECAUTIONARY STATEMENTS

## A2.3.1 Introduction

A2.3.1.1 A **Precautionary statement** is a phrase (and/or pictogram) which describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposures to a hazardous product, or improper storage or handling of a hazardous product (para 1.4.10.5.2(c)).

A2.3.1.2 Precautionary statements have not yet been fully harmonized[1]. This section provides recommendations and guidance on the use and codification of precautionary statements consistent with the GHS, including advice on the selection of appropriate statements for each GHS hazard class and category.

A2.3.1.3 The starting point for assigning precautionary statements is the hazard classification of the chemical product. The system of classifying hazards in the GHS is based on the intrinsic properties of the chemicals involved (see 1.3.2.2.1). In some systems, however, labelling may not be required for chronic hazards on consumer product labels, if information shows that the respective risks can be excluded under conditions of normal handling, normal use or foreseeable misuse (see Annex 5). If certain hazard statements are not required then the corresponding precautionary statements are also not necessary (see A5.1.1).

A2.3.1.4 The guidance for assigning the precautionary statements in this section has been developed to provide the essential minimum precautionary statements linking them with relevant GHS hazard classification criteria and type of hazard. Existing precautionary statements have been used to the maximum extent as the basis for the development of this section. These existing systems have included the IPCS International Chemical Safety Card (ICSC) Compilers Guide, the American National Standards (ANSI Z129.1), the EU classification and labelling directives, the Emergency Response Guidebook (ERG 2004), and U.S. Environmental Protection Agency Pesticide Label Review Manual.

A2.3.1.5 The goal of this section is to promote a more consistent use of precautionary statements. Their use will reinforce safe handling procedures and will enable the key concepts and approaches to be emphasized in training and education activities, while their codification will facilitate their translation and computerization.

A2.3.1.6 This section should be seen as a living document and therefore subject to further refinement and development over time. The basic concepts of this section and the philosophy given below will remain.

A2.3.1.7 For the purposes of this section, there are five types of precautionary statements: **general, prevention**, **response** (in case of accidental spillage or exposure, emergency response and first aid)**, storage** and **disposal.**

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[1] *See 1.4.6.2. Additional work to achieve greater standardization in this area may be undertaken in the future, once countries have gained greater experience with the system.*

### A2.3.2 Codification of precautionary statements

A2.3.2.1 Precautionary statements are assigned a unique alphanumerical code which consists of one letter and three numbers as follows:

(a) a letter "P" (for "precautionary statement")

(b) one number designating the type of precautionary statement as follows:

- "1" for general precautionary statements;
- "2" for prevention precautionary statements;
- "3" for response precautionary statements;
- "4" for storage precautionary statements;
- "5" for disposal precautionary statements;

(c) two numbers (corresponding to the sequential numbering of precautionary statements).

A2.3.2.2 The precautionary statement codes shall only be used for reference purposes and shall neither form part of the precautionary statement text that appears on a GHS label, nor replace it.

A2.3.2.3 The codes to be used for designating precautionary statements are listed, in numerical order, in Table A2.3.1 for general precautionary statements, Table A2.3.2 for prevention precautionary statements, Table A2.3.3 for response precautionary statements, Table A2.3.4 for storage precautionary statements and Table A2.3.5 for disposal precautionary statements.

### A2.3.3 Structure of the precautionary statement tables

A2.3.3.1 Each table is divided into 5 columns containing the following information:

Column (1) The precautionary statement code;

Column (2) The precautionary statement text;

Column (3) The hazard class and the route of exposure, where relevant, for which the use of a precautionary statement is recommended together with a reference to the chapter of the GHS where information about the hazard class may be found.

Column (4) The hazard category or categories within a hazard class for which the use of a precautionary statement is applicable.

Column (5) Where applicable, conditions relating to the use of a precautionary statement.

A2.3.3.2 The tables show the **core part of the precautionary statements in bold print** in column (2). This is the text, except as otherwise specified, that should appear on the label. Derogations from the recommended labelling statements are at the discretion of competent authorities.

A2.3.3.3 When a backslash or diagonal mark [/] appears in a precautionary statement text in column (2), it indicates that a choice has to be made between the phrases they separate. For example in P280 "**Wear protective gloves/protective clothing/eye protection/face protection**" could read "**Wear eye protection**". In such cases, the manufacturer or supplier can choose, or the competent authorities may prescribe the most appropriate phrase(s).

A2.3.3.4 When three full stops [**…**] appears in a precautionary statement text in column (2), they indicate that all applicable conditions are not listed. For example in P241 "**Use explosion-proof electrical/ventilating/lighting/.../equipment."**, the use of "**...**" indicates that other equipment may need to be specified. Further details of the information to be provided may be found in column (5). In such cases the manufacturer or supplier can choose, or the competent authorities may prescribe the other conditions to be specified.

A2.3.3.5 In cases where additional information is required or information has to be specified, this is indicated by a relevant entry in column (5) in plain text.

A2.3.3.6 When *text in italics* is used in column (5), this indicates specific conditions applying to the use or allocation of the precautionary statement. This may be conditions attaching to either the general use of a precautionary statement or its use for a particular hazard class and/or hazard category. For example, for P241 "**Use explosion-proof electrical/ventilating/lighting/.../equipment**", only applies for flammable solids "*if dust clouds can occur*".

A2.3.3.7 To facilitate translation into the languages of users, precautionary statements have been broken down into individual sentences in the tables in this section. In a number of instances the text that appears on a GHS label requires that these be added back together. This is indicated in this annex by codes conjoined with a plus sign [+]. For example P305 + P351 + P338 indicates that the text to appear on the label is "**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing**". These additive precautionary statements can also be found at the end of each of the precautionary statement tables in this section. Translation of only the single precautionary statements is required, as this will enable the compilation of the additive precautionary statements.

### A2.3.4 Allocation of precautionary statements

A2.3.4.1 This section guides the selection of appropriate precautionary statements. It includes elements for all categories of precautionary action. All specific elements relating to particular hazard classes should be used. General elements not linked in particular to a certain hazard class or category should also be used.

A2.3.4.2 To provide flexibility in the application of precautionary statements, a combination of statements is encouraged to save label space and improve their readability. Combination of phrases can also be useful for different types of hazard where the precautionary behaviour is similar**.** For example: "Keep away from heat, sparks and open flame and store in a cool well ventilated place".

A2.3.4.3 Precautionary statements should appear on GHS-consistent labels along with the GHS-harmonized hazard communication elements (pictograms, signal words and hazard statements). Additional supplemental information, such as directions for use, may also be provided at the discretion of the manufacturer/supplier and/or competent authority (see Chapter 1.2 and Chapter 1.4, sub-section 1.4.6.3). For some specific chemicals, supplementary first aid, treatment measures or specific antidotes

or cleansing materials may be required. Poisons Centres and/or medical practitioners or specialist advice should be sought in such situations and included on labels.

A2.3.4.4 In the majority of cases, the recommended precautionary statements are independent, e.g. the phrases for explosive hazard do not modify those related to certain health hazards and products that are classified for both hazard classes should bear appropriate precautionary statements for both.

A2.3.4.5 Where a substance or mixture is classified for a number of health hazards, generally the most stringent set of precautionary statements should be selected. This applies mainly for the preventive measures. With respect to phrases concerning "Response", rapid action may be crucial. For example, if a chemical is carcinogenic and acutely toxic then the first aid measures for acute toxicity will take precedence over those for longer term effects. In addition, medical attention to delayed health effects may be required in cases of incidental exposure, even if not associated with immediate symptoms of intoxication.

A2.3.4.6 To protect people with different reading abilities, it might be useful to include both precautionary pictograms and precautionary statements in order to convey information in more than one way (see 1.4.4.1 (a)). It should be noted, however, that the protective effect of pictograms is limited and the examples (see A2.4.1) do not cover all precautionary aspects to be addressed. While pictograms can be useful, they can be misinterpreted and are not a substitute for training.

### A2.3.5 General precautionary measures

A2.3.5.1 General precautionary measures should be adopted for all substances and mixtures which are classified as hazardous to human health or the environment. To this end, the needs of and the information sources available to three groups of users or applicators should be taken into account: the general public, the commercial user and the industrial worker.

A2.3.5.2 The presumed observation of precautionary label information, specific safety guidelines, and the safety data sheet for each product before use are part of the labelling requirements and occupational health and safety procedures.

A2.3.5.3 In order to correctly implement precautionary measures concerning prevention, response, storage and disposal, it is also necessary to have information on the composition of products at hand, so that information shown on the container, label and safety data sheet can be taken into account when asking for further specialist advice.

A2.3.5.4 The following general precautionary statements on the GHS label are appropriate under the given conditions:

| | | | |
|---|---|---|---|
| General public | GHS label, Supplemental label information | **P102**<br>**P103**<br>**P101** | **Keep out of reach of children.**<br>**Read label before use.**<br>**If medical advice is needed: Have product container or label at hand.** |
| Industrial worker | GHS label, Supplemental label information, Safety Data Sheet, workplace Instructions | | *none of the above* |

**Table A2.3.1 Codification of general precautionary statements**

| Code (1) | General precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P101 | **If medical advice is needed, have product container or label at hand.** | | | Consumer products |
| P102 | **Keep out of reach of children.** | | | Consumer products |
| P103 | **Read label before use.** | | | Consumer products |

**Table A2.3.2 Codification of prevention precautionary statements**

| Code (1) | Prevention precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P201 | **Obtain special instructions before use.** | Explosives (chapter 2.1) | Unstable explosive | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| P202 | **Do not handle until all safety precautions have been read and understood.** | Explosives (chapter 2.1) | Unstable explosive | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| P210 | **Keep away from heat/sparks/open flames/hot surfaces. – No smoking.** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | **...** Manufacturer/supplier or the competent authority to specify applicable ignition source(s). |
| | | Flammable gases (chapter 2.2) | 1, 2 | |
| | | Flammable aerosols (chapter 2.3) | 1, 2 | |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Flammable solids (chapter 2.7) | 1, 2 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | Flammable liquids (chapter 2.6) | 4 | - *specify to keep away from flames and hot surfaces.* |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | - *specify to keep away from heat.* |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| P211 | **Do not spray on an open flame or other ignition source.** | Flammable aerosols (chapter 2.3) | 1, 2 | |
| P220 | **Keep/Store away from clothing/.../combustible materials.** | Oxidizing gases (chapter 2.4) | 1 | **...** Manufacturer/supplier or the competent authority to specify incompatible materials. |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Oxidizing liquids (chapter 2.13) | 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 2, 3 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | Oxidizing liquids (chapter 2.13) | 1 | **...** Manufacturer/supplier or the competent authority to specify incompatible materials.<br>- *specify to keep away from clothing as well as other incompatible materials.* |
| | | Oxidizing solids (chapter 2.14) | 1 | |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| P221 | **Take any precaution to avoid mixing with combustibles/...** | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | **...** Manufacturer/supplier or the competent authority to specify incompatible materials. |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| P222 | **Do not allow contact with air.** | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| P223 | **Keep away from any possible contact with water, because of violent reaction and possible flash fire.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2 | |
| | | | | |
| P230 | **Keep wetted with ...** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.5 | **...** Manufacturer/supplier or the competent authority to specify appropriate material.<br>- *if drying out increases explosion hazard, except as needed for manufacturing or operating processes (e.g. nitrocellulose).* |
| P231 | **Handle under inert gas.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P232 | **Protect from moisture.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P233 | **Keep container tightly closed.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3 | - *if product is volatile so as to generate hazardous atmosphere.* |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| P234 | **Keep only in original container.** | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | Substances and mixtures corrosive to metals (chapter 2.16) | 1 | |
| P235 | **Keep cool.** | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | | | |
| P240 | **Ground/bond container and receiving equipment.** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | - *if the explosive is electrostatically sensitive.* |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3 | - *if electrostatically sensitive material is for reloading.*<br>- *if product is volatile so as to generate hazardous atmosphere.* |
| | | Flammable solids (chapter 2.7) | 1, 2 | - *if electrostatically sensitive material is for reloading.* |
| P241 | **Use explosion-proof electrical/ventilating/lighting/.../ equipment.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | **…** Manufacturer/supplier or the competent authority to specify other equipment. |
| | | Flammable solids (chapter 2.7) | 1, 2 | **...** Manufacturer/supplier or the competent authority to specify other equipment.<br>- *if dust clouds can occur.* |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| P242 | **Use only non-sparking tools.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| P243 | **Take precautionary measures against static discharge.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| P244 | **Keep reduction valves free from grease and oil.** | Oxidizing gases (chapter 2.4) | 1 | |
| | | | | |
| P250 | **Do not subject to grinding/shock/…/friction.** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | **...** Manufacturer/supplier or the competent authority to specify applicable rough handling. |
| P251 | **Pressurized container: Do not pierce or burn, even after use.** | Flammable aerosols (chapter 2.3) | 1, 2 | |
| | | | | |
| P260 | **Do not breathe dust/fume/gas/mist/vapours/spray.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2 | Manufacturer/supplier or the competent authority to specify applicable conditions. |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |
| | | Specific target organ systemic toxicity – prolonged or repeated exposure (chapter 3.9) | 1, 2 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | - *if inhalable particles of dusts or mists may occur during use.* |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| P261 | **Avoid breathing dust/fume/gas/mist/vapours/spray.** | Acute toxicity – inhalation (chapter 3.1) | 3, 4 | Manufacturer/supplier or the competent authority to specify applicable conditions. |
| | | Respiratory sensitization (chapter 3.4) | 1 | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P262 | **Do not get in eyes, on skin, or on clothing.** | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |
| P263 | **Avoid contact during pregnancy/while nursing.** | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| P264 | **Wash ... thoroughly after handling.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3, 4 | **...** Manufacturer/supplier or the competent authority to specify parts of the body to be washed after handling. |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Skin irritation (chapter 3.2) | 2 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |
| | | Specific target organ systemic toxicity – prolonged or repeated exposure (chapter 3.9) | 1 | |
| | | | | |
| P270 | **Do not eat, drink or smoke when using this product.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3, 4 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |
| | | Specific target organ systemic toxicity – prolonged or repeated exposure (chapter 3.9) | 1 | |
| P271 | **Use only outdoors or in a well-ventilated area.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3, 4 | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P272 | **Contaminated work clothing should not be allowed out of the workplace.** | Skin sensitization (chapter 3.4) | 1 | |
| P273 | **Avoid release to the environment.** | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 1, 2, 3 | - *if this is not the intended use.* |
| | | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 1, 2, 3, 4 | |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| | | | | |
| P280 | **Wear protective gloves/protective clothing/eye protection/face protection.** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify face protection.* |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify protective gloves and eye/face protection.* |
| | | Flammable solids (chapter 2.7) | 1, 2 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chap. 2.12) | 1, 2, 3 | |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3, 4 | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify protective gloves/clothing.* |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify protective gloves/clothing and eye/face protection.* |

| Code<br><br>(1) | Prevention precautionary statements<br><br>(2) | Hazard class<br><br>(3) | Hazard category<br><br>(4) | Conditions for use<br><br>(5) |
|---|---|---|---|---|
| *P280 cont'd* | *Wear protective gloves/protective clothing/eye protection/face protection. (cont'd)* | Skin irritation (chapter 3.2) | 2 | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify protective gloves.* |
| | | Skin sensitization (chapter 3.4) | 1 | |
| | | Severe eye damage (chapter 3.3) | 1 | Manufacturer/supplier or the competent authority to specify type of equipment.<br>- *Specify eye/face protection.* |
| | | Eye irritation (chapter 3.3) | 2A | |
| P281 | **Use personal protective equipment as required.** | Explosives (chapter 2.1) | Unstable explosive | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| P282 | **Wear cold insulating gloves/face shield/eye protection.** | Gases under pressure (chapter 2.5) | Refrigerated liquefied gas | |
| P283 | **Wear fire/flame resistant/retardant clothing.** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P284 | **Wear respiratory protection.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2 | Manufacturer/supplier or the competent authority to specify equipment. |
| P285 | **In case of inadequate ventilation wear respiratory protection.** | Respiratory sensitization (chapter 3.4) | 1 | Manufacturer/supplier or the competent authority to specify equipment. |
| | | | | |
| P231 + P232 | **Handle under inert gas. Protect from moisture.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P235 + P410 | **Keep cool. Protect from sunlight.** | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |

**Table A2.3.3 Codification of response precautionary statements**

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P301 | **IF SWALLOWED:** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3, 4 | |
| | | Skin Corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Aspiration Hazard (chapter 3.10) | 1, 2 | |
| P302 | **IF ON SKIN:** | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3, 4 | |
| | | Skin irritation (chapter 3.2) | 2 | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| P303 | **IF ON SKIN (or hair):** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| P304 | **IF INHALED:** | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3, 4, 5 | |
| | | Skin Corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Respiratory sensitization (chapter 3.4) | 1 | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P305 | **IF IN EYES:** | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Severe eye damage (chapter 3.3) | 1 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| P306 | **IF ON CLOTHING:** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P307 | **IF exposed:** | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1 | |
| P308 | **IF exposed or concerned:** | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P309 | **IF exposed or if you feel unwell:** | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 2 | |
| P310 | **Immediately call a POISON CENTER or doctor/physician.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 1, 2 | |
| | | Skin Corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Severe eye damage (chapter 3.3) | 1 | |
| | | Aspiration Hazard (chapter 3.10) | 1, 2 | |
| P311 | **Call a POISON CENTER or doctor/physician.** | Acute toxicity – inhalation (chapter 3.1) | 3 | |
| | | Respiratory sensitization (chapter 3.4) | 1 | |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |
| P312 | **Call a POISON CENTER or doctor/physician if you feel unwell.** | Acute toxicity – oral (chapter 3.1) | 4 | |
| | | Acute toxicity – oral (chapter 3.1) | 5 | |
| | | Acute toxicity – dermal (chapter 3.1) | 3, 4, 5 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 4 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 5 | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P313 | **Get medical advice/attention.** | Skin irritation (chapter 3.2) | 2, 3 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| P314 | **Get medical advice/attention if you feel unwell.** | Specific target organ systemic toxicity – prolonged or repeated exposure (chapter 3.9) | 1, 2 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P315 | **Get immediate medical advice/attention.** | Gases under pressure (chapter 2.5) | Refrigerated liquefied gas | |
| | | | | |
| P320 | **Specific treatment is urgent (see ... on this label).** | Acute toxicity – inhalation (chapter 3.1) | 1, 2 | **...** Reference to supplemental first aid instruction.<br>- *if immediate administration of antidote is required.* |
| P321 | **Specific treatment (see ... on this label).** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3 | **...** Reference to supplemental first aid instruction.<br>- *if immediate administration of antidote is required.* |
| | | Acute toxicity – inhalation (chapter 3.1) | 3 | **...** Reference to supplemental first aid instruction.<br>- *if immediate specific measures are required.* |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1 | **...** Reference to supplemental first aid instruction.<br>- *if immediate measures are required.* |
| | | Skin sensitization (chapter 3.4) | 1 | **...** Reference to supplemental first aid instruction.<br>- *manufacturer/supplier or competent authority may specify a cleansing agent if appropriate.* |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Skin irritation (chapter 3.2) | 2 | |
| P322 | **Specific measures (see ... on this label).** | Acute toxicity – dermal (chapter 3.1) | 1, 2 | **...** Reference to supplemental first aid instruction.<br>- *if immediate measures such as specific cleansing agent is advised.* |
| | | Acute toxicity – dermal (chapter 3.1) | 3, 4 | **...** Reference to supplemental first aid instruction.<br>- *if measures such as specific cleansing agent is advised.* |
| P330 | **Rinse mouth.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3, 4 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P331 | **Do NOT induce vomiting.** | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Aspiration hazard (chapter 3.10) | 1, 2 | |
| P332 | **If skin irritation occurs:** | Skin irritation (chapter 3.2) | 2, 3 | |
| P333 | **If skin irritation or rash occurs:** | Skin sensitization (chapter 3.4) | 1 | |
| P334 | **Immerse in cool water/wrap in wet bandages.** | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2 | |
| P335 | **Brush off loose particles from skin.** | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2 | |
| P336 | **Thaw frosted parts with lukewarm water. Do not rub affected area.** | Gases under pressure (chapter 2.5) | Refrigerated liquefied gas | |
| P337 | **If eye irritation persists:** | Eye irritation (chapter 3.3) | 2A, 2B | |
| P338 | **Remove contact lenses, if present and easy to do. Continue rinsing.** | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Severe eye damage (chapter 3.3) | 1 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| P340 | **Remove to fresh air and keep at rest in a position comfortable for breathing.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3, 4 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P341 | **If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.** | Respiratory sensitization (chapter 3.4) | 1 | |
| P342 | **If experiencing respiratory symptoms:** | Respiratory sensitization (chapter 3.4) | 1 | |
| | | | | |
| P350 | **Gently wash with plenty of soap and water.** | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P351 | **Rinse cautiously with water for several minutes.** | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Severe eye damage (chapter 3.3) | 1 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| P352 | **Wash with plenty of soap and water.** | Acute toxicity – dermal (chapter 3.1) | 3, 4 | |
| | | Skin irritation (chapter 3.2) | 2 | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| P353 | **Rinse skin with water/shower.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| P360 | **Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P361 | **Remove/Take off immediately all contaminated clothing.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| P362 | **Take off contaminated clothing and wash before re-use.** | Skin irritation (chapter 3.2) | 2 | |
| P363 | **Wash contaminated clothing before reuse.** | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3 | |
| | | Acute toxicity – dermal (chapter 3.1) | 4 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| P370 | **In case of fire:** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | |
| | | Oxidizing gases (chapter 2.4) | 1 | |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | |
| | | Flammable solids (chapter 2.7) | 1, 2 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| *P370 (cont'd)* | | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| P371 | **In case of major fire and large quantities:** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P372 | **Explosion risk in case of fire.** | Explosives (chapter 2.1) | Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | - *except if explosives are 1.4S AMMUNITION AND COMPONENTS THEREOF.* |
| P373 | **DO NOT fight fire when fire reaches explosives.** | Explosives (chapter 2.1) | Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | |
| P374 | **Fight fire with normal precautions from a reasonable distance.** | Explosives (chapter 2.1) | Division 1.4S | - *if explosives are 1.4S AMMUNITION AND COMPONENTS THEREOF.* |
| P375 | **Fight fire remotely due to the risk of explosion.** | Self-reactive substances and mixtures (chapter 2.8) | Types A, B | |
| | | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P376 | **Stop leak if safe to do so.** | Oxidizing gases (chapter 2.4) | 1 | |
| P377 | **Leaking gas fire:**<br>**Do not extinguish, unless leak can be stopped safely.** | Flammable gases (chapter 2.2) | 1, 2 | |
| P378 | **Use ... for extinction.** | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | **...** Manufacturer/supplier or the competent authority to specify appropriate media<br>- *if water increases risk.* |
| | | Flammable solids (chapter 2.7) | 1, 2 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Pyrophoric liquids (chapter 2.9) | 1 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| *P378 (cont'd)* | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| P380 | **Evacuate area.** | Explosives (chapter 2.1) | Unstable explosives | |
| | | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B | |
| | | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P381 | **Eliminate all ignition sources if safe to do so.** | Flammable gases (chapter 2.2) | 1, 2 | |
| | | | | |
| P390 | **Absorb spillage to prevent material damage.** | Substances and mixtures Corrosive to metals (chapter 2.16) | 1 | |
| P391 | **Collect spillage.** | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 1 | |
| | | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 1, 2 | |
| | | | | |
| P301 + P310 | **IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3 | |
| | | Aspiration hazard (chapter 3.10) | 1, 2 | |
| P301 + P312 | **IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.** | Acute toxicity – oral (chapter 3.1) | 4 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P301 + P330 + P331 | **IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.** | Skin Corrosion (chapter 3.2) | 1A, 1B, 1C | |
| P302 + P334 | **IF ON SKIN: Immerse in cool water/wrap in wet bandages.** | Pyrophoric liquids (chapter 2.9) | 1 | |
| P302 + P350 | **IF ON SKIN: Gently wash with plenty of soap and water.** | Acute toxicity – dermal (chapter 3.1) | 1, 2 | |
| P302 + P352 | **IF ON SKIN: Wash with plenty of soap and water.** | Acute toxicity – dermal (chapter 3.1) | 3, 4 | |
| | | Skin irritation (chapter 3.2) | 2 | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| P303 + P361 + P353 | **IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.** | Flammable liquids (chapter 2.6) | 1, 2, 3 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| P304 + P312 | **IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.** | Acute toxicity – inhalation (chapter 3.1) | 5 | |
| P304 + P340 | **IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3, 4 | |
| | | Skin Corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P304 + P341 | **IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.** | Respiratory sensitization (chapter 3.4) | 1 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P305 + P351 + P338 | **IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.** | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Severe eye damage (chapter 3.3) | 1 | |
| | | Eye irritation (chapter 3.3) | 2A, 2B | |
| P306 + P360 | **IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |
| P307 + P311 | **IF exposed: Call a POISON CENTER or doctor/physician.** | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1 | |
| P308 + P313 | **IF exposed or concerned: Get medical advice/ attention.** | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Reproductive toxicity – effects on or via lactation (chapter 3.7) | Additional category | |
| P309 + P311 | **IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.** | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 2 | |
| | | | | |
| P332 + P313 | **If skin irritation occurs: Get medical advice/ attention.** | Skin irritation (chapter 3.2) | 2, 3 | |
| P333 + P313 | **If skin irritation or rash occurs: Get medical advice/attention.** | Skin sensitization (chapter 3.4) | 1 | |
| P335 + P334 | **Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.** | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2 | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P337 + P313 | **If eye irritation persists: Get medical advice/attention.** | Eye irritation (chapter 3.3) | 2A, 2B | |
| | | | | |
| P342 + P311 | **If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.** | Respiratory sensitization (chapter 3.4) | 1 | |
| P370 + P376 | **In case of fire: Stop leak if safe to do so.** | Oxidizing gases (chapter 2.4) | 1 | |
| P370 + P378 | **In case of fire: Use ... for extinction.** | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | **...** Manufacturer/supplier or the competent authority to specify appropriate media.<br>- *if water increases risk.* |
| | | Flammable solids (chapter 2.7) | 1, 2 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Pyrophoric liquids (chapter 2.9) | 1 | |
| | | Pyrophoric solids (chapter 2.10) | 1 | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| P370 + P380 | **In case of fire: Evacuate area.** | Explosives (chapter 2.1) | Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | |
| P370 + P380 + P375 | **In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.** | Self-reactive substances and mixtures (chapter 2.8) | Types A, B | |

| Code (1) | Response precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P371 + P380 + P375 | **In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.** | Oxidizing liquids (chapter 2.13) | 1 | |
| | | Oxidizing solids (chapter 2.14) | 1 | |

**Table A2.3.4 Codification of storage precautionary statements**

| Code (1) | Storage precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P401 | **Store … .** | Explosives (chapter 2.1) | Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | **...** in accordance with local/regional/ national/international regulations (to be specified). |
| P402 | **Store in a dry place.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P403 | **Store in a well-ventilated place.** | Flammable gases (chapter 2.2) | 1, 2 | |
| | | Oxidizing gases (chapter 2.4) | 1 | |
| | | Gases under pressure (chapter 2.5) | Compressed gas | |
| | | | Liquefied gas | |
| | | | Refrigerated Liquefied gas | |
| | | | Dissolved gas | |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3 | |

| Code (1) | Storage precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| *P403 (cont'd)* | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | - *if product is volatile so as to generate hazardous atmosphere.* |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P404 | **Store in a closed container.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P405 | **Store locked up.** | Acute toxicity – oral (chapter 3.1) | 1, 2, 3 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| | | Aspiration hazard (chapter 3.10) | 1, 2 | |
| P406 | **Store in corrosive resistant/... container with a resistant inner liner.** | Substances and mixtures corrosive to metals (chapter 2.16) | 1 | **...** Manufacturer/supplier or the competent authority to specify other compatible materials. |
| P407 | **Maintain air gap between stacks/pallets.** | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |
| | | | | |

| Code<br>(1) | Storage precautionary statements<br>(2) | Hazard class<br>(3) | Hazard category<br>(4) | Conditions for use<br>(5) |
|---|---|---|---|---|
| P410 | **Protect from sunlight.** | Flammable aerosols (chapter 2.3) | 1, 2 | |
| | | Gases under pressure (chapter 2.5) | Compressed gas | |
| | | | Liquefied gas | |
| | | | Dissolved gas | |
| | | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| P411 | **Store at temperatures not exceeding …°C/…°F.** | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | **...** Manufacturer/supplier or the competent authority to specify temperature. |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| P412 | **Do not expose to temperatures exceeding 50 °C/ 122 °F.** | Flammable aerosols (chapter 2.3) | 1, 2 | |
| P413 | **Store bulk masses greater than … kg/…lbs at temperatures not exceeding …°C/…°F.** | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | **...** Manufacturer/supplier or the competent authority to specify mass and temperature. |
| P420 | **Store away from other materials.** | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Self-heating substances and mixtures (chapter 2.11) | 1, 2 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| P422 | **Store contents under ... .** | Pyrophoric liquids (chapter 2.9) | 1 | **...** Manufacturer/supplier or the competent authority to specify appropriate liquid or inert gas. |
| | | Pyrophoric solids (chapter 2.10) | 1 | |

| Code (1) | Storage precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| | | | | |
| P402 + P404 | **Store in a dry place. Store in a closed container.** | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| P403 + P233 | **Store in a well-ventilated place. Keep container tightly closed.** | Acute toxicity – inhalation (chapter 3.1) | 1, 2, 3 | - *if product is volatile so as to generate hazardous atmosphere.* |
| | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| P403 + P235 | **Store in a well-ventilated place. Keep cool.** | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| P410 + P403 | **Protect from sunlight. Store in a well-ventilated place.** | Gases under pressure (chapter 2.5) | Compressed gas | |
| | | | Liquefied gas | |
| | | | Dissolved gas | |
| P410 + P412 | **Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.** | Flammable aerosols (chapter 2.3) | 1, 2 | |
| P411 + P235 | **Store at temperatures not exceeding …°C/…°F. Keep cool.** | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | **...** Manufacturer/supplier or the competent authority to specify temperature. |

**Table A2.3.5 Codification of disposal precautionary statements**

| Code (1) | Disposal precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P501 | **Dispose of contents/container to ...** | Explosives (chapter 2.1) | Unstable explosives and Divisions 1.1, 1.2, 1.3, 1.4, 1.5 | **...** in accordance with local/regional/ national/international regulation (to be specified). |
| | | Flammable liquids (chapter 2.6) | 1, 2, 3, 4 | |
| | | Self-reactive substances and mixtures (chapter 2.8) | Types A, B, C, D, E, F | |
| | | Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12) | 1, 2, 3 | |
| | | Oxidizing liquids (chapter 2.13) | 1, 2, 3 | |
| | | Oxidizing solids (chapter 2.14) | 1, 2, 3 | |
| | | Organic peroxides (chapter 2.15) | Types A, B, C, D, E, F | |
| | | Acute toxicity – oral (chapter 3.1) | 1, 2, 3, 4 | |
| | | Acute toxicity – dermal (chapter 3.1) | 1, 2, 3, 4 | |
| | | Acute toxicity – inhalation (chapter 3.1) | 1, 2 | |
| | | Skin corrosion (chapter 3.2) | 1A, 1B, 1C | |
| | | Respiratory sensitization (chapter 3.4) | 1 | |
| | | Skin sensitization (chapter 3.4) | 1 | |
| | | Germ cell mutagenicity (chapter 3.5) | 1A, 1B, 2 | |
| | | Carcinogenicity (chapter 3.6) | 1A, 1B, 2 | |
| | | Reproductive toxicity (chapter 3.7) | 1A, 1B, 2 | |
| | | Specific target organ systemic toxicity – single exposure (chapter 3.8) | 1, 2 | |

| Code (1) | Disposal precautionary statements (2) | Hazard class (3) | Hazard category (4) | Conditions for use (5) |
|---|---|---|---|---|
| P501 *(cont'd)* | | Specific target organ systemic toxicity – single exposure; respiratory tract irritation (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – single exposure; narcosis (chapter 3.8) | 3 | |
| | | Specific target organ systemic toxicity – prolonged or repeated exposure (chapter 3.9) | 1, 2 | |
| | | Aspiration hazard (chapter 3.10) | 1, 2 | |
| | | Hazardous to the aquatic environment – acute toxicity (chapter 4.1) | 1, 2, 3 | |
| | | Hazardous to the aquatic environment – chronic toxicity (chapter 4.1) | 1, 2, 3, 4 | |

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# Annex 2

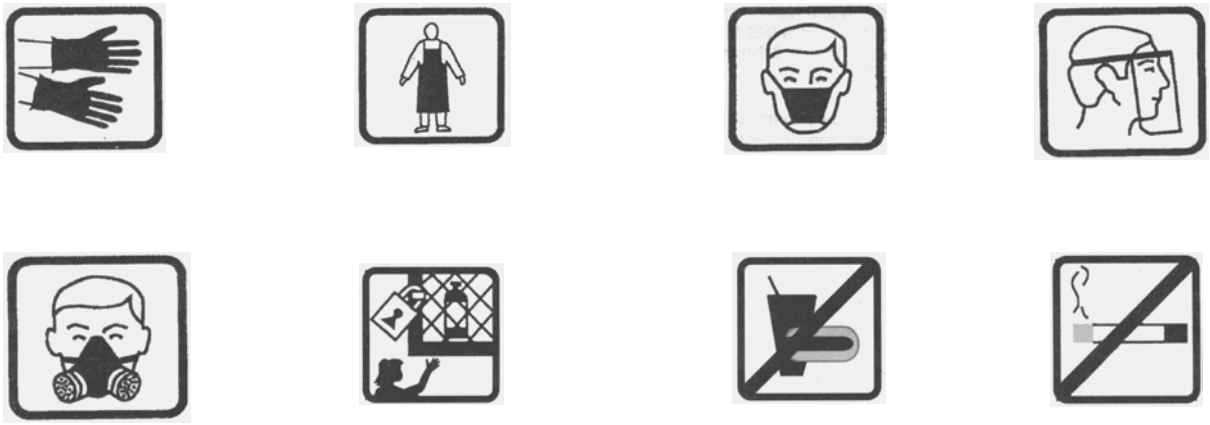
# SECTION 4

# EXAMPLES OF PRECAUTIONARY PICTOGRAMS

### A2.4.1 Examples of precautionary pictograms

From European Union (Council directive 92/58/EEC of 24 June 1992)

From South African Bureau of Standards (SABS 0265:1999)



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# ANNEX 3

# ALLOCATION OF LABEL ELEMENTS

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# Annex 3

# ALLOCATION OF LABEL ELEMENTS

## A3.1 Introduction

### A3.1.1 General information

A3.1.1.1 This Annex provides information in the following order for each hazard class and hazard category of the GHS:

| | |
|---|---|
| Column (1) | Hazard category; |
| Column (2) | The assigned TDG pictogram, where applicable; |
| Column (3) | The assigned GHS pictogram; |
| Column (4) | The assigned signal word; |
| Column (5) | The code for the assigned hazard statement; |
| Columns (6) to (9) | The code for the assigned precautionary statements by precautionary statement type. |

### A3.1.2 Pictograms

A3.1.2.1 Information relating to pictograms is contained in Annex 2 section 1, which contains illustration of both GHS and TDG (Transport of Dangerous Goods) pictograms.

A3.1.2.2 Provisions relating to pictograms in Part 1 and Annex 2 section 1 of the GHS shall be observed.

### A3.1.3 Hazard statements

A3.1.3.1 This Annex references the codes for hazard statements, the text for which is contained in Annex 2 section 2. The hazard statement codes shall only be used for reference purposes and shall neither form part of the hazard statement text that appears on a GHS label, nor replace it. However the hazard statement codes can be used in addition to the hazard statement text in a safety data sheet.

A3.1.3.2 Provisions relating to hazard statements in Part 1 and Annex 2 section 2 of the GHS shall be observed.

### A3.1.4 Precautionary statements

A3.1.4.1 This Annex references the codes for the recommended precautionary statements for each hazard class and hazard category, the text for which is contained in Annex 2 section 3. The precautionary statement codes shall only be used for reference purposes and shall neither form part of the precautionary statement text that appears on a GHS label, nor replace it.

A3.1.4.2 General precautionary statements are assigned on the basis of use and not hazard, and are therefore not included in this Annex.

A3.1.4.3 In this Annex the code(s) that comprise the reference to an individual precautionary statement text that appears on a label are terminated by a semi-colon (;). In some cases there is more than

one precautionary statement code that is added to another/others to provide the full precautionary statement text that appears on a label. In such cases the individual codes are conjoined by a plus sign (+) (see A2.3.3.7).

A3.1.4.4 Provisions relating to precautionary statements in Part 1 and Annex 2 section 3 of the GHS shall be observed, including any conditions relating to their use.

## A3.2 Physical hazards

### A3.2.1 *Explosives*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **Unstable explosives** | **No pictogram assigned in *UN RTDG*. (Transport not allowed)** |  | **Danger** | **H201;** | **P201;<br>P202;<br>P281;** | **P372;<br>P373;<br>P380;** | **P401;** | **P501;** |
| **Division 1.1** |  |  | **Danger** | **H202;** | **P210;<br>P230;<br>P240;<br>P250;<br>P280;** | **P370 + P380;<br>P372;<br>P373;** | **P401;** | **P501;** |
| **Division 1.2** |  |  | **Danger** | **H203;** | **P210;<br>P230;<br>P240;<br>P250;<br>P280;** | **P370 + P380;<br>P372;<br>P373;** | **P401;** | **P501;** |
| **Division 1.3** |  |  | **Danger** | **H204;** | **P210;<br>P230;<br>P240;<br>P250;<br>P280;** | **P370 + P380;<br>P372;<br>P373;** | **P401;** | **P501;** |

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **Division 1.4** |   |  | **Warning** | **H205;** | **P210;<br>P240;<br>P250;<br>P280;** | **P370 + P380;<br>P372;<br>P373;<br>P374;** | **P401;** | **P501;** |
| **Division 1.5** |   |   | **Danger** | **H206;** | **P210;<br>P230;<br>P240;<br>P250;<br>P280;** | **P370 + P380;<br>P372;<br>P373;** | **P401;** | **P501;** |
| **Division 1.6** |   |   | **No signal word** | **No hazard statement** | | | | |

**A3.2.2** ***Flammable gases***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |   |  | Danger | H220; | P210; | P377;<br>P381; | P403; | |
| 2 | Not required under the *UN RTDG Model Regulations* | No pictogram | Warning | H221; | P210; | P377;<br>P381; | P403; | |

**A3.2.3** ***Flammable aerosols***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |   |  | Danger | H222; | P210;<br>P211;<br>P251; | | P410 + P412; | |
| 2 |   |  | Warning | H223; | P210;<br>P211;<br>P251; | | P410 + P412; | |

**A3.2.4** *Oxidizing gases*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H270; | P220;<br>P244; | P370 + P376; | P403; | |

**A3.2.5** *Gases under pressure*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **Compressed gas** |  |  | **Warning** | **H280;** | | | **P410 + P403;** | |
| **Liquefied gas** |  |  | **Warning** | **H280;** | | | **P410 + P403;** | |
| **Refrigerated liquefied gas** |  |  | **Warning** | **H281;** | **P282;** | **P336;<br>P315;** | **P403;** | |
| **Dissolved gas** |  |  | **Warning** | **H280;** | | | **P410 + P403;** | |

**A3.2.6** ***Flammable liquids***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Danger** | **H224;** | **P210; P233; P240; P241; P242; P243; P280;** | **P303 +P361 + P353; P370 + P378;** | **P403 + P235;** | **P501;** |
| **2** |  |  | **Danger** | **H225;** | **P210; P233; P240; P241; P242; P243; P280;** | **P303 +P361 + P353; P370 + P378;** | **P403 + P235;** | **P501;** |
| **3** |  |  | **Warning** | **H226;** | **P210; P233; P240; P241; P242; P243; P280;** | **P303 +P361 + P353; P370 + P378;** | **P403 + P235;** | **P501;** |
| **4** | **Not required under the *UN RTDG Model Regulations*** | **No pictogram** | **Warning** | **H227;** | **P210; P280;** | **P370 + P378;** | **P403 + P235;** | **P501;** |

**A3.2.7** ***Flammable solids***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Danger** | **H228;** | **P210;<br>P240;<br>P241;<br>P280;** | **P370 + P378;** | | |
| **2** |  |  | **Warning** | **H228;** | **P210;<br>P240;<br>P241;<br>P280;** | **P370 + P378;** | | |

**A3.2.8** ***Self-reactive substances and mixtures***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| Type A | Same as for explosives (follow the same symbol selection process) |  | Danger | H240; | P210;<br>P220;<br>P234;<br>P280; | P370 + P378;<br>P370 + P380 + P375; | P403 + P235;<br>P411;<br>P420; | P501; |
| Type B |  |  | Danger | H241; | P210;<br>P220;<br>P234;<br>P280; | P370 + P378;<br>P370 + P380 + P375; | P403 + P235;<br>P411;<br>P420; | P501; |
| Types C and D |  |  | Danger | H242; | P210;<br>P220;<br>P234;<br>P280; | P370 + P378; | P403 + P235;<br>P411;<br>P420; | P501; |
| Types E and F |  |  | Warning | H242; | P210;<br>P220;<br>P234;<br>P280; | P370 + P378; | P403 + P235;<br>P411;<br>P420; | P501; |

| Hazard category | Pictogram TDG | Pictogram GHS | Signal word | Hazard statement code | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention | Response | Storage | Disposal |
| Type G | Not required under the *UN RTDG Model Regulations* | No pictogram | No signal word | No hazard Statement | | | | |

A3.2.9 *Pyrophoric liquids*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H250; | P210; P222; P280; | P302 + P334; P370 + P378; | P422; | |

A3.2.10 *Pyrophoric solids*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H250; | P210; P222; P280; | P335 + P334; P370 + P378; | P422; | |

**A3.2.11** *Self-heating substances and mixtures*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |   |  | Danger | H251; | P235 + P410; P280; | | P407; P413; P420; | |
| 2 |   |  | Warning | H252; | | | | |

**A3.2.12** ***Substances and mixtures, which in contact with water, emit flammable gases***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H260; | P223; P231 + P232; P280; | P335 + P334; P370 + P378; | P402 + P404; | P501; |
| 2 |  |  | Danger | H261; | P223; P231 + P232; P280; | P335 + P334; P370 + P378; | P402 + P404; | P501; |
| 3 |  |  | Warning | H261; | P231 + P232; P280; | P370 + P378; | P402 + P404; | P501; |

**A3.2.13** *Oxidizing liquids*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H271; | P210;<br>P220;<br>P221;<br>P280;<br>P283; | P306 +P360;<br>P371+P380 +<br>P375;<br>P370 + P378; | | P501; |
| 2 |  |  | Danger | H272; | P210;<br>P220;<br>P221;<br>P280; | P370 + P378; | | P501; |
| 3 |  |  | Warning | H272; | P210;<br>P220;<br>P221;<br>P280; | P370 + P378; | | P501; |

**A3.2.14** *Oxidizing solids*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H271; | P210;<br>P220;<br>P221;<br>P280;<br>P283; | P306 +P360;<br>P371+P380 +<br>P375;<br>P370 + P378; | | P501; |
| 2 |  |  | Danger | H272; | P210;<br>P220;<br>P221;<br>P280; | P370 + P378; | | P501; |
| 3 |  |  | Warning | H272; | P210;<br>P220;<br>P221;<br>P280; | P370 + P378; | | P501; |

**A3.2.15** *Organic peroxides*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **Type A** | **Same as for explosives (follow the same symbol selection process)** |  | **Danger** | **H240;** | **P210;<br>P220;<br>P234;<br>P280;** | | **P411 + P235;<br>P410;<br>P420;** | **P501;** |
| **Type B** |   |  | **Danger** | **H241;** | **P210;<br>P220;<br>P234;<br>P280;** | | **P411 + P235;<br>P410;<br>P420;** | **P501;** |
| **Types C and D** |   |  | **Danger** | **H242;** | **P210;<br>P220;<br>P234;<br>P280;** | | **P411 + P235;<br>P410;<br>P420;** | **P501;** |
| **Types E and F** |   |  | **Warning** | **H242;** | **P210;<br>P220;<br>P234;<br>P280;** | | **P411 + P235;<br>P410;<br>P420;** | **P501;** |

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **Type G** | **Not required under the *UN RTDG Model Regulations*** | **No pictogram** | **No signal word** | **No hazard statement** | | | | |

**A3.2.16** ***Corrosive to metals***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Warning** | **H290;** | **P234;** | **P390;** | **P406;** | |

**A3.3 Health hazards**

**A3.3.1 (a) *Acute toxicity: Oral***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Danger | H301; | P264; P270; | P301 + P310; P321; P330; | P405; | P501; |
| 2 |  |  | Danger | H301; | P264; P270; | P301 + P310; P321; P330; | P405; | P501; |
| 3 |  |  | Danger | H302; | P264; P270; | P301 + P310; P321; P330; | P405; | P501; |
| 4 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H303; | P264; P270; | P301 + P312; P330; | | P501; |
| 5 | Not applicable for the *UN RTDG Model Regulations* | No pictogram | Warning | H304; | | P312; | | |

**A3.3.1 (b)** ***Acute toxicity: Dermal***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Danger** | **H310;** | **P262;<br>P264;<br>P270;<br>P280;** | **P302 + P350;<br>P310;<br>P322;<br>P361;<br>P363;** | **P405;** | **P501;** |
| **2** |  |  | **Danger** | **H310;** | **P262;<br>P264;<br>P270;<br>P280;** | **P302 + P350;<br>P310;<br>P322;<br>P361;<br>P363;** | **P405;** | **P501;** |
| **3** |  |  | **Danger** | **H311;** | **P280;** | **P302 + P352;<br>P312;<br>P322;<br>P361;<br>P363;** | **P405;** | **P501;** |
| **4** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H312;** | **P280;** | **P302 + P352;<br>P312;<br>P322;<br>P363;** | | **P501;** |
| **5** | **Not applicable for the *UN RTDG Model Regulations*** | **No pictogram** | **Warning** | **H313;** | | **P312;** | | |

**A3.3.1 (c)** ***Acute toxicity: inhalation***

(i) *(dusts and mists, vapours)*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Danger** | **H330;** | **P260;<br>P271;<br>P284;** | **P304 + P340;<br>P310;<br>P320;** | **P403 + P233;<br>P405;** | **P501;** |
| **2** |  |  | **Danger** | **H330;** | **P260;<br>P271;<br>P284;** | **P304 + P340;<br>P310;<br>P320;** | **P403 + P233;<br>P405;** | **P501;** |
| **3** |  |  | **Danger** | **H331;** | **P261;<br>P271;** | **P304 + P340;<br>P311;<br>P321;** | **P403 + P233;<br>P405;** | **P501;** |
| **4** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H332;** | **P261;<br>P271;** | **P304 + P340;<br>P312;** | | |
| **5** | **Not applicable for the *UN RTDG Model Regulations*** | **No pictogram** | **Warning** | **H333;** | | **P304 + P312;** | | |

**A3.3.1 (c)** ***Acute toxicity: inhalation (cont'd)***

(ii) *Gases*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Danger** | **H330;** | **P260;<br>P271;<br>P284;** | **P304 + P340;<br>P310;<br>P320;** | **P403 + P233;<br>P405;** | **P501;** |
| **2** |  |  | **Danger** | **H330;** | **P260;<br>P271;<br>P284;** | **P304 + P340;<br>P310;<br>P320;** | **P403 + P233;<br>P405;** | **P501;** |
| **3** |  |  | **Danger** | **H331;** | **P261;<br>P271;** | **P304 + P340;<br>P311;<br>P321;** | **P403 + P233;<br>P405;** | **P501;** |
| **4** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H332;** | **P261;<br>P271;** | **P304 + P340;<br>P312;** | | |
| **5** | **Not applicable for the *UN RTDG Model Regulations*** | **No pictogram** | **Warning** | **H333;** | | **P304 + P312;** | | |

**A3.3.2** ***Skin corrosion/irritation***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1A to 1C** |  |  | **Danger** | **H314;** | **P260;<br>P264;<br>P280;** | **P301 + P330 + P331;<br>P303 + P361 + P353;<br>P363;<br>P304 + P340;<br>P310;<br>P321;<br>P305 + P351 + P338;** | **P405;** | **P501;** |
| **2** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H315;** | **P264;<br>P280;** | **P302 + P352;<br>P321;<br>P332 + P313;<br>P362;** | | |
| **3** | **Not applicable for the *UN RTDG Model Regulations*** | **No pictogram** | **Warning** | **H316;** | | **P332 + P313;** | | |

**A3.3.3** *Severe eye damage/eye irritation*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H318; | P280; | P305 + P351 + P338; P310; | | |
| 2A | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H319; | P264; P280; | P305 + P351 + P338; P337 + P313; | | |
| 2B | Not applicable for the *UN RTDG Model Regulations* | No pictogram | Warning | H320; | P264; | P305 + P351 + P338; P337 + P313; | | |

**A3.3.4 (a)** ***Respiratory sensitization***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H334; | P261; P285; | P304 + P341; P342 + P311 | | P501; |

**A3.3.4 (b)** ***Skin sensitization***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H317; | P261; P272; P280; | P302 + P352; P333 + P313; P321; P363; | | P501; |

**A3.3.5** ***Germ cell mutagenicity***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1A | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H350; | P201; P202; P281; | P308 + P313; | P405; | P501; |
| 1B | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H350; | P201; P202; P281; | P308 + P313; | P405; | P501; |
| 2 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H351; | P201; P202; P281; | P308 + P313; | P405; | P501; |

**A3.3.6** *Carcinogenicity*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1A | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H352; | P201; P202; P281; | P308 + P313; | P405; | P501; |
| 1B | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H352; | P201; P202; P281; | P308 + P313; | P405; | P501; |
| 2 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H353; | P201; P202; P281; | P308 + P313; | P405; | P501; |

**A3.3.7** ***Toxic to reproduction***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1A** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Danger** | **H354;** | **P201; P202; P281;** | **P308 + P313;** | **P405;** | **P501;** |
| **1B** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Danger** | **H354;** | **P201; P202; P281;** | **P308 + P313;** | **P405;** | **P501;** |
| **2** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H355;** | **P201; P202; P281;** | **P308 + P313;** | **P405;** | **P501;** |
| **Additional Category Effects on or via lactation** | **Not applicable for the *UN RTDG Model Regulations*** | **No Pictogram** | **No Signal Word** | **H356;** | **P201; P260; P263; P264; P270;** | **P308 + P313;** | | |

**A3.3.8** *Specific Target Organ Systemic Toxicity (single exposure)*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Danger** | **H360;** | **P260; P264; P270;** | **P307 + P311; P321;** | **P405;** | **P501;** |
| **2** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H361;** | **P260; P264; P270;** | **P309 + P311;** | **P405;** | **P501;** |
| **3** | **Not applicable for the *UN RTDG Model Regulations*** |  | **Warning** | **H335** (Respiratory tract irritation) **H336** (Narcotic effects) | **P261; P271;** | **P304 + P340; P312;** | **P403 + P233; P405;** | **P501;** |

**A3.3.9** *Specific Target Organ Systemic Toxicity (repeated exposure)*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H362; | P260; P264; P270; | P314; | | P501; |
| 2 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H363; | P260; | P314; | | P501; |

**A3.3.10** *Aspiration hazard*

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 | Not applicable for the *UN RTDG Model Regulations* |  | Danger | H305; | | P301 + P310; P331 | P405; | P501; |
| 2 | Not applicable for the *UN RTDG Model Regulations* |  | Warning | H306; | | P301 + P310; P331 | P405; | P501; |

**A3.4 Environmental hazards**

**A3.4.1 (a)** ***Hazardous to the aquatic environment – Acute aquatic toxicity***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| 1 |  |  | Warning | H401; | P273; | P391; | | P501; |
| 2 | Not applicable for the *UN RTDG Model Regulations* | No pictogram | No signal word | H402; | P273; | | | P501; |
| 3 | Not applicable for the *UN RTDG Model Regulations* | No pictogram | No signal word | H403; | P273; | | | P501; |

**A3.4.1 (b)** ***Hazardous to the aquatic environment – Chronic aquatic toxicity***

| Hazard category (1) | Pictogram TDG (2) | Pictogram GHS (3) | Signal word (4) | Hazard statement code (5) | Precautionary statement codes | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Prevention (6) | Response (7) | Storage (8) | Disposal (9) |
| **1** |  |  | **Warning** | **H410;** | **P273;** | **P391;** | | **P501;** |
| **2** |  |  | **No Signal Word** | **H411;** | **P273;** | **P391;** | | **P501;** |
| **3** | **Not applicable for the *UN RTDG Model Regulations*** | **No Pictogram** | **No Signal Word** | **H412;** | **P273;** | | | **P501;** |
| **4** | **Not applicable for the *UN RTDG Model Regulations*** | **No Pictogram** | **No Signal Word** | **H413;** | **P273;** | | | **P501;** |