ANNEX 2

CLASSIFICATION AND LABELLING

SUMMARY TABLES

Annex 2

CLASSIFICATION AND LABELLING SUMMARY TABLES

A2.1 **Explosives** (see Chapter 2.1 for details)

Hazard category	Criteria	Hazard communication elements	
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.*	Symbol	
		Signal word	Danger
		Hazard statement	Unstable explosive
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.*	Symbol	
		Signal word	Danger
		Hazard statement	Explosive; mass explosion hazard
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.*	Symbol	
		Signal word	Danger
		Hazard statement	Explosive; severe projection hazard
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.*	Symbol	
		Signal word	Danger
		Hazard statement	Explosive; fire, blast or projection hazard
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*.	Symbol	
		Signal word	Warning
		Hazard statement	Fire or projection hazard

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Hazard category *(cont'd)*	**Criteria**	**Hazard communication elements**	
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.*	Symbol	**1.5**
		Signal word	Danger
		Hazard statement	May mass explode in fire
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*.	Symbol	**1.6**
		Signal word	*No signal word*
		Hazard statement	*No hazard statement*

A2.2 Flammable gases (See Chapter 2.2 for details)

Hazard category	Criteria	Hazard communication elements	
1	Gases and gas mixtures, which at 20 °C and a standard pressure of 101.3 kPa: (a) are ignitable when in a mixture of 13% or less by volume in air; or (b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit.	Symbol	
		Signal word	Danger
		Hazard statement	Extremely flammable gas
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.	Symbol	*No symbol*
		Signal word	Warning
		Hazard statement	Flammable gas

A2.3 Flammable aerosols (See Chapter 2.3 for details)

Hazard category	Criteria	Hazard communication elements	
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).	Symbol	
		Signal word	Danger
		Hazard statement	Extremely flammable aerosol
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).	Symbol	
		Signal word	Warning
		Hazard statement	Flammable aerosol

A2.4 Oxidizing gases (See Chapter 2.4 for details)

Hazard category	Criteria	Hazard communication elements	
1	Any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.	Symbol	
		Signal word	Danger
		Hazard statement	May cause or intensify fire; oxidizer

A2.5 Gases under pressure (See Chapter 2.5 for details)

Hazard category	Criteria	Hazard communication elements	
Compressed gas	A gas, which when packaged under pressure is entirely gaseous at -50 °C; including all gases with a critical temperature ≤ -50 °C.	Symbol	
		Signal word	Warning
		Hazard statement	Contains gas under pressure; may explode if heated
Liquefied gas	A gas which when packaged under pressure, is partially liquid at temperatures above -50 °C. A distinction is made between: (i) *High pressure liquefied gas*: a gas with a critical temperature between –50 °C and +65 °C; and (ii) *Low pressure liquefied gas*: a gas with a critical temperature above +65 °C.	Symbol	
		Signal word	Warning
		Hazard statement	Contains gas under pressure; may explode if heated
Refrigerated liquefied gas	A gas which when packaged is made partially liquid because of its low temperature.	Symbol	
		Signal word	Warning
		Hazard statement	Contains refrigerated gas; may cause cryogenic burns or injury
Dissolved gas	A gas which when packaged under pressure is dissolved in a liquid phase solvent.	Symbol	
		Signal Word	Warning
		Hazard statement	Contains gas under pressure; may explode if heated

A2.6 Flammable liquids (See Chapter 2.6 for details)

Hazard category	Criteria	Hazard communication elements	
1	Flash point < 23 °C and initial boiling point ≤ 35 °C.	Symbol	
		Signal word	Danger
		Hazard statement	Extremely flammable liquid and vapour
2	Flash point < 23 °C and initial boiling point >35 °C.	Symbol	
		Signal word	Danger
		Hazard statement	Highly flammable liquid and vapour
3	Flash point ≥ 23 °C and ≤ 60 °C.	Symbol	
		Signal word	Warning
		Hazard statement	Flammable liquid and vapour
4	Flash point > 60 °C and ≤ 93 °C.	Symbol	*No symbol*
		Signal word	Warning
		Hazard statement	Combustible liquid

A2.7 Flammable solids (See Chapter 2.7 for details)

<table>
<tr><th>Hazard category</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">Burning rate test:
Substances and mixtures other than metal powders:
- wetted zone does not stop fire and
- burning time < 45 seconds or
burning rate > 2.2 mm/s
Metal powders:
- burning time ≤ 5 minutes.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>Flammable solid</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">Burning rate test:
Substances and mixtures other than metal powders:
- wetted zone stops the fire for at least 4 minutes and
- burning time < 45 seconds or
burning rate > 2.2 mm/second
Metal powders:
- burning time > 5 minutes
and ≤ 10 minutes.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Warning</td></tr>
<tr><td>Hazard statement</td><td>Flammable solid</td></tr>
</table>

A2.8 Self-reactive substances and mixtures (See Chapter 2.8 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	Heating may cause an explosion
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.	Symbol	 
		Signal word	Danger
		Hazard statement	Heating may cause a fire or explosion
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.	Symbol	
		Signal word	Danger
		Hazard statement	Heating may cause a fire
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.	Symbol	
		Signal word	Warning
		Hazard statement	Heating may cause a fire
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.	Signal word	*There are no label elements allocated to this hazard category*
		Symbol	
		Hazard statement	

A2.9 Pyrophoric liquids (See Chapter 2.9 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	Catches fire spontaneously if exposed to air

A2.10 Pyrophoric solids (See Chapter 2.10 for details)

Hazard category	Criteria	Hazard communication elements	
1	The solid ignites within 5 minutes of coming into contact with air.	Symbol	
		Signal word	Danger
		Hazard statement	Catches fire spontaneously if exposed to air

A2.11 Self-heating substances and mixtures (See Chapter 2.11 for details)

<table>
<tr><th>Hazard category</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">A positive result is obtained in a test using a 25 mm sample cube at 140 °C.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>Self-heating; may catch fire</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">(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 <u>and</u> the substance is to be packed in packages with a volume of more than 3 m^3; or
(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 <u>and</u> the substance is to be packed in packages with a volume of more than 450 litres; or
(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 <u>and</u> a positive result is obtained in a test using a 100 mm cube sample at 100 °C.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Warning</td></tr>
<tr><td>Hazard statement</td><td>Self-heating in large quantities; may catch fire</td></tr>
</table>

A2.12 Substances and mixtures, which in contact with water, emit flammable gases (See Chapter 2.12 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	In contact with water releases flammable gases which may ignite spontaneously
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.	Symbol	
		Signal word	Danger
		Hazard statement	In contact with water releases flammable gases
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.	Symbol	
		Signal word	Warning
		Hazard statement	In contact with water releases flammable gases

A2.13 Oxidizing liquids (See Chapter 2.13 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	May cause fire or explosion; strong oxidizer
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.	Symbol	
		Signal word	Danger
		Hazard statement	May intensify fire; oxidizer
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.	Symbol	
		Signal word	Warning
		Hazard statement	May intensify fire; oxidizer

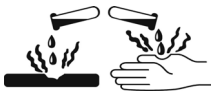
A2.14 Oxidizing solids (See Chapter 2.14 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	May cause fire or explosion; strong oxidizer
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.	Symbol	
		Signal word	Danger
		Hazard statement	May intensify fire; oxidizer
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.	Symbol	
		Signal word	Warning
		Hazard statement	May intensify fire; oxidizer

A2.15 Organic peroxides (See Chapter 2.15 for details)

Hazard category	Criteria	Hazard communication elements	
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.	Symbol	
		Signal word	Danger
		Hazard statement	Heating may cause an explosion
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.	Symbol	 
		Signal word	Danger
		Hazard statement	Heating may cause a fire or explosion
Type 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.	Symbol	
		Signal word	Danger
		Hazard statement	Heating may cause a fire
Type E and F	According to the results of test series A to H in the *UN Recommendations on the Transport of Dangerous Good, Manual of Tests and Criteria,* Part II and the application of the decision logic under 2.15.4.1 of Chapter 2.15.	Symbol	
		Signal word	Warning
		Hazard statement	Heating may cause a fire
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.	Signal word	*There are no label elements allocated to this hazard category*
		Symbol	
		Hazard statement	

A2.16 Corrosive to metals (See Chapter 2.16 for details)

Hazard category	Criteria	Hazard communication elements	
1	Corrosion rate on steel or aluminium surfaces exceeding 6.25 mm per year at a test temperature of 55 °C.	Symbol	
		Signal word	Warning
		Hazard statement	May be corrosive to metals

A2.17 Acute toxicity (See Chapter 3.1 for details)

Hazard category	Criteria	Hazard communication elements	
1	$LD_{50} \leq 5$ mg/kg bodyweight (oral) $LD_{50} \leq 50$ mg/kg bodyweight (skin/dermal) $LC_{50} \leq 100$ ppm (gas) $LC_{50} \leq 0.5$ (mg/l) (vapour) $LC_{50} \leq 0.05$ (mg/l) (dust, mist)	Symbol	
		Signal word	Danger
		Hazard statement	Fatal if swallowed. (oral) Fatal in contact with skin (dermal) Fatal if inhaled (gas, vapour, dust, mist)
2	LD_{50} between 5 and less than 50 mg/kg bodyweight (oral) LD_{50} between 50 and less than 200 mg/kg bodyweight (skin/dermal) LC_{50} between 100 and less than 500 ppm (gas) LC_{50} between 0.5 and less than 2.0 (mg/l) (vapour) LC_{50} between 0.05 and less than 0.5 (mg/l) (dust, mist)	Symbol	
		Signal word	Danger
		Hazard Statement	Fatal if swallowed. (oral) Fatal in contact with skin (dermal) Fatal if inhaled (gas, vapour, dust, mist)
3	LD_{50} between 50 and less than 300 mg/kg bodyweight (oral) LD_{50} between 200 and less than 1000 mg/kg bodyweight (skin/dermal) LC_{50} between 500 and less than 2500 ppm (gas) LC_{50} between 2.0 and less than 10.0 (mg/l) (vapour) LC_{50} between 0.5 and less than 1.0 (mg/l) (dust, mist)	Symbol	
		Signal word	Danger
		Hazard statement	Toxic if swallowed. (oral) Toxic in contact with skin (dermal) Toxic if inhaled (gas, vapour, dust, mist)

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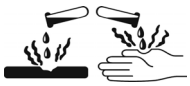
Hazard category *(cont'd)*	**Criteria**	**Hazard communication elements**	
4	LD_{50} between 300 and less than 2000 mg/kg bodyweight (oral) LD_{50} between 1000 and less than 2000 mg/kg bodyweight (skin/dermal) LC_{50} between 2500 and less than 5000 ppm (gas) LC_{50} between 10.0 and less than 20.0 (mg/l) (vapour) LC_{50} between 1.0 and less than 5.0 (mg/l) (dust, mist)	Symbol	
		Signal word	Warning
		Hazard statement	Harmful if swallowed (oral) Harmful in contact with skin (dermal) Harmful if inhaled (gas, vapour, dust, mist)
5	LD_{50} between 2000 and 5000 (oral or skin/dermal) 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). See also the additional criteria: • Indication of significant effect in humans • Any mortality at Category 4 • Significant clinical signs at Category 4 • Indication from other studies.	Symbol	*No symbol*
		Signal word	Warning
		Hazard statement	May be harmful if swallowed (oral) May be harmful in contact with skin (dermal) May be harmful if inhaled (gas, vapour, dust, mist)

A2.18 Skin corrosion/irritation (See Chapter 3.2 for details)

<table>
<tr><th>Hazard category</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1

Corrosive Including sub-categories A, B, and C; see Chapter 3.2, Table 3.2.1</td><td rowspan="3">1. For substances and tested mixtures:
• Human experience showing irreversible damage to the skin;
• Structure/activity or structure property relationship to a substance or mixture already classified as corrosive;
• pH extremes of ≤ 2 and ≥ 11.5 including acid/alkali reserve capacity;
• Positive results in a valid and accepted in vitro skin corrosion test; or
• 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).
2. If data for a mixture are not available, use bridging principles in 3.2.3.2.
3. If bridging principles do not apply,
(a) For mixtures where substances can be added: Classify as corrosive if the sum of the concentrations of corrosive substances in the mixture is ≥ 5% (for substances with additivity); or
(b) For mixtures where substances cannot be added: ≥ 1%. See 3.2.3.3.4.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>Causes severe skin burns and eye damage</td></tr>
</table>

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Hazard category *(cont'd)*	Criteria	Hazard communication elements	
2 **Irritant** **(applies to all authorities)**	1. *For substances and tested mixtures* • Human experience or data showing reversible damage to the skin following exposure of up to 4 hours; • Structure/activity or structure property relationship to a substance or mixture already classified as an irritant; • Positive results in a valid and accepted *in vitro* skin irritation test; or • 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). 2. *If data for a mixture are not available*, use bridging principles in 3.2.3.2. 3. *If bridging principles do not apply*, classify as an irritant if: (a) For mixtures where substances can be added: the sum of concentrations of corrosive substances in the mixture is ≥ 1% but ≤ 5%; the sum of the concentrations of irritant substances is ≥ 10%; or the sum of (10 × the concentrations of corrosive ingredients) + (the concentrations of irritant ingredients) is ≥ 10%; or (b) For mixtures where substances cannot be added: ≥ 3% (see 3.2.3.3.4).	Symbol	
		Signal word	Warning
		Hazard statement	Causes skin irritation

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Hazard category *(cont'd)*	Criteria	Hazard communication elements	
3 **Mild Irritant** **(applies to some authorities)**	1. *For substances and tested mixtures* • 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). 2. *If data for a mixture are not available* and the bridging principles in 3.2.3.2. 3. *If bridging principles do not apply*, classify as mild irritant if: • For mixtures where substances can be added the sum of the concentrations of irritant substances in the mixture is ≥ 1% but ≤ 10%; • For mixtures where substances cannot be added: the sum of the concentrations of mild irritant substances is ≥ 10%; • the sum of (10 × the concentrations of corrosive substances) + (the concentrations of irritant substances) is ≥ 1% but ≤ 10%; or • the sum of (10 × the concentrations of corrosive substances) + (the concentrations of irritant substances) + (the concentrations of mild irritant substances) is ≥ 10%.	Symbol	*No symbol*
		Signal word	Warning
		Hazard statement	Causes mild skin irritation

A2.19 Serious eye damage/eye irritation (See Chapter 3.3 for details)

Hazard category	Criteria	Hazard communication elements	
1 **Irrever-sible Effects**	1. *For substances and tested mixtures* • Classification as corrosive to skin; • Human experience or data showing damage to the eye which is not fully reversible within 21 days; • Structure/activity or structure property relationship to a substance or mixture already classified as corrosive; • pH extremes of < 2 and > 11.5 including buffering capacity; • Positive results in a valid and accepted *in vitro* test to assess serious damage to eyes; or • Animal experience or test data that the substance or mixture produces either (1) in at least one animal, effects on the cornea, iris or conjunctiva that are not expected to reverse or have not reversed; or (2) 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). 2. *If data for a mixture are not available*, use bridging principles in 3.3.3.2. 3. *If bridging principles do not apply*, (a) For mixtures where substances can be added: Classify as Category 1 if the sum of the concentrations of substances classified as corrosive to the skin and/or eye Category 1 substances in the mixture is ≥ 3%; or (b) For mixtures where substances cannot be added: ≥ 1 (see 3.3.3.3.4).	Symbol	
		Signal word	Danger
		Hazard statement	Causes serious eye damage

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Hazard category *(cont'd)*	Criteria	Hazard communication elements	
2A **Irritant**	1. *For substances and tested mixtures* • Classification as severe skin irritant; • Human experience or data showing production of changes in the eye which are fully reversible within 21 days; • Structure/activity or structure property relationship to a substance or mixture already classified as an eye irritant; • Positive results in a valid and accepted *in vitro* eye irritation test; or • Animal experience or test data that indicate that the substance/mixture produces a positive response in at least 2 of 3 tested animals of: corneal opacity ≥ 1, iritis ≥ 1, or conjunctival edema (chemosis) ≥ 2 (Table 3.3.2). 2. *If data for a mixture are not available*, use bridging principles in 3.3.3.2. 3. *If bridging does not apply*, classify as an irritant (2A) if: (a) For mixtures where substances can be added: the sum of the concentrations of skin and/or eye Category 1 substances in the mixture is ≥ 1% but ≤ 3%; the sum of the concentrations of eye irritant substances is ≥ 10%; or the sum of (10 × the concentrations of skin and/or eye category 1 substances) + (the concentrations of eye irritants) is ≥ 10%; (b) For mixtures where substances cannot be added: the sum of the concentrations of eye irritant ingredients is 3% (see 3.3.3.3.4).	Symbol	
		Signal word	Warning
		Hazard statement	Causes serious eye irritation
2B **Mild Irritant**	1. *For substances and tested mixtures* • Human experience or data showing production of mild eye irritation; • Animal experience or test data that indicate that the lesions are fully reversible within 7 days (see Table 3.3.2). 2. *If data for a mixture are not available*, use bridging principles in 3.3.3.2. 3. *If bridging does not apply*, classify as an irritant (2B) if: (a) For mixtures where substances can be added: the sum of the concentrations of skin and/or eye Category 1 substances in the mixture is ≥ 1% but ≤ 3%; the sum of the concentrations of eye irritant substances is ≥ 10%; or the sum of (10 × the concentrations of skin and/or eye category 1 substances) + (the concentrations of eye irritants) is ≥ 10%; (b) For mixtures where substances cannot be added: the sum of the concentrations of eye irritant ingredients is ≥ 3% (see 3.3.3.3.4).	Symbol	*No symbol*
		Signal word	Warning
		Hazard statement	Causes eye irritation

A2.20 Respiratory sensitizer (See Chapter 3.4 for details)

<table>
<tr><th>Hazard category</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">1. For substances and tested mixtures
If there is human evidence that the individual substance induces specific respiratory hypersensitivity, and/or
Where there are positive results from an appropriate animal test.
2. If these mixture meets the criteria set forth in the “Bridging Principles” through one of the following:
(a) Dilution;
(b) Batching;
(c) Substantially similar mixture.
3. If bridging principles do not apply, classify if any individual respiratory sensitizer in the mixture has a concentration of:
≥ 1.0% Solid/Liquid
≥ 0.2% Gas</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>May cause allergic or asthmatic symptoms or breathing difficulties if inhaled</td></tr>
</table>

A2.21 Skin sensitizer (See Chapter 3.4 for details)

Hazard category	Criteria	Hazard communication elements	
1	1. *For substances and tested mixtures* If there is evidence in humans that the individual substance can induce sensitization by skin contact in a substantial number of persons, or Where there are positive results from an appropriate animal test. 2. *If the mixture meets the criteria* set forth in the "Bridging Principles" through one of the following: (a) Dilution; (b) Batching; (c) Substantially similar mixture. 4. *If bridging principles do not apply*, classify if any individual skin sensitizer in the mixture has a concentration of: ≥ 1.0% Solid/Liquid/Gas	Symbol	
		Signal word	Warning
		Hazard Statement	May cause allergic skin reaction

A2.22 Germ cell mutagenicity (See Chapter 3.5 for details)

<table>
<tr><th>Hazard Category</th><th>Criteria for classification</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1
(Both 1A and 1B)</td><td rowspan="3">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 mixtures containing ≥ 0.1 % of such a substance.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">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 mixtures containing ≥ 1.0 % of such a substance.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Warning</td></tr>
<tr><td>Hazard Statement</td><td>Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</td></tr>
</table>

A2.23 Carcinogenicity (See Chapter 3.6 for details)

Hazard category	Criteria	Hazard communication elements	
1 (both 1A and 1B)	Known or presumed human carcinogen including mixtures containing ≥ 0.1% of such a substance.	Symbol	
		Signal word	Danger
		Hazard statement	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard.
2	Suspected human carcinogen including mixtures containing more than ≥ 0.1 or ≥ 1.0 % of such a substance (see Notes 1 and 2 in Table 3.6.1 of Chapter 3.6).	Symbol	
		Signal word	Warning
		Hazard statement	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard*)

* *Some authorities will choose to label according to this provision, others may not.*

A2.24 (a) Toxic to reproduction (See Chapter 3.7 for details)

Hazard category	Criteria	Hazard communication elements	
1 (Both 1A and 1B)	Known or presumed human reproductive toxicants (see criteria in section 3.7.2 of Chapter 3.7) or mixtures containing ≥ 0.1% or ≥ 0.3 % of such a substance (see section 3.7.3 and Notes 1 and 2 of Table 3.7.1, Chapter 3.7).	Symbol	
		Signal word	Danger
		Hazard statement	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)
2	Suspected human reproductive toxicants (see criteria in section 3.7.2 of Chapter 3.7) or mixtures containing ≥ 0.1% or ≥ 3.0 % of such a substance (see section 3.7.3 and Notes 3 and 4 of Table 3.7.1, Chapter 3.7).	Symbol	
		Signal word	Warning
		Hazard statement	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)

Continued on next page

A2.24 (b) Effects on or via lactation (See Chapter 3.7)

<table>
<tr><th>Hazard category
(cont'd)</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">Additional category for effects on or via lactation</td><td rowspan="3">Substances which cause concern for the health of breastfed children (see criteria in section 3.7.2 of Chapter 3.7);
or, mixtures containing ≥ 0.1% or ≥ 0.3 % of such a substance (see section 3.7.3 and Notes 1 and 2 of Table 3.7.1, Chapter 3.7).</td><td>Symbol</td><td>No symbol</td></tr>
<tr><td>Signal word</td><td>No signal word</td></tr>
<tr><td>Hazard Statement</td><td>May cause harm to breast-fed children</td></tr>
</table>

A2.25 Specific target organ systemic toxicity following single exposure (See Chapter 3.8 for details)

Hazard category	Criteria	Hazard communication elements	
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. 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.	Symbol	
		Signal word	Danger
		Hazard statement	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)
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. 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.	Symbol	
		Signal word	Warning
		Hazard statement	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)

Continued on next page

Hazard category *(cont'd)*	**Criteria**	**Hazard communication elements**	
3	(a) (Respiratory tract irritation) Evidence on the substance or mixture of transient irritant effects on respiratory tract in humans; ***or*** (b) (Narcotic effects) Evidence on the substance or mixture of transient narcotic effects from animal studies and in humans.	Symbol	
		Signal word	Warning
		Hazard statement	Respiratory tract irritation) May cause respiratory irritation ***or*** (Narcotic effects) May cause drowsiness or dizziness

A2.26 Specific target organ systemic toxicity following repeated exposure (See Chapter 3.9 for details)

Hazard category	Criteria	Hazard communication elements	
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. Mixture that lacks sufficient data, but contains Category 1 ingredient: ≥ 1 to ≤ 10% for some authorities; and ≥ 10% for all authorities.	Symbol	
		Signal word	Danger
		Hazard statement	Causes damage to organs (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)
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. 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 contains Category 2 ingredient: ≥ 1.0 or ≥ 10%.	Symbol	
		Signal word	Warning
		Hazard statement	May cause damage to organs (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)

A2.27 Aspiration hazard (See chapter 3.10 for details)

<table>
<tr><th>Hazard category</th><th>Criteria</th><th colspan="2">Hazard communication elements</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">1. For substances and tested mixtures
• 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;
• Hydrocarbons with a kinematic viscosity of 20.5 mm^2/s or less, measured at 40 °C;
2. If data for a mixture are not available, use bridging principles in 3.10.3.2.
3. If bridging principles do not apply, classify under Aspiration hazard Category 1:
• 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, measured at 40 °C;
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.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Danger</td></tr>
<tr><td>Hazard statement</td><td>May be fatal if swallowed and enters airways</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">1. Substances other than those classified in Category 1 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.
2. If data for a mixture are not available, use bridging principles in 3.10.3.2.
3. If bridging principles do not apply, classify under Aspiration hazard Category 2:
• 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;
• 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.</td><td>Symbol</td><td>  </td></tr>
<tr><td>Signal word</td><td>Warning</td></tr>
<tr><td>Hazard statement</td><td>May be harmful if swallowed and enters airways</td></tr>
</table>

A2.28 (a) Acute hazards to the aquatic environment (See Chapter 4.1 for details)

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

Continued on next page

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

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

A2.28 (b) Chronic hazards to the aquatic environment (See Chapter 3.10 for details)

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

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Hazard category *(cont'd)*	**Criteria**	**Hazard communication elements**	
3	1. *For substances:* • 10 mg/l < L(E)C_{50} ≤ 100 mg/l; and • Lack the potential to rapidly biodegrade and/or have the potential to bioaccumulate (BCF≥ 500 or if absent log Kow ≥ 4); unless • Chronic NOECs > 1mg/l. 2. *For mixtures,* use bridging principles (see 4.1.3.4). 3. *If bridging principles do not apply,* • [Concentration of Chronic 1] × M × 100 + [Concentration of Chronic 2] × 10 + [Concentration of Chronic 3] > 25% where M is a multiplying factor (see 4.1.3.5.5.5). 4. *For mixtures with no usable information for one or more relevant ingredients, c*lassify using the available information and add the statement: "x percent of the mixture consists of component(s) of unknown hazards to the aquatic environment".	Symbol	*No symbol*
		Signal word	*No signal word*
		Hazard statement	Harmful to aquatic life with long lasting effects
4	1. *For substances:* • poorly soluble and no acute toxicity is observed up the water solubility • Lack the potential to rapidly biodegrade and have the potential to bioaccumulate (BCF≥ 500 or if absent log Kow ≥ 4); unless • Chronic NOECs > 1mg/l. 2. *For mixtures,* use bridging principles (see 4.1.3.4). 3. *If bridging principles do not apply,* • Sum of concentrations of components classified as Chronic 1, 2, 3 or 4 > 25%. 4. *For mixtures with no usable information for one or more relevant ingredients, c*lassify using the available information and add the statement: "x percent of the mixture consists of component(s) of unknown hazards to the aquatic environment".	Symbol	*No symbol*
		Signal word	*No signal word*
		Hazard statement	May cause long lasting harmful effects to aquatic life