International Organization of the Flavor Industry

The International Fragrance Association

EXPLANATORY DOCUMENT - IFRA-IOFI LABELLING MANUAL 2025

FOR THE HAZARD CLASSIFICATION AND LABELLING OF FLAVORING AND FRAGRANCE SUBSTANCES ACCORDING TO THE UN GHS and UN TDG.

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IMPORTANT INFORMATION IN REGARD TO THE RELEASE OF THE LABELLING MANUAL 2025 (LM 2025)

Attachments II and III on NCSs

The IFRA-IOFI GHS Task Force would like to inform users that during the preparation of the 2025 edition of the IFRA-IOFI LM several system bugs affecting the content of Attachments II and III for Natural Complex Substances (NCS) were identified. Due to these technical issues, and in order to avoid introducing inconsistencies into the 2025 edition, it was agreed to maintain Attachments II and III unchanged compared to the 2024 edition (= “freeze”).

Consequently, users may notice occasional discrepancies in the classification of certain NCS components between Attachments I and III. This reflects the fact that Attachment I incorporates updates made over the past year, while Attachment III remains unchanged due to the system bugs identified (see above).

The GHS TF considers this to be the most pragmatic approach for the time being and will continue to explore how to resolve the technical issues for the future.

Update on CMR substances

- Diphenyl oxide (DPO) (CAS n° 101-84-8): Based on the available data of DPO (including information on the ECHA dissemination portal) and the data presented by the Lead Registrant (LR), the IFRA CMR and ED Task Force 5TF), found no arguments against the conclusion of the LR to self-classify this ingredient as toxic for Reproduction Category 1B (Repr. 1B). IFRA subsequently launched a consultation to gather any additional relevant toxicological data that might warrant reconsideration of this classification. However, no further information was submitted. Consequently, **the DPO is included in the IFRA-IOFI LM 2025 with a Repr. 1B classification**.

- Estragole (CAS n°. 140-67-0): The IFRA CMR and ED TF has completed its evaluation of estragole. No changes were identified, and the classification remains unchanged, i.e. **Carcinogenic Category 2** and **Mutagenic Category 2** in the **LM 2025**.
- Hexylene glycol (CAS n°107-41-5): The LR classifies this substance as Repr. 2, but the IFRA CMR and ED TF has been unable to obtain access to the relevant studies after two years of follow-up. As a result, the CMR and ED TF cannot reach a conclusion due to lack of data, and **the current entry in the LM (no Repr. 2 classification) remains in LM 2025 (i.e., no Repr. 2 classification**).

‘High impact’ changes list

The IFRA-IOFI GHS TF has evaluated 203 "chemicals” throughout the year which may result in changes to classification and other details for those ingredients. Those changes which may be considered significant and impactful to member companies are included in the table below. Note that this list is not exhaustive and does not cover every change in the Manual, or indeed every classification change. For example, a change to physical data such as liquid/solid status, or changes to LD50 values within the same classification category, or a change of name/synonyms, would not be considered impactful, and are not listed here. Further, not every classification change is listed – only changes considered to have a ‘high impact’, such as the addition of UN TDG classification, changes requiring the addition of a pictogram, and certain other hazards such as CMRs and corrosivity. These are collected here as an ‘at-a-glance’ reference. As a reminder, all change indicators can be seen in column AC (for GHS change indicators) and column AL (for transport change indicators) of the LM, where ‘x’ indicates a change, and ‘+’ indicates an addition.

LMID	CAS no.	EC / List no.	Name	Change:	Reason for change:	Footnote(s)
LM7209	101-84-8	202-981-2	Diphenyl oxide	Health: Addition of REP1B/H360Fd	Conclusion of CMR WG assessment.	NA
LM5702	68039-69-0	268-276-7	1-Cyclohexylethyl 2-butenoate	Environmental: Addition of EHC2/H411 Transport: Addition of 9;III;UN3082	Supported by study data published since previous GHS TF assessment.	NA
LM8995	166432-52-6	417-840-2	1,3-Undecadien-5-yne	Health: Addition of AH 1	Flagged as 100% hydrocarbon (HC).	NA
LM4859	71-41-0	200-752-1	Amyl alcohol	Environmental: Addition of EHC2/H411 Transport: Note, UN remains 3;III;UN1105	REACH dossier updated with EHC2/H411 and supporting study data since last review.	12, 15, 17
LM1993	137-32-6	205-289-9	2-Methylbutanol	Environmental: Addition of EHC2/H411 Transport: Note, UN remains 3;III;UN1105	REACH dossier updated with EHC2/H411 and supporting study data since last review.	12

LM1335	123-51-3	204-633-5	Isoamyl alcohol	Environmental: Addition of EHC2/H411 Transport: Note, UN remains 3;III;UN1105	REACH dossier updated with EHC2/H411 and supporting study data since last review.	12
LM8278	19139-31-2	242-833-4	Dihexyl fumarate	Environmental: Addition of EHC1/H410 Transport: Addition of 9;III;UN3082	REACH dossier updated with EHC1/H410 and supporting study data since last review.	NA
LM2157	112-54-9	203-983-6	Lauric aldehyde	Environmental: Addition of EHC2/H411 Transport: Addition of 9;III;UN3082	REACH dossier updated with EHC2/H411 and supporting study data since last review.	NA
LM1980	57934-97-1	261-020-5 / 915-768-0	Ethyl 2-ethyl-6,6-dimethylcyclohex-2-ene-1-carboxylate	Environmental: EHC3/H412 to EHC2/H411 Transport: Addition of 9;III;UN3082	New study data supporting EHC2/H411 made available since last review.	NA
LM1930	77851-07-1	278-776-7 / 915-768-0	Ethyl 2,3,6,6-tetramethylcyclohex-2-ene-1-carboxylate	Environmental: EHC3/H412 to EHC2/H411 Transport: Addition of 9;III;UN3082	New study data supporting EHC2/H411 made available since last review.	NA
LM6203	564-20-5	209-269-0	Sclareolide	Environmental: Addition of EHC2/H411 Transport: Addition of 9;III;UN3077	REACH dossier updated with EHC2/H411 and supporting study data since last review.	NA
LM2280	93-29-8	202-236-1	Isoeugenyl acetate	Health: Addition of SS1B/H317	REACH dossier for isomer CAS 93-28-7 updated with SS1B/H317 and supporting study data since last review; GHS TF applied read-across.	NA
LM9919	5912-87-8	NA / 813-782-0	(E)-2-Methoxy-4-prop-1-en-1-ylphenyl acetate	Health: Addition of SS1B/H317	REACH dossier for isomer CAS 93-28-7 updated with SS1B/H317 and supporting study data since last review; GHS TF applied read-across.	NA

LM5638	93-28-7	202-235-6	Eugenyl acetate	Health: Addition of SS1B/H317	REACH dossier updated with SS1B/H317 and supporting study data since last review.	NA
LM4776	499-75-2	207-889-6	Carvacrol	Health: Addition of SCI1/H314, EDI1/H318. Transport: Addition of 8;II;UN1760	REACH dossier updated with SCI1B/H314, EDI1/H318 and supporting study data since last review.	12
LM3218	104-55-2	203-213-9	Cinnamaldehyde	Environmental: EHA2/H401, EHC3/H412 to EHA1, EHC2 Transport: Addition of 9;III;UN3082	Updated study data available in CLH proposal dossier.	10, 12
LM4918	NA	238-620-0 / 946-324-4	Reaction Mass of (4R)-4-isopropenyl-1-methylcyclohexene and, etc	Health: Addition of AH1	Component d-Limonene (CAS 5989-27-5) present at >10%, + viscosity of <20.5mm2/s at 40°C, this gives AH1.	NA

Deleted entries

As part of the ongoing management of the IFRA-IOFI Labelling Manual, entries may be subject to deletion, and 13 substances have been deleted from the LM 2024 and therefore not listed in the LM 2025. This may be due to low usage, as indicated in the latest IFRA Volume of Use (VoU) and IOFI poundage surveys, or due to the nature of the material and its typical use – e.g., functional materials are not in the scope of the LM. Some functional materials are listed in the LM due to historical reasons, and these will be removed on a case-by-case basis as part of ongoing reviews.

Please find listed below the materials deleted for the 2025 IFRA-IOFI Labelling Manual.

LIST OF ENTRIES DELETED FROM THE LABELLING MANUAL 2025

LMID	**CAS** no.	**EC** / List no.	**Name**	**Reason for deletion**
LM1094	118-60-5	204-263-4	Ethyl hexyl salicylate	UV filter (functional)
LM5751	75-04-7	200-834-7	Ethyl amine gas	Functional
LM2081	75-04-7	200-834-7	Ethylamine	Functional
LM2108A	8042-47-5	232-455-8	White mineral oil, petroleum. Relates to grade with visc <=20.5mm2/s	Functional
LM2108B	8042-47-5	232-455-8	White mineral oil, petroleum. Relates to grade with visc >20.5mm2/s	Functional
LM9060	58-86-6	200-400-7	d-Xylose	Functional
LM9299	142-47-2	205-538-1	Monosodium glutamate	Functional
LM3572	34590-94-8	252-104-2	Dipropylene glycol monomethyl ether	Functional

LM3423	88917-22-0	406-880-6	Dipropylene glycol monomethyl ether acetate	Functional
LM8708	6938-94-9	230-072-0	Diisopropyl adipate	Functional
LM2532	61788-85-0	500-147-5	Castor oil, hydrogenated, ethoxylated	Functional
LM1243	131-11-3	205-011-6	Dimethyl phthalate	Functional
LM7078	120-93-4	204-436-4	2-Imidazolidinone	Functional

Added entries

LMID	CAS no.	EC / List no.	NAME
LM1343	56-41-7	200-273-8	L-Alanine
LM5273	617-45-8	210-513-3	Acid D,L-aspart
LM4607	72-18-4	200-773-6	L-Valine
LM7880	929625-08-1, 1001252-30-7	482-030-8, 695-374-0	2-(2,2,7,7-Tetramethyltricyclo [6.2.1.01,6]undec-5-en-5-yl)propan-1-ol

Re-wording of column header F to “Additional Identifier”

The header for column F has been changed from “Alternative CAS No.” to “Additional Identifier”, as this more accurately reflects the intended use of data in this column. There are 2 main scenarios where information may be entered in this column:

1. Where a material may be known by more than one CAS number, the identifier generally considered to be the primary or ‘main’ CAS shall be entered in column E, and the alternative entered in column F. This additional CAS number is provided for information purposes only and should not be taken as the primary identifier.
2. In the case of reaction products / reaction masses and similar, the list number provided in column I should always be considered as the primary identifier. The CAS numbers of the starting materials are provided in column F for information purposes only.

In case of any discrepancy or confusion regarding which hazard classifications may be applicable to a given identifier, please refer to the information provided in a supplier’s Safety Data Sheet.

We welcome your comments on content or lay-out. Please send your observations/remarks to carregui@ifrafragrance.org .

A. GENERAL CONSIDERATIONS

The IFRA/IOFI GHS Task Force, with global representation, including Brazil, Europe, the United States and Japan, classifies fragrance and flavoring materials following the criteria laid out in the UN GHS guidance document, which is currently the 10th revised edition (the so-called "Purple Book", which can be downloaded from https://unece.org/transport/dangerous-goods/ghs-rev10-2023 .

In addition, the Task Force also assigns UN Transport classifications. The Task Force takes into account the physical/chemical, toxicological and eco-toxicological data that have been reviewed for these substances at the time of the publication of this LM. Substances that are to be classified as hazardous, as well as those which are not classifiable based on current knowledge, are included in the attached lists.

The basis and justifications for decisions taken in the area of hazard assessment are documented in the Modus Operandi (MO). This document ensures an identical approach within the Fragrance and Flavor Industry during the classification process and to serve as a reference of supplementary convention and expert interpretation for specific fragrance and flavoring raw materials. The benefit of this activity is to provide a single global classification of all flavoring and fragrance materials to avoid regional differences as the GHS standards are introduced globally over time.

Please note, the MO is continuously reviewed and updated, as appropriate.

B. USE OF THE IFRA/IOFI LABELLING MANUAL

The information provided in this LM is intended to provide guidance to companies aiming to achieve a consistent hazard classification and labelling for fragrance and flavoring ingredients. It must be stressed that:

- Any official regional classification of substances prevails over self-classification of the GHS Task Force, unless there is evidence for a more severe classification.
- The Attachments to this Manual are not comprehensive and the absence of a substance or a specific classification should not be taken to imply that no classification and/or labelling is required.
- In order to make the Attachments as comprehensive as possible, the GHS Task Force welcomes any proposal for additions or amendments based on voluntarily sharing such knowledge within the Flavor and Fragrance Industry.
- The listing of a substance in one of the Attachments does not mean an approval for use in fragrances or flavorings. Actually, some of the substances may be subject to restrictions or even bans for specific applications, as stipulated in the IFRA Standards, EU Cosmetic Legislation, flavoring regulations, etc.
- The implementation of a new or an amended classification or labelling should be initiated after publication of a new version of the LM (see section C).
- For some of the substances, individual limit concentrations have been officially assigned in Annex VI of the EU regulation (EC) No 1272/2008 (referred to further on as the CLP Regulation). They are mentioned in the Attachments and must be followed instead of the general so-called 'administrative limit concentrations' when classifying a mixture according to the conventional method of the EU CLP Regulation.
- Each supplier is reminded that they bear the final responsibility for the appropriate classification and labelling of the products they place on the market, based on the composition of their product.

a) Aspiration hazard (UN GHS: AH Cat 1).

Some substances and mixtures pose a specific hazard upon ingestion by the entry through the oral or nasal cavity, or indirectly from vomiting, into trachea and lower respiratory system. The criteria for classification are purely of a physicochemical nature (hydrocarbons or mixtures containing >10% hydrocarbons with a kinematic viscosity at 40° C of ≤20,5 mm²/s).

Based on measured results for a number of NCSs with hydrocarbon contents between 10 and 90+ %, and on similar measurements of some flavoring and fragrance compounds, the Task Force has come to the conclusion that in practice, substances and mixtures containing more than 10% of hydrocarbon(s) fall within the criteria for viscosity and/or surface tension, unless the material is a solid or reported to be a viscous liquid.

In the absence of data for a specific NCS, and based on the above information, the following procedure is recommended:

- Determine the hydrocarbon content of substances via supplier information and/or analysis and via calculation, classify as AH Cat 1 if more than 10% hydrocarbons are present.
- Non-classification should only be possible if viscosity measurement results are available for a specific substance, or mixture.

b) Classification of NCSs

NCSs (such as essential oils and volatile solvent extracts) used in fragrance compounds (mixtures) and flavorings are known to have variable composition. This variability is well-defined by ISO norms and/or by industry statistics. The bridging principle approach, as defined by GHS and CLP, must be utilised to assess the impact of this variability on the classification. If robust test data are available, a specific quality of an NCS must be classified based on results, as indicated in GHS (cf. 1.3.2.3).

This classification, however, is only applicable to the specific material and its composition tested and other NCSs where the chemical composition has been demonstrated to be equivalent.

For other grades of NCSs, and for endpoints for which reliable test data are lacking, the UN GHS guidance document incorporates requirements whereby the hazard classification of complex substances shall be evaluated based on levels of their known chemical constituents. Where knowledge about hazardous constituents exists, e.g., on substances with sensitizing, toxic, harmful, corrosive, environmentally hazardous properties, the classification and subsequent labelling of these NCSs should follow the additivity and summation rules for mixtures (GHS).

Guidance for the typical presence of hazardous constituents occurring in the NCSs is provided in Attachment III. These values are either the result of an agreement on typical compositions among the industry or taken from the literature. Footnote 19 in Attachment II covers the NCSs with compositional data reviewed by the IFRA Natural Complex Substances Task Force (NCS TF) at the time of the LM publication. Constituents that are not classified, or have only an aspiration hazard assigned, are not mentioned. Aspiration hazard of a constituent is accounted for in the total hydrocarbon content. Similarly, the flammability of the individual constituent is not mentioned, because the flammability of the NCS is determined by the actual flashpoint of the NCS itself.

The GHS hazard classification derived following the approach indicated above, can be found in Attachment II of this Manual. It is worth noting that some uncertainty exists, particularly concerning older test data, as to whether the quality of an NCS on which the tests were carried out corresponds to today's quality.

In Attachment II, footnote 3 a-e covers cases where the classification was obtained by reliable test data for a particular endpoint, as opposed to calculation.

c) Classification of Fragrance and Flavoring compounds containing NCSs

Flavoring and Fragrance compounds are mixtures according to the UN GHS guidance document. In practice, test data on the flavoring or fragrance compounds are often not available or collected. Therefore, the classification of these products should be based on the chemical composition and must include the contributions of hazardous substances present as constituents in the NCSs present in the formulation.

Available robust test data on specific NCSs may take precedence over the classification based on the levels of their known chemical constituents.

This implies that the hazardous substances present in an NCS should be known and this information has to be included in the Safety Data Sheet of that NCS (section 3: Composition/information on ingredients, according to the UN GHS guidance document). In case of absence of this information, Attachment III can be used (see disclaimer).

d) Transport classification

The assignment of UN numbers, packing group, and hazard class is based on the criteria as laid down in the Recommendations on the Transport of Dangerous Goods Model Regulations as published by the United Nations, 22nd edition (https://unece.org/transport/dangerous-goods/un-model-regulations-rev-22).

The assigned UN number is a recommendation, which should be used to verify detailed differences between the various modes of transport, such as air, sea and land (land transport can be separated into road, rail and in-land waterways).

Also, for transport, due account should be given to any national deviations from the rules applied here.

C. IMPLEMENTATION AND OTHER INFORMATION

The time for implementing new or modified classifications as indicated in attachments I and II should not exceed a period of six months following the publication of the LM. Also, regional requirements must be observed. Please note that any legal/regional requirement would prevail (see disclaimer).

The GHS Task Force adds the following clarification regarding compliance:

- New or modified classifications apply to the substances defined by the indicated Chemical Abstracts Service Registry numbers (CAS numbers) regardless of whether alternative CAS numbers exist.
- New additions to the lists are marked with "+ "
- Corrections and modifications are indicated with "x "
- For those substances for which classification and labelling was not considered necessary based on the data available to the GHS Task Force, and consequently termed 'Not Classified', be aware that classification might arise when considering the presence of classified constituents, as outlined above.

UN GHS

Following the UN GHS guidance document, the GHS Task Force applies the criteria for all hazard classes and categories (except for some physico-chemical hazards not encountered in F&F ingredients, see Appendix 1) as mentioned in the so-called "Purple Book" aiming at harmonized UN GHS classifications of substances. The results comprise the indication of Flash Point, Acute Toxicity Estimate (ATE), and M-factor. The labelling elements (Pictogram, Signal Word, Hazard statements, Precautionary statements) that have to be used for a given hazard classification are spelled out in Annexes 1, 2 and 3 to the UN GHS.

The table of UN GHS hazard classifications for chemically defined substances can be found in attachment I of the LM.

EU-CLP

The difference in classification between UN-GHS and EU CLP is caused by the difference of implementation of the GHS building blocks. In Appendix II to this letter, the differences in building blocks between the two classification schemes are given.

For the blue coloured fields, the schemes are identical; the yellow colour indicates a difference.

To derive the respective classification for the EU CLP from the UN-GHS classification, one has to take out the building blocks that are not applicable in the EU from the UN-GHS classification. For example, a substance with ATO 5 (3700), FL 4, SCI 3, will become "Not classified" under EU CLP, as the building blocks for Acute Toxicity Category 5, Flammability Category 4 and Skin Irritation Category 3 have not been implemented under the EU CLP Regulation.

US-OSHA

Since June 1, 2016, the new US-OSHA standard for hazard communication, HazCom 2012, based on GHS criteria, has become fully effective.

Not all UN-GHS building blocks have been implemented; an overview is given in Appendix II. As indicated above, the applicable classification can be derived by “subtracting” those elements that are not required. Also note the point below.

Please note that the US-OSHA standard for hazard communication has different approaches for trigger limits concerning certain health hazard endpoints, including Carcinogenic and Mutagenic Category 2. This has the potential to impact the classification of essential oils. As always, national legislation must be adhered to regionally.

NCSs

Classifications provided in this annex are indicative based on available data at the time of publishing the LM. They do not represent classifications for all qualities of an NCS, as these may vary substantially. Therefore, IFRA/IOFI cannot guarantee the accuracy of this information that is provided in good faith only to help companies identify possible classification considerations for their materials. It is the responsibility of NCS suppliers and/or manufacturers to ensure their NCSs are appropriately classified based on test data or on constituent information for their specific supplied material.

The table of UN TDG and UN GHS hazard classifications/hazard statements for NCS can be found in Attachment II of the LM.

In the absence of information regarding the actual levels of hazardous substances present in NCSs, this list should be considered for the hazard classification of NCSs and for their contributions to the hazard classification of flavoring and fragrance compounds.

The table on the potential presence of hazardous constituents in NCSs above 0.1%, containing percentage information and UN GHS classification, can be found in attachment III of the LM.

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Appendix I
Overview of GHS hazard classes considered, and the abbreviations used.

Appendix II
Overview of UN-GHS, EU-CLP and US-OSHA building blocks.

Annex I

PLEASE CLICK THE ICON BELOW TO ACCESS THE TERMS AND CONDITIONS OF USE OF THE LABELLING MANUAL

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Appendix I

GHS hazard classes and related abbreviations:
The table below reflects the 4 physical, 11 health and 1 environmental hazard classes as well as abbreviations that have been used.

GHS Hazard Class	GHS Class abbreviation	GHS Hazard Categories
Flammable gas	FG	1, 2
Pressurised gas	PG	PG
Flammable liquid	FL	1, 2, 3, 4
Flammable solid	FS	1, 2
Acute toxicity, oral	ATO	1, 2, 3, 4, 5
Acute toxicity, dermal	ATD	1, 2, 3, 4, 5
Acute toxicity, inhalation	ATI	1, 2, 3, 4, 5
Skin corrosion/irritation	SCI	1A,1B,1C, 2, 3
Serious eye damage/eye irritation	EDI	1, 2A, 2B
Respiratory sensitization	RS	1
Skin sensitization	SS	1, 1A,1B
Germ cell mutagenicity	MUT	1A,1B, 2
Carcinogenicity	CAR	1A,1B, 2
Reproductive Toxicity	REP	1A,1B, 2
Specific Target Organ toxicity – Single exposure	STO-SE	1, 2
Specific Target Organ toxicity – Single exposure	STO-SE 3-NE	3 (Transient target organ effects: narcotic effects)
Specific Target Organ toxicity – Single exposure	STO-SE 3-RI	3 (Transient target organ effects: respiratory tract irritation)
Specific Target Organ toxicity – Repeated exposure	STO-RE	1, 2
Aspiration hazard	AH	1, 2
Hazardous to aquatic environment	EH	A1, A2, A3, C1, C2, C3, C4

Appendix II

Difference of building blocks between UN-GHS, EU-CLP and US-OSHA:

GHS Hazard Class	GHS Class Abbreviation	GHS Hazard Categories	EU-CLP	US-OSHA
Pressurised gas	PG	Yes	Yes	Yes
Flammable gas	FG	1, 2	1, 2	1, 2
Flammable liquid	FL	1, 2, 3, 4	1, 2, 3	1, 2, 3, 4
Flammable solid	FS	1, 2	1, 2	1, 2
Acute toxicity, oral	ATO	1, 2, 3, 4, 5	1, 2, 3, 4	1, 2, 3, 4
Acute toxicity, dermal	ATD	1, 2, 3, 4, 5	1, 2, 3, 4	1, 2, 3, 4
Acute toxicity, inhalation	ATI	1, 2, 3, 4, 5	1, 2, 3, 4	1, 2, 3, 4
Skin corrosion/irritation	SCI	1A,1B,1C, 2, 3	1A,1B,1C, 2	1A,1B,1C, 2
Serious eye damage/eye irritation	EDI	1, 2A, 2B	1, 2	1, 2A, 2B
Respiratory sensitization	RS	1A,1B	1A,1B	1A,1B
Skin sensitization	SS	1A,1B	1A,1B	1A,1B
Germ cell mutagenicity	MUT	1A,1B, 2	1A,1B, 2	1A,1B, 2
Carcinogenicity	CAR	1A,1B, 2	1A,1B, 2	1A,1B, 2 *
Reproductive Toxicity	REP	1A,1B, 2	1A,1B, 2	1A,1B, 2 *
Reprotox: Effects on or via lactation		yes	yes	1A,1B, 2 *
Specific Target Organ systemic toxicity - Single exposure	STO-SE	1, 2	1, 2	1, 2
Specific Target Organ systemic toxicity - Single exposure	STO-SE	3 (Transient target organ effects: narcotic effects)	3-NE	3-NE
Specific Target Organ systemic toxicity - Single exposure	STO-SE	3 (Transient target organ effects: respiratory tract irritation)	3-RI	3-RI
Specific Target Organ systemic toxicity - Repeated exposure	STO-RE	1, 2	1, 2	1, 2
Aspiration hazard	AH	1, 2	1	1
Acute aquatic toxicity	EH	A1, A2, A3	A1	Not required
Chronic aquatic toxicity	EH	C1, C2, C3, C4	C1, C2, C3, C4	Not required

* Note: for mixtures a lower cut-off limit applies.

Legend: blue=identical; yellow=different.