# Safety Data Sheet

**according to Regulation (EC) No 1907/2006 (REACH)**

Trade name:
Product No:
Version: 4.0 / EN



Print date:
Revision date: 08.07.2019

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier:

**Substances**

**Substance name**
**CAS No**
**Index No**
**EC No**
**REACH No**
***The transition period according to REACH Regulation, article 23 has not yet expired.***
**Authorisation No**

---

**Mixtures**

**Trade name / designation** ***MethaSol***

**Other means of identification**

**Hazard components for labelling**

**Kommentiert [A1]:**
**Yellow marked: additional information required for the extended SDS (eSDS)**
**Blue** marked sentences are illustrating the single ingredients of mixtures (Use only if appropriate, e.g. for multi component mixtures).
***Italic*** *marked sentences are used as content examples.*
***Purple*** *= new REACH, Annex II (UN-GHS) phrases*
*Layout examples are given in chapters 2, 3, 8, 11 and 12. Of course other illustration alternatives and alternative substructures may be used in practice too.*

**Kommentiert [A2]:**
This section of the SDS shall prescribe how the substance or mixture shall be identified and how the identified relevant uses, the name of the supplier of the substance or mixture and the contact detail information of the supplier of the substance or mixture, including an emergency contact, shall be provided in the safety data sheet.

**Kommentiert [A3]:** The product identifier shall be provided in accordance with Article 18(2) of Regulation (EC) No 1272/2008 in the case of a substance and in accordance with Article 18(3)(a) of Regulation (EC) No 1272/2008 in the case of a mixture, and as provided on the label in the official language(s) of the Member State(s) where the substance or mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise. For substances subject to registration, the product identifier shall be consistent with that provided in the registration and the registration number assigned under Article 20(3) of this Regulation shall also be indicated.

**Kommentiert [A4]:**
2. The product identifier for a substance shall consist of at least the following:
(a) if the substance is included in Part 3 of Annex VI, a name and an identification number as given therein;
(b) if the substance is not included in Part 3 of Annex VI, but appears in the classification and labelling inventory, a name and an identification number as given therein;
(c) if the substance is not included in Part 3 of Annex VI nor in the classification and labelling inventory, the number provided by the CAS (hereinafter referred to as 'the CAS number'), together with the name set out in the nomenclature provided by the IUPAC (hereinafter referred to as 'the IUPAC Nomen-clature'), or the CAS number together with another international chemical name(s); or
(d) if the CAS number is not available, the name set out in the IUPAC Nomenclature or another international chemical name(s).
Where the name in the IUPAC nomenclature exceeds 100 characters, one of the other names (usual name, trade name, abbreviation) referred to in section 2.1.2 of Annex VI to
Regulation (EC) No 1907/2006 may be used provided that the notification in accordance with Article 40 includes both the name set out in the IUPAC Nomenclature and the other name used.

**Kommentiert [A5]:** optional

**Kommentiert [A6]:**
Other names or synonyms by which the substance or mixture is labelled or commonly known, such as alternative names, numbers, company product codes, or other unique identifiers may be provided.

**Kommentiert [A7]:**
For mixtures only
CLP, Art. 18b
The product identifier for a mixture shall consist of both of the following:
(a) the trade name or the designation of the mixture;
(b) the identity of all substances in the mixture that contribute to the classification of the mixture as regards acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, respiratory or skin sensitisation, specific target organ toxicity (STOT) or aspiration hazard.
Where, in the case referred to in (b), that requirement leads to the provision of multiple chemical names, a maximum of four chemical names shall suffice, unless more than four names are needed to reflect the nature and the severity of the hazards.
... [1]

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses**

***In compliance with the conditions described in the annex to this safety data sheet.***
***Summarized overview of registered and identified uses and their respective exposure scenarios: pls. see annex to this SDS.***
***See section 16 for a comprehensive list of uses, for which an exposure scenarion is provided as an annex.***

**Uses advised against:**
***Do not use for injecting or spraying.***
**Reasons:**

**1.3 Details of the supplier of the safety data sheet:**

**Supplier:**
**Name**
**Address**
**Information contact**
**E-Mail (competent person)**

**Importer / Only Representative:**
**Name**
**Address**
**Information contact**
**E-Mail (competent person)**

**1.4 EMERGENCY TELEPHONE NUMBER:**

*Foot note (general hint):*
*Layout examples are given in the sections 2, 3, 8, 11 and 12. Of course other illustration alternatives and alternative substructures may be used in practice too.*

**Kommentiert [A8]:** At least the identified uses relevant for the recipient(s) of the substance or mixture shall be indicated. This shall be a brief description of what the substance or mixture is intended to do, such as “flame retardant”, “antioxidant”. The uses which the supplier advises against and the reasons why shall, where applicable, be stated. This need not be an exhaustive list.

Where a chemical safety report is required, the information in this subsection of the safety data sheet shall be consistent with the identified uses in the chemical safety report and the exposure scenarios from the chemical safety report set out in the annex to the safety data sheet.

ECHA FAQ:
For registered substances for which a Chemical Safety Report (CSR) is required, the information appearing in section 1.2 of the SDS needs to be in line with the identified uses in the CSR (under REACH, the definition of use goes beyond the chemical function) and the Exposure Scenario (ES) annexed to the SDS. Intuitive ES titles can be reported in section 1.2. When the use descriptor system is used in the ES, it is advised that, in section 1.2, the uses of the substance are described in a generic wording while remaining consistent with that of the use descriptor system. Reporting the use descriptor codes in section 1.2 is not recommended as it may lead to lengthy lists. The Process and Product Categories in the use descriptor system can be used as an indication.
For registered substances for which a CSR is not required (between 1-10 tonnes/year), substances not yet registered or not subject to registration (e.g. below 1 tonne/year or listed in Annex IV or V) and mixtures, the intended uses known to the supplier need to be indicated, with a brief description of what the substance or mixture is intended to do, such as "flam ... [2]

**Kommentiert [A9]:** At least the identified uses relevant for the recipient(s) of the substance or mixture shall be indicated. This shall be a brief description of what the substance or mixture is intended to do, such as “flame retardant”, “antioxidant”.
Where a chemical safety report is required, the information in this subsection of the safety data sheet shall be consistent with the id ... [3]

**Kommentiert [A10]:** Standard phrase for extended SDS.

**Kommentiert [A11]:** The uses which the supplier advises against and why shall, where applicable, be stated. This need not be an exhaustive list.

**Kommentiert [A12]:** Example

**Kommentiert [A13]:**
Reason why uses advised against.
REACH, Article 37.3 requirement, not yet explicitely content in REACH, annex I.
Example: Indoor use on large surface area will potentially exceed Consumer DNEL (assessed by ECETOC TRA).

**Kommentiert [A14]:** The supplier, whether it is the manufacturer, importer, only representative, downstream user or distributor, shall be identified. The full address and telephone number of the supplier shall be given as well as an e-mail address (e.g. sds@xyz.de) for a competent person responsible for the safety data sheet. ... [4]

**Kommentiert [A15]:** manufacturer/importer/only representative/downstream user/distributor:

**Kommentiert [A16]:**
In case of non-EU Supplier

**Kommentiert [A17]:** References to emergency information services shall be provided. If an official advisory body exists in the Member State where the substance or mixture is placed on the market (this may be the body responsible for receiving information relating to health referred to in Article 45 of Regulation (EC) No 1272/2008, its telephone number shall be given and can suffice. If availability of such services is limited for any ... [5]

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture:

| Classification according to Regulation (EC) No 1272/2008 [CLP] | SCL and/or M-factor | Classification procedure |
|---|---|---|
| *Flam. Liq. 2, H225* | | *On basis of test data* |
| *Acute Tox. 3, H301* | | *Practical experience / human evidence* |
| *Acute Tox. 3, H311* | | *Practical experience / human evidence* |
| *Acute Tox. 3, H331* | | *Practical experience / human evidence* |
| *STOT RE 1, H372* | *C ≥ 1 %: STOT RE 1, H372*<br>*0,1 ≤ C < 1 %: STOT RE 2, H373* | *On basis of test data* |
| *Aquatic Acute 1, H400* | *M = 100* | *On basis of test data* |
| *Aquatic Chronic 1, H410* | *M = 10* | *On basis of test data* |
| *Repr. 1A, H360D* | *C ≥ 3 %* | *Legal classification* |

**Additional information:**
*Full text of H- and EUH-phrases: see SECTION 16.*

**Kommentiert [A18]:**
This section of the safety data sheet shall describe the hazards of the substance or mixture and the appropriate warning information associated with those hazards.
The most important adverse physicochemical, human health and environmental effects shall be listed consistent with Sections 9 to 12 of the safety data sheet, in a way as to allow non-experts to identify the hazards of the substance or mixture

**Kommentiert [A19]:**
The classification of the substance or the mixture which results from the application of the classification criteria in Regulation (EC) No 1272/2008 shall be given. Where the supplier has notified information regarding the substance to the classification and labelling inventory in accordance with Article 40 of Regulation (EC) No 1272/2008, the classification given in the safety data sheet shall be the same as the classification provided in that notification.

If the mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008, this shall be clearly stated.

Information on the substances in the mixture is provided under subsection 3.2..

The most important adverse physical, human health and environmental effects shall be listed in accordance with Sections 9 to 12 of the safety data sheet, in such a way as to allow non-experts to identify the hazards of the substance or mixture.

**Kommentiert [A20]:**
Proposed standard phrases (see www.euphrac.eu) are for example:
Calculation method.
Bridging principle "Dilution".
Bridging principle "Batching".
Bridging principle "Concentration of highly hazardous mixtures".
Bridging principle "Interpolation within one toxicity category".
Bridging principle "Substantially similar mixtures".
Bridging principle "Aerosols".

For mixtures it may be possible to use also the „calculation method“ as classification procedure.

**Kommentiert [A21]:**
If the classification, including the hazard statements, is not written out in full, reference shall be made to Section 16 where the full text of each classification, including each hazard statement, shall be given.

## 2.2 Label elements

**Kommentiert [A22]:** Based on the classification, at least the following elements appearing on the label in accordance with Regulation (EC) No 1272/2008 shall be provided: hazard pictogram(s), signal word(s), hazard statement(s) and precautionary statement(s). A graphical reproduction of the full hazard pictogram in black and white or a graphical reproduction of the symbol only may be substituted for the colour pictogram provided in Regulation (EC) No 1272/2008. The applicable label elements in accordance with Article 25 and Article 32(6) of Regulation (EC) No 1272/2008 shall be provided.

**Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]**

**Hazard pictograms**

*GHS02* *GHS06* *GHS08* *GHS09*

**Signal word:**
*Danger*

**Hazard statements:**

| | |
|---|---|
| *H225* | *Highly flammable liquid and vapour.* |
| *H301+H311+H331* | *Toxic if swallowed, in contact with skin or if inhaled.* |
| *H372* | *Causes damage to organs through prolonged or repeated exposure (oral, kidneys).* |
| *H360D* | *May damage the unborn child.* |
| *H410* | *Very toxic to aquatic life with long lasting effects.* |

**Precautionary statements:**

| | |
|---|---|
| *P210* | *Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.* |
| *P260* | *Do not breathe dust/fume/gas/mist/vapours/spray.* |
| *P273* | *Avoid release to the environment.* |
| *P280* | *Wear protective gloves/protective clothing/eye protection/face protection.* |
| *P308+P311* | *IF exposed or concerned: Call a POISON CENTER/doctor.* |
| *P301+P330* | *IF SWALLOWED: Rinse mouth.* |
| *P303+P361+P353* | *IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.* |
| *P304+P340* | *IF INHALED: Remove person to fresh air and keep comfortable for breathing.* |

**Supplemental Hazard information:**

**Kommentiert [A23]:** if applicable. For example EUH071

**Special rules for supplemental label elements for certain mixtures:**

**Kommentiert [A24]:** To be added if applicable for mixtures only. For example EUH202

**Additional labelling:**

**Kommentiert [A25]:** REACH, Annex XVII and other (e.g. Biocide, Surfactants etc)

### 2.3 Other hazards

Adverse physicochemical effects:
Adverse human health effects and symptoms:
Adverse environmental effects:
Other adverse hazards:

## SECTION 3. Composition/information on ingredients

### 3.1 Substances

**Substance name:**
**INDEX No:**
**EC No:**
**REACH No:**
**CAS No:**

**Purity:**
**Synonymes:**
**Stabilisers:**
**Hazard impurities:**

### 3.2 Substances

*not applicable*

**Kommentiert [A26]:** Information on whether the substance or mixture meets the criteria for PBT or vPvB in accordance with Annex XIII shall be provided. Information shall be provided on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture, such as formation of air contaminants during hardening or processing, dustiness, explosive properties which do not fulfil the classification criteria of part 2 Section 2.1 of Annex I to Regulation (EC) No 1272/2008, dust explosion hazards, cross-sensitisation, suffocation, freezing, high potency for odour or taste, or environmental effects like hazards to soil-dwelling organisms, or photochemical ozone creation potential. The statement "May form explosible dust-air mixture if dispersed" is appropriate in the case of a dust explosion hazard.
Example phrases:
"May form explosible dust-air mixture if dispersed"
"Substance is an endocrine disruptor"
"Substance meets the criteria for PBT or vPvB according to Regulation (EC) No 1207/2006, Annex XIII"
"Substance is phototoxic"

**Kommentiert [A27]:**
This section of the safety data sheet shall describe the chemical identity of the ingredient(s) of the substance or mixture, including impurities and stabilising additives as set out below. Appropriate and available safety information on surface chemistry shall be indicated.

**Kommentiert [A28]:**
The chemical identity of the main constituent of the substance shall be provided by providing at least the product identifier or one of the other means of identification given in Subsection 1.1.
The chemical identity of any impurity, stabilising additive, or individual constituent other than the main constituent, which is itself classified and which contributes to the classification of the substance shall be provided as follows:
(a) . the product identifier in accordance with Article 18(2) of Regulation (EC) No 1272/2008;
(b) . if the product identifier is not available, one of the other names (usual name, trade name, abbreviation) or identification numbers.
Suppliers of substances may choose to list in addition all constituents including non-classified ones.
This subsection may also be used to provide information on multi-constituent substances.

**Kommentiert [A29]:** optional

**ALTERNATIVE for mixtures**

## 3.1 Substances
*not applicable*

## 3.2 Mixtures

**Description of the mixture:**
*Aqueous solution of ABC.*

**Hazardous ingredients**

***EXAMPLE***

| Substance name | CAS No. | INDEX No. | EC No. | Concentration | Classification according Regulation (EC) No. 1272 [CLP] | SCL and/or M-factor |
|---|---|---|---|---|---|---|
| *ABC* | *123-45-6* | | *123-456-7* | *50 %* | *Flam. Liq. 2, H225*<br>*Acute Tox. 3, H301*<br>*Acute Tox. 3, H311*<br>*Acute Tox. 3, H331*<br>*STOT RE 1, H372*<br><br><br><br>*Aquatic Acute 1, H400*<br>*Aquatic Chronic 1, H410*<br>*Repr. 1A, H360D* | <br><br><br><br>*C ≥ 1 %:*<br>*STOT RE 1, H372*<br>*0,1 ≤ C < 1 %:*<br>*STOT RE 2, H373*<br>*M = 100*<br>*M = 10*<br>*C ≥ 3 %* |

| Substance name | REACH No. |
|---|---|
| *ABC* | *01-XXXXXXXXXX-YY-ZZZZ* |

**Additional information:**
*Full text of H- and EUH-phrases: see SECTION 16.*
*This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.*

**Kommentiert [A30]:**
The product identifier when available, conc. or conc. ranges and classifications shall be provided for substances. Suppliers of mixtures may choose to list in addition all substances in the mix., incl. substances not meeting the criteria for classification. This info shall enable the recipient to identify readily the hazards of the substances in the mixture. The hazards of the mix. shall be given in Section 2. The conc. of the substances in a mix. shall be described as either of the following:
(a) . exact % in descending order by mass or volume, if technically possible;
(b) . ranges of % in descending order by mass or volume, if technically possible. When using a range of %, the health and environmental hazards shall describe the effects of the highest conc. of each ingredient. If the effects of the mix. as a whole are available, this info shall be included under Section 2. Where the use of an alternative chemical name is permitted in accordance with Article 24 of Regulation (EC) No 1272/2008, that name can be used.

**Kommentiert [A31]:**
This example is different to SECTION 2!

**Kommentiert [A32]:**
CLP, article 24:
The manufacturer, importer or downstream user of a substance in a mixture may submit a
request to the Agency to use an alternative chemical name which refers to that substance in
a mixture either by means of a name that identifies the most important functional chemical
groups or by means of an alternative designation, where the substance meets the criteria set out in Part 1 of Annex I and where he can demonstrate that disclosure on the label or in the safety data sheet of the chemical identity of that substance puts the confidential nature of
his business, in particular his intellectual property rights, at risk.

Where the use of an alternative chemical name has been allowed, but the classification of
the substance in a mixture for which the alternative name is used no longer meets the
criteria set out in section 1.4.1 of Annex I, the supplier of that substance in a mixture shall
use the product identifier for the substance in accordance with Article 18 on the label and
in the safety data sheet, and not the alternative chemical name.

Where the supplier of a mixture, before 1 June 2015, has demonstrated under Art. 15 of 1999/45/EC that the disclosure of the chemical identity of a substance in a mixture puts the confidential nature of his business at risk, he can continue to use the agreed alternative name for the purposes of this Regulation.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General information**

**Following inhalation**

**Following skin contact**

**Following eye contact**

**Following ingestion**

**Self-protection of the first aider:**

### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Effects

### 4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor

Special treatment

**Kommentiert [A33]:**
This section of the safety data sheet shall describe the initial care in such a way that it can be understood and given by an untrained responder without the use of sophisticated equipment and without the availability of a wide selection of medications. If medical attention is required, the instructions shall state this, including its urgency.

**Kommentiert [A34]:**
First aid instructions shall be provided by relevant routes of exposure. Subdivisions shall be used to indicate the procedure for each route, such as inhalation, skin, eye and ingestion.
4.1.2. . Advice shall be provided as to whether:
(a) . immediate medical attention is required and if delayed effects can be expected after exposure;
(b) . movement of the exposed individual from the area to fresh air is recommended;
(c) . removal and handling of clothing and shoes from the individual is recommended; and
(d) . personal protective equipment for first aid responders is recommended.

**Kommentiert [A35]:**
Specify first whether immediate medical attention is required.

**Kommentiert [A36]:** SDS Guidance text

**Kommentiert [A37]:** SDS Guidance text

**Kommentiert [A38]:** SDS Guidance text

**Kommentiert [A39]:** SDS Guidance text

**Kommentiert [A40]:**
Briefly summarised information shall be provided on the most important symptoms and effects, both acute and delayed, from exposure.

**Kommentiert [A41]:**
Where appropriate, information shall be provided on clinical testing and medical monitoring for delayed effects, specific details on antidotes (where they are known) and contraindications.

For some substances or mixtures, it may be important to emphasise that special means to provide specific and immediate treatment shall be available at the workplace.

## SECTION 5: Firefighting measures

**Kommentiert [A42]:**
This section of the safety data sheet shall describe the requirements for fighting a fire caused by the substance or mixture, or arising in its vicinity.

### 5.1 Extinguishing media

Suitable extinguishing media

**Kommentiert [A43]:**
Information shall be provided on the appropriate extinguishing media.

Unsuitable extinguishing media

**Kommentiert [A44]:**
Indications shall be given whether any extinguishing media are inappropriate for a particular situation involving the substance or mixture.

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

**Kommentiert [A45]:**
Information shall be provided on hazards that may arise from the substance or mixture, like hazardous combustion products that form when the substance or mixture burns, such as "may produce toxic fumes of carbon monoxide if burning" or "produces oxides of sulphur and nitrogen on combustion".

### 5.3 Advice for fire-fighters

**Kommentiert [A46]:**
Advice shall be provided on any protective actions to be taken during fire-fighting, such as "keep containers cool with water spray", and on special protective equipment for fire-fighters, such as boots, overalls, gloves, eye and face protection and breathing apparatus.

**Additional information**

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**

Protective equipment
Emergency procedures

**For emergency responders**

Personal protective equipment

### 6.2 Environmental precautions

### 6.3 Methods and material for containment and cleaning up

**For containment**

**For cleaning up**

**Other information**

### 6.4 Reference to other sections

**Additional information**

**Kommentiert [A47]:**
This section of the safety data sheet shall recommend the appropriate response to spills, leaks, or releases, to prevent or minimise the adverse effects on persons, property and the environment. It shall distinguish between responses to large and small spills, in cases where the spill volume has a significant impact on the hazard. If the procedures for containment and recovery indicate that different practices are required, these shall be indicated in the safety data sheet.

**Kommentiert [A48]:**
Advice shall be provided related to accidental spills and release of the substance or mixture such as:
(a) . the wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing;
(b) . removal of ignition sources, provision of sufficient ventilation, control of dust; and
(c) . emergency procedures such as the need to evacuate the danger area or to consult an expert.

**Kommentiert [A49]:**
Advice shall be provided related to suitable fabric for personal protective clothing (such as "appropriate: Butylene"; "not appropriate: PVC").

**Kommentiert [A50]:**
Advice shall be provided on any environmental precautions to be taken related to accidental spills and release of the substance or mixture, such as keeping away from drains, surface and ground water.

**Kommentiert [A51]:**
Appropriate advice shall be provided on how to contain a spill. Appropriate containment techniques may include any of the following:
(a) . bunding, covering of drains;
(b) . capping procedures.

**Kommentiert [A52]:**
Appropriate advice shall be provided on how to clean up a spill. Appropriate clean up procedures may include any of the following:
(a) . neutralisation techniques;
(b) . decontamination techniques;
(c) . adsorbent materials;
(d) . cleaning techniques;
(e) . vacuuming techniques;
(f) . equipment required for containment/clean up (include the use of non-sparking tools and equipment where applicable).

**Kommentiert [A53]:**
Any other information shall be provided relating to spills and releases, including advice on inappropriate containment or clean up techniques, such as by indications like "never use.. ".

**Kommentiert [A54]:**
If appropriate Sections 8 and 13 shall be referred to.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**Protective measures**

Advice on safe handling

Fire preventions

Aerosol and dust generation preventions

Environmental precautions

**Advice on general occupational hygiene**

**Kommentiert [A55]:**
This section of the safety data sheet shall provide advice on safe handling practices. It shall emphasise precautions that are appropriate to the identified uses referred to under subsection 1.2 and to the unique properties of the substance or mixture.

Information in this section of the safety data sheet shall relate to the protection of human health, safety and the environment. It shall assist the employer in devising suitable working procedures and organisational measures according to Article 5 of Directive 98/24/EC and Article 5 of Directive 2004/37/EC.

Where a chemical safety report is required, the information in this section of the safety data sheet shall be consistent with the information given for the identified uses in the chemical safety report and the exposure scenarios showing control of risk from the chemical safety report set out in the annex to the safety data sheet.

In addition to information given in this section, relevant information may also be found in Section 8.

**Kommentiert [A56]:**
Recommendations shall be specified to:

(a) . allow safe handling of the substance or mixture, such as containment and measures to prevent fire as well as aerosol and dust generation;
(b) . prevent handling of incompatible substances or mixtures;
(c) . draw attention to operations and conditions which create new risks by altering the properties of the substance or mixture, and to appropriate countermeasures; and
(d) . reduce the release of the substance or mixture to the environment, such as avoiding spills or keeping away from drains.

**Kommentiert [A57]:**
Advice on general occupational hygiene shall be provided, such as:

(a) . not to eat, drink and smoke in work areas; (b) . to wash hands after use; and
(c) . to remove contaminated clothing and protective equipment before entering eating areas.

## 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures and storage conditions**

Packaging materials

**Requirements for storage rooms and vessels**

**Hints on storage assembly**

Storage class

Materials to avoid

**Further information on storage conditions**

## 7.3 Specific end uses

Recommendations

Specific end uses

**Kommentiert [A58]:**
The advice provided shall be consistent with the physical and chemical properties described in Section 9 of the SDS. If relevant, advice shall be provided on specific storage requirements including:
(a) . How to manage risks with: explosive atmospheres; corrosive conditions; flammability hazards; incompatible substances/mixtures; evaporative conditions; potential ignition sources (including electrical equipment).
(b) . How to control the effects of: weather conditions; ambient pressure; temperature; sunlight; humidity; vibration.
(c) . How to maintain the integrity of the substance / mixture by the use of: stabilisers; anti-oxidants.
(d) . Other advice: e.g. ventilation requirements; specific designs for storage rooms or vessels (incl. retention walls and ventilation);
(iii) . quantity limits under storage conditions (if relevant); and
(iv) . packaging compatibilities.

**Kommentiert [A59]:**
For substances and mixtures designed for specific end use(s), recommendations shall relate to the identified use(s) referred to in subsection 1.2 and be detailed and operational. If an exposure scenario is attached, reference to it may be made or the information as required in subsections 7.1 and 7.2 shall be provided. If an actor in the supply chain has carried out a chemical safety assessment for the mixture, it is sufficient that the safety data sheet and the exposure scenarios are consistent with the chemical safety report for the mixture, rather than with the chemical safety reports for each substance in the mixture.

**Kommentiert [A60]:**
If industry- or sector-specific guidance is available, detailed reference to it (including source and issuing date) may be made.

## SECTION 8: Exposure controls/personal protection

***Preventive industrial medical examinations are to be carried out.***

### 8.1 Control parameters

#### Occupational exposure limits

| Limit value type (country of origin) | Substance name | EC-No. | CAS-No. | Occupational exposure limit value | | Monitoring and observation processes | Peak limitation | Source |
|---|---|---|---|---|---|---|---|---|
| | | | | Long term | Short term | | | |
| *AGW (DE)* | | | | | | | | *TRGS 900* |
| *OEL (EU)* | | | | | | | | |

#### Biological limit values

| Limit value type (country of origin) | Substance name | EC-No. | CAS-No. | Limit Value | Parameter | Test material | Test date | Source |
|---|---|---|---|---|---|---|---|---|
| *BGW (DE)* | *2-Propanol* | | *67-63-0* | 50 mg/l<br>50 mg/l | *Acetone* | *Urine (U)*<br>*Whole Blood (B)* | *b* | *TRGS 903* |

#### Exposure limits at intended use

**Kommentiert [A61]:**
This section of SDS shall describe the applicable occupational exposure limits and necessary risk management measures.
Where a CSR is required, the information in this section of the SDS shall be consistent with the information given for the identified uses in the CSR and the ES showing control of risk from the CSR set out in the annex to the SDS.

**Kommentiert [A62]:** Give a hint whether a preventive industrial medical examination is required, e.g. „Preventive industrial medical examinations according are to be carried out". Or similar.

**Kommentiert [A63]:**
Where available, the following national limit values, including the legal basis of each of them, which are currently applicable in the Member State in which the SDS is being provided shall be listed for the substance or for each of the substances in the mixture. When listing occupational exposure limit values, the chemical identity as specified in Section 3 shall be used.

**Kommentiert [A64]:**
Information on currently recommended monitoring procedures shall be provided at least for the most relevant substances.

**Kommentiert [A65]:**
Not mandatory: if chosen, overflow factor, Instantaneous value, category must be given here under.
See for more info: TRGS 900.
Otherwise:
Overflow factor x AGW = Shortterm value

**Kommentiert [A66]:**
The national occupational exposure limit values that correspond to Community occupational exposure limit values acc. 98/24/EC, including any notations as referred to in Article 2(1) of 95/320/EC

**Kommentiert [A67]:**
The national occupational exposure limit values that correspond to Community limit values acc. 2004/37/EC, including any notations as referred to in Article 2(1) of 95/320/EC

**Kommentiert [A68]:**
metabolite

**Kommentiert [A69]:**
Whole Blood (B), Erythrocytes (E), Plasma/Serum (P/S), Urine (U)

**Kommentiert [A70]:**
The national biological limit values that correspond to Union biological limit values in accordance with Directive 98/24/EC, including any notations as referred to in Article 2(3) of Decision 2014/113/EU;

**DNEL/PNEC-values**

**Substance name**

Kommentiert [A71]: In case of mixtures multiple entries maybe possible.

**DNEL Worker**

| DNEL type | value | remark |
|---|---|---|
| Acute – dermal, local effects | | |
| Long-term – dermal, local effects | | |
| Long-term – dermal, systemic effects | | |
| Acute – inhalation, local effects | | |
| Acute – inhalation, systemic effects | | |
| Long-term – inhalation, local effects | | |
| Long-term – inhalation, systemic effects | | |

Kommentiert [A72]: If it is not possible to identify a DNEL (DMEL), then this shall be clearly stated and fully justified (REACH, Annex I, 1.4.2).

**DNEL Consumer**

| DNEL type | value | remark |
|---|---|---|
| Long-term – oral, systemic effects | | |
| Acute – dermal, local effects | | |
| Long-term – dermal, local effects | | |
| Long-term – dermal, systemic effects | | |
| Acute – inhalation, local effects | | |
| Acute – inhalation, systemic effects | | |
| Long-term – inhalation, local effects | | |
| Long-term – inhalation, systemic effects | | |

Kommentiert [A73]: If applicable

**PNEC**

| PNEC type | value | remark |
|---|---|---|
| PNEC aquatic, freshwater | | |
| PNEC aquatic, marine water | | |
| PNEC aquatic, intermittent release | | |
| PNEC sediment, freshwater | | |
| PNEC sediment, marine water | | |
| PNEC soil | | |
| PNEC sewage treatment plant | | |
| PNEC air | | |
| PNEC secondary poisoning | | |

Kommentiert [A74]: In the Guidance on information requirements and chemical safety assessment Part B: Hazard Assessment it's named PNEC water. PNEC aquatic is in compliance with terminus technicus use in CLP for the hazard class "Aquatic Toxicity".

Kommentiert [A75]: If it is not possible to derive the PNEC, then this shall be clearly stated and fully justified (REACH, Annex I, 3.3.2)

Kommentiert [A76]: No standardised procedure exists.

Kommentiert [A77]: no-effect concentration in food

**Risk management measures according to used control banding approach**

Kommentiert [A78]: OPTIONAL:
Where a control banding approach is used to decide on risk management measures in relation to specific uses, sufficient detail shall be given to enable effective management of the risk. The context and limitations of the specific control banding recommendation shall be made clear.

Control banding for chemicals according to the ILO CHEMICAL CONTROL TOOLKIT (ICCT)

| Task | Hazard band | Scale of use | Ability to become airborne | Control approach | Control guidance sheet |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Kommentiert [A79]: Dustiness (Y/N)
Volatility (Y/N)

**8.2 Exposure controls**

**Kommentiert [A80]:** The information required in the present subsection shall be provided, unless an ES containing that information is attached to the SDS.
Where the supplier has waived a test under Section 3 of Annex XI, he shall indicate the specific conditions of use relied on to justify the waiving.
Where a substance has been registered as an isolated intermediate (on-site or transported), the supplier shall indicate that this SDS is consistent with the specific conditions relied on to justify the registration in accordance with Article 17 or 18.

**Appropriate engineering controls**

**Personal protective equipment**

**Eye / Face protection**

Suitable eye protection

Other eye protection measures

**Skin protection**

Hand protection

**Kommentiert [A81]:** The type of gloves to be worn when handling the substance/ mixture shall be clearly specified based on the hazard of the substance/ mixture and potential for contact and with regard to the amount and duration of dermal exposure, including:
- the type of material and its thickness,
- the typical or minimum breakthrough times of the glove material.
If necessary any additional hand protection measures shall be indicated.

By short-term hand contact
Suitable gloves type
Suitable material
Breakthrough time:
Thickness of the glove material
Wear duration with occasional contact (splashs)

By long-term hand contact
Suitable gloves type
Suitable material
Breakthrough time:
Thickness of the glove material
Wear duration with permanent contact

Unsuitable material
Additional hand protection measures

Body protection

**Kommentiert [A82]:** If it is necessary to protect a part of the body other than the hands, the type and quality of protection equipment required shall be specified, such as gauntlets, boots, bodysuit based on the hazards associated with the substance or mixture and the potential for contact.

Other skin protection measures

**Kommentiert [A83]:** If necessary, any additional skin protection measures and specific hygiene measures shall be indicated.

**Respiratory protection**

**Kommentiert [A84]:** For gases, vapours, mist or dust, the type of protective equipment to be used shall be specified based on the hazard and potential for exposure, including air-purifying respirators, specifying the proper purifying element (cartridge or canister), the adequate particulate filters and the adequate masks, or self contained breathing apparatus.

**Thermal hazards**

**Kommentiert [A85]:** When specifying protective equipment to be worn for materials that represent a thermal hazard, special consideration shall be given to the construction of the PPE.

### 8.2.3 Environmental exposure controls:

**Kommentiert [A86]:** The information required by the employer to fulfil his commitments under Community environmental protection legislation shall be specified. Where a CSR is required, a summary of the risk management measures that adequately control exposure of the environment to the substance shall be given for the ES set out in the annex to the SDS.

**Consumer exposure control**

**Kommentiert [A87]:**
OPTIONAL for ext. SDS:
REMARK - ECHA Guidance Part G, 238 ff.:
Annex II does not specifically mention RMMs and OCs related to consumers, but section 8 of annex II stipulates that the RMM across all the identified uses shall be summarised in section 8 of the SDS. Potential exposure of consumers during the life of the substance resulting from identified downstream uses are to be covered in the CSA for a substance.
It is therefore recommended to add a section 8.2.3 in the extended safety data sheet to include measures related to consumer uses of the substance (as such or in mixtures) and to the service life of the substance in articles. This information is addressed to the downstream users under REACH
i) placing mixtures for use in the general public on the market and
ii) processing substances or mixtures into articles. It may also facilitate the communication related to substances of very high concern, for which risk management advice beyond downstream uses can be required under article 7 and article 33 of REACH.

Measures related to consumer uses of the substance (as such or in mixtures):

Measures related to the service life of the substance in articles:

## SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state:** **Colour:** **Odour:** **Odour threshold:**

| | Value | Concentration | Method | Temperature | Pressure | Remark |
|---|---|---|---|---|---|---|
| pH | | | | | | |
| Melting point/freezing point | | | | | | |
| Initial boiling point/boiling range | | | | | | |
| Flash point | | | | | | |
| Evaporation rate | | | | | | |
| Flammability (solid, gas) | | | | | | |
| Upper/lower flammability or explosive limits | | | | | | |
| Upper explosive limits | | | | | | |
| Lower explosive limits | | | | | | |
| Vapour pressure | | | | | | |
| Vapour density | | | | | | |
| Relative density | | | | | | |
| Solubility(ies) | | | | | | |
| Partition coefficient: n-octanol/water | | | | | | |
| Auto-ignition temperature | | | | | | |
| Decomposition temperature | | | | | | |
| Viscosity | | | | | | |
| Viscosity, dynamic | | | | | | |
| Viscosity, cinematic | | | | | | |
| Explosive properties | | | | | | |
| Oxidising properties | | | | | | |

**Kommentiert [A88]:** This section shall describe the empirical data relating to the substance/mixture, if relevant. The info shall be consistent with the info provided in the registration and/or in the CSR where required, and with the classification. Critical info such as test temperature + methods used, which affect the value of physical -chemical properties and safety characteristics, shall be provided for all testing results and, when available, for data acquired from the literature. However, if it is stated that a particular property or hazard does not apply, clearly differentiate between cases where no info is available and cases where negative test results are available. For mixtures, info shall normally be given on the properties of the mixture itself. If it is considered necessary to give info about the properties of individual components, please indicate clearly what the data refers to. The info shall be consistent with the info provided in the registration and/or in the CSR where required, and with the classification of the substance/ mixture and should support transport classification.

**Kommentiert [A96]:** Difference between „delivery state" and „standard conditions" necessary

**Kommentiert [A89]:** The pH shall be indicated of the substance/mixture as supplied or of an aqueous solution; in the latter case, indicate the concentration and temperature, preferably for room temperature. Where the pH can be properly measured, it shall be deter-mined from the original product. Otherwise, the pH of the dissolved substance shall be indi-cated. Also specify if the alkali or acid reserve has been considered.

**Kommentiert [A90]:** It should be stated whether the value indicated has been measured or calculated, and which substance(s) it refers to.

**Kommentiert [A91]:** Relative density of gases and vapors with respect to dry air. The relative density is a dimensionless quantity.

**Kommentiert [A92]:** Relative density of liquids + solids with respect to water.

**Kommentiert [A93]:** For mixtures, this is useful information with respect to the individual constituents only.

**Kommentiert [A94]:** Viscosity (dynamic or kinematic viscosity) or the flow times incl. the temperature shall be provided for the solvent separation test + the solvent content. For mixtures containing hydrocarbons in an overall concentration of 10% or more, the flow time or the kinematic viscosity at 40 °C shall be specified subject to CLP, Annex 1, 3.10. In addition:
- indicate vapour pressure at 50 °C for volatile fluids (in order to enable distinction between gases + liquids referring chapter 1.2 of the GHS)
- indicate most volatile component for mixtures where the vapour pressure is predominantly determined by this components
- saturated vapour concentration (SVC). SVC (in ml/m³= vapour pressure (hPa) · 987.2

**Kommentiert [A95]:** cinematic viscosity = dynamic viscosity / density

**9.2 Other information:**

**Physical hazards:**

If data for any of these hazard classes is not available, these hazard classes shall still be listed in the safety data sheet with a statement that data is not available or not applicable.

**Explosives**

**Justification for data waiving:**

**Screening procedures**

| | Value | Method | Remark |
|---|---|---|---|
| Exothermic decomposition energy | | | |
| Decomposition temperature | | | |
| Oxygen balance | | | |

**Safety characteristics**

| | Value | Method | Remark |
|---|---|---|---|
| *Thermal sensitivity: Number of fragments* | | *Regulation (EC) No 440/2008, Annex, A.14* | |
| *Sensitiveness to impact :Impact energy* | | | |
| *Sensitiveness to friction: Friction load* | | | |
| *Limiting impact energy* | | *UN Test series 4* | |
| *Fragmented length* | | | |
| *Limiting diameter* | | | |
| *Time for a pressure rise from 690 to 2070 kPa* | | | |
| *Limiting impact energy* | | | |
| *Limiting load* | | | |

**Assessment / Classification:**

**Flammable gases**

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Temperature | Pressure | Method | Remark |
|---|---|---|---|---|---|
| Lower explosion limit | | | | | |
| Upper explosion limit | | | | | |

**Assessment / Classification:**

**Kommentiert [A97]:** The following properties shall be clearly identified including, where appropriate, a reference to the test methods used and specification of appropriate units of measurement and/or reference conditions. If relevant for the interpretation of the numerical value, the method of determination shall also be provided (for example, the method for flash point, the open-cup/closed-cup method)

Other physical and chemical parameters shall be indicated as necessary, such as miscibility, fat solubility (solvent – oil to be specified), conductivity, or gas group. Appropriate and available safety information on redox potential, radical formation potential and photocatalytic properties shall be indicated.

**Kommentiert [A98]:** If data for any of these hazard classes is not available, these hazard classes shall still be listed in the safety data sheet with a statement that data is not available or not applicable.

**Kommentiert [A99]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A100]:** For example:
Molecular formula
Molecular weight

**Kommentiert [A101]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A102]:** Alternative test procedure: UN Manual of Tests and Criteria, Part I, UN Test 1 (b) Koenen test, UN Test 3 (a) (ii) BAM Fallhammer, UN Test 3 (b) (i) BAM friction apparatus.

**Kommentiert [A103]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A104]:** Only if hazard class applies, please give details on test data, e.g. as follows:

## Flammable aerosols

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Result | Method | Remark |
|---|---|---|---|---|
| Content of flammable components | | | | |
| Chemical heat of combustion | | | | |
| Ignition distance | | | | ***Testing is not required for foam aerosols.*** |
| Time equivalent | | | | |
| Deflagration density | | | | |
| Maximum flame height | | | | ***Testing is not required for spray aerosols.*** |
| Flame duration | | | | |

**Assessment / Classification:**

## Oxidising gases

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| Oxidising Power (OP) | | | |
| $X_i$ Content of the oxidising component | | | |
| Coefficient of oxygen equivalency | | | |

**Assessment / Classification:**

## Gases under pressure

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Result | Remark |
|---|---|---|---|
| Molecular weight | | | |
| Vapour pressure at 50 °C | | | |
| Vapour pressure at 20 °C | | | |
| Critical temperature | | | |
| Critical pressure | | | |
| Critical density | | | |

**Assessment / Classification:**

**Kommentiert [A105]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A106]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A107]:** X % by mass of the contents are flammable.

**Kommentiert [A108]:** For example
ΔHc(i) = Specific heat of combustion (kJ/g):

**Kommentiert [A109]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A110]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A111]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A112]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A113]:** For example:
Compressed gas (Comp. Gas) or
Liquefied gas (Liq. Gas) or
Refrigerated liquefied gas (Ref. Liq. Gas)
Dissolved gas (Diss. Gas)

## Flammable liquids

**Justification for data waiving:**

**Kommentiert [A114]:**
Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| Flash point | | | |
| Sustaining combustion | | | |

**Kommentiert [A115]:**
Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Flammable solids

**Justification for data waiving:**

**Kommentiert [A116]:**
Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| Burning rate | | | |
| Burning rate with wetted zone | | | |
| Moisture content | | | |

**Kommentiert [A117]:**
Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Self-reactive substances and mixtures

**Justification for data waiving:**

**Kommentiert [A118]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Screening procedures**

| | Value | Method | Remark |
|---|---|---|---|
| Exothermic decomposition energy | | | |
| Decomposition temperature | | | |

**Kommentiert [A119]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Safety characteristics:**

| | Value | Result | Method | Remark |
|---|---|---|---|---|
| Propagation of detonation | | *(Yes/Partially/No)* | | |
| Propagation of deflagration | | *(Yes, rapidly/Yes, slowly/No)* | | |
| Effect of heating under confinement | | *(Violent/Medium/Low/No)* | | |
| Explosive power | | *(Not low/Low/None)* | | |
| Self-accelerating decomposition temperature (SADT) | | | | |

**Kommentiert [A120]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A121]:** As result „Yes“, „Partial“ or „No“ is obtained from a Series A test.

**Kommentiert [A122]:** As result “Yes rapidly”, “Yes slowly” or “No“ is obtained from a Series C test.

**Kommentiert [A123]:** As result “Violent”, “Medium”, “Low” or “No“ is obtained from a Series E test.

**Kommentiert [A124]:** As result “Not low”, “Low” or “None“ is obtained from a Series F test.

**Assessment / Classification:**

## Pyrophoric liquids

**Justification for data waiving:**

**Kommentiert [A125]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristics:**

| | Value | Result | Method | Remark |
|---|---|---|---|---|
| Ignition time on contact with air | | ***No ignition within 5 minutes.*** | ***Regulation (EC) No. 440/2008, Annex, A.13*** | |
| Effect on filter paper | | | | |

**Kommentiert [A126]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Pyrophoric solids

**Justification for data waiving:**

**Kommentiert [A127]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristic:**

| | Result / Evaluation | Method | Remark |
|---|---|---|---|
| Ignition time on contact with air (s) | | | |

**Kommentiert [A128]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Self-heating substances and mixtures

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Result | Method | Remark |
|---|---|---|---|---|
| Induction time | | | | |
| Max. temperature rised | | | | |

**Assessment / Classification:**

## Substances or mixtures which, in contact with water emit flammable gases

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| step of the test procedure | | | |
| Maximum rate of evolution of flammable gas | | | |
| Chemical identity of the evolved gas | | | |

**Assessment / Classification:**

**Kommentiert [A129]:**
Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A130]:**
Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A131]:**
e.g. positive or negative

**Kommentiert [A132]:**
Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A133]:**
Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A134]:**
Reacts vigorously with water and spontaneous ignition of the evolved gas occurs.

## Oxidising liquids

**Justification for data waiving:**

**Kommentiert [A135]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| Preliminary test | | | |
| Mean pressure rise time of test mixture | | | |
| Mean pressure rise time of reference mixture | | | |
| Test with an inert substance | | | |

**Kommentiert [A136]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Oxidising solids

**Justification for data waiving:**

**Kommentiert [A137]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Safety characteristics:**

| | Value | Method | Remark |
|---|---|---|---|
| Preliminary test | | | |
| Mean burning time of test mixture | | | |
| Mean burning time of reference mixture | | | |

**Kommentiert [A138]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Assessment / Classification:**

## Organic peroxides

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Result | Method | Remark |
|---|---|---|---|---|
| Available oxygen content | | | | |
| Percentage of hydrogen peroxide | | | | |
| Propagation of detonation | | *(Yes/Partial/No)* | | |
| Propagation of deflagration | | *(Yes rapidly/Yes slowly/No)* | | |
| Effect of heating under confinement | | *(Violent/Medium /Low/No)* | | |
| Explosive power | | *(Not low/Low/None)* | | |
| Self-accelerating decomposition temperature (SADT) | | | | |

**Assessment / Classification:**

## Metal corrosion

**Justification for data waiving:**

**Safety characteristics:**

| | Value | Temperature | Test duration | Method | Remark |
|---|---|---|---|---|---|
| Corrosion rate (mm steel/year) | | | | | |
| Corrosion rate (mm aluminium/year) | | | | | |
| Intrusion depth | | | | | |

**Assessment / Classification:**

**Kommentiert [A139]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A140]:** Only if hazard class applies, please give details on test data, e.g. as follows:

**Kommentiert [A141]:** As result „Yes“, „Partial“ or „No“ is obtained from a Series A test.

**Kommentiert [A142]:** As result “Yes rapidly”, “Yes slowly” or “No“ is obtained from a Series C test.

**Kommentiert [A143]:** As result “Violent”, “Medium”, “Low” or “No“ is obtained from a Series E test.

**Kommentiert [A144]:** As result “Not low”, “Low” or “None“ is obtained from a Series F test.

**Kommentiert [A145]:** Option: A short standard phrase should be chosen from EuPhraC if hazard class is not applicable.

**Kommentiert [A146]:** Only if hazard class applies, please give details on test data, e.g. as follows:

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability

### 10.3 Possibility of hazardous reactions

### 10.4 Conditions to avoid:

### 10.5 Incompatible materials:

### 10.6 Hazardous decomposition products:

**Kommentiert [A147]:**
This section of the SDS shall describe the stability of the substance/mix.and the possibility of hazardous reactions occurring under certain conditions of use and also if rel-eased into the environment, incl., where appropriate, a reference to the test me-thods used. If it is stated that a parti-cular property does not apply or if info on a particular property is not available, the reasons shall be given.

**Kommentiert [A148]:** The reactivity hazards of the substance/mix. shall be descri-bed. Specific test data shall be provided for the substance/mixture as a whole, where available. However, the info may also be based on general data for the class or family of substance/mix. if such data adequately represent the anticipated hazard of the substance/mix. If data for mix. are not available, data on substances in the mix. shall be provided. In determining incompatibility, the substances, containers and contaminants that the substance/mix. might be expo-sed to during transportation, storage and use shall be considered.

**Kommentiert [A149]:**
It shall be indicated if the substance /mix. is stable or unstable under normal ambient and anticipated storage and handling condis of temp. and pressure. Any stabilisers which are, or may need to be, used to maintain the chemical stability of the substance/mix. shall be described. The safety significance of any change in the phys. appearance of the substance/r mixture shall be indicated.

**Kommentiert [A150]:**
If relevant, it shall be stated if the substance or mixture will react or polymerise, releasing excess pressure or heat, or creating other hazardous conditions. The conditions shall be described.

**Kommentiert [A151]:**
Cond.such as temp., pressure, light, shock, static discharge, vibrations or other physiccal stresses that might result in a hazardous situ-ation shall be listed and if appr. a brief descr. of measures to be taken to manage risks associated with such hazards shall be given.

**Kommentiert [A152]:**
Families of substances/mix. or specific substances, e.g. water, air, acids, bases, oxidising agents, with which the substance/ mixture could react to produce a hazardous situ- shall be listed and if appr. a brief descr. of measures to be taken to manage risks associated with such hazards shall be given.

**Kommentiert [A153]:**
Known and reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating shall be listed. Hazardous combustion products shall be included in Section 5 of SDS.

## SECTION 11: Toxicological information

**Toxicokinetics, metabolism and distribution**

### 11.1 Information on toxicological effects

***Ithalic*** *marked sentences are used as content examples*
*In case that test data regarding one endpoint/differentiation exist for the mixture itself, the classification is carried out according to the substance criteria (excluding CMR!).*
*If no test data exist, the criteria for mixture classification has to be used (calculation method); in this case the toxicological data of the ingredients are shown.*

The entry *Substance* illustrating the single ingredients/substances of mixtures (use only if appropriate, e.g. for multi component mixtures).
*If the mixture calculation method must be used.*

**Kommentiert [A154]:** This section of the SDS is meant for use primarily by medical professionals, occupational health and safety professionals and toxicologists. A concise but complete and comprehendsible description of the various toxicological (health) effects and the available data used to identify those effects shall be provided, including where appropriate info on toxicokinetics, metabolism and distribution. The info in this section shall be consistent with the info provided in the registration and/or in the CSR where required, and with the classification of the substance or mix.

**Kommentiert [A155]:**
Info shall be provided for each hazard class, differentiation or effect. If it is stated that the substance or mix. is not classified for a particular hazard class, differentiation or effect, the SDS shall clearly state whether this is due to lack of data, technical impossibility to obtain the data, inconclusive data or data which are conclusive although insufficient for classification; in the latter case the SDS shall specify "based on available data, the classification criteria are not met.". The data included in this subsection shall apply to the substance or mix. as placed on the market. If available, the relevant toxicological properties of the hazardous sub-stances in a mix. shall also be provided, such as the LD50, ATE or LC50. Where there is a substantial amount of test data on the substance or mix., it may be necessary to summarise results of the critical studies used, for example by route of exposure. Where the classification criteria for a particular hazard class are not met, info supporting this conclusion shall be provided.

**Kommentiert [A156]:**
*Absence of specific data:*
It may not always be possible to obtain information on the hazards of a substance or mixture. In cases where data on the specific substance or mixture are not available, data on similar substances or mixtures, if appropriate, may be used, provided the relevant similar substance or mixture is identified. Where specific data are not used, or where data are not available, this shall be clearly stated

*Interactive effects*
Information on interactions shall be included if relevant and available.

## Substance

**Acute toxicity**

**Practical experience / human evidence**

**Animal data**

| | Effect dose / -concentration | Value | Species | Method | Symptoms / delayed effects | Remark |
|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | |
| Acute oral toxicity | *LD50* | *1980 mg/kg bw* | *Rat* | *OECD 401* | | |
| Acute dermal toxicity | *ATE:* | *500 mg/kg bw* | | | | *converted Ac Toxicity poin Estimate* |
| Acute inhalative toxicity (gas) | | | | | | |
| Acute inhalative toxicity (vapour) | *LC50* | *> 20 mg/l/4h* | *Rat* | *Regulation (EC) No. 440/2008, Annex, B.2* | | |
| Acute inhalative toxicity (dust/mist) | | | | | | |
| ***Substance 2*** | | | | | | |

**Other information**

**Assessment / Classification**

**Skin corrosion/irritation**

**Practical experience / human evidence**

**Acid-/Alkali reserve (buffer capacity for mixtures with extreme pH values)**

Acidic reserve [g NaOH/100 g product]:

Alkaline reserve [g H2SO4/100 g product]:

**Animal data**

| | Species | Method | Exposure time | Result /Evaluation | Remark |
|---|---|---|---|---|---|
| ***Substance 1*** | ***Rabbit*** | ***OECD 404*** | | ***Erythema Scores: 2.3*** | ***irritant*** |

**In-vitro skin test** ***not corrosive (OECD 439)***

**Other information**

**Assessment / Classification** ***Causes skin irritation.***

**Kommentiert [A157]:** LD50 or ATpE/$ATE_{mix}$

**Kommentiert [A158]:** if any/relevant

**Kommentiert [A159]:** Information shall be provided on likely routes of exposure and the effects of the substance or mixture via each possible route of exposure, that is, through ingestion (swallowing), inhalation or skin/eye exposure. If health effects are not known, this shall be stated.

**Kommentiert [A160]:** LD50 oder ATpE/ for mixtures: $ATE_{mix}$

**Kommentiert [A161]:** LC50 or $cATpE/ATE_{mix}$

**Kommentiert [A162]:** e.g. exposure time for inhalative toxicity:4 h

**Kommentiert [A163]:** If appropriate, give mean scores for erythema /oedema.

**Kommentiert [A164]:** (Q)SAR and/or e.g. in vitro test results

**Kommentiert [A165]:** Inclusive special effect, e. g. defatting properties (R66/EUH66), indication of ** subcategory 1A, 1B, 1C, if possible.

**Eye damage/irritation**

**Practical experience / human evidence**

**Animal data**

| | Species | Method | Result / Evaluation | Remark |
|---|---|---|---|---|
| ***Substance 1*** | ***Albino rabbit*** | ***OECD 405*** | ***Corneal opacity***<br>***Scores: 0,7***<br>***Iritis***<br>***Scores: 0,7***<br>***Conjunctival Redness***<br>***Scores: 1,9***<br>***Conjunctival oedema (chemosis)***<br>***Scores: 1,5*** | |

**In vitro eye test** ***not corrosive (OECD 438).***

**Other information** ***reversible.***

**Assessment / Classification** ***Based on available data, the classification criteria are not met.***

**Kommentiert [A166]:**
If appropriate, give mean scores.

**Kommentiert [A167]:**
(Q)SAR and/or e.g. in vitro test results

**Sensitisation to the respiratory tract/skin**

**Sensitisation to the respiratory tract**

**Practical experience / human evidence**

**Other information**

**Assessment / Classification** ***Not classifiable due to data lacking.***

**Kommentiert [A168]:**
e.g. (Q)SAR
Test results from animal test studies may give valuable indications but by now there are no validated animal test models established.

**Skin sensitisation**

**Practical experience / human evidence**

**Animal data**

| | Effect dose/ -concentration | Value | Species | Method | Result / Evaluation | Remark |
|---|---|---|---|---|---|---|
| ***Substance 1*** | | | ***Guinea pig*** | ***OECD 406*** | ***not sensitising*** | |

**Other information**

**Assessment / Classification** ***Based on available data, the classification criteria are not met.***

**CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**

**Germ cell mutagenicity**

In vitro mutagenicity/genotoxicity

| | Cell type/ Organism | Genetic Endpoint | Method | Result / Evaluation | Remark |
|---|---|---|---|---|---|
| ***Substance 1*** | ***Salmonella typhimurium*** | ***pointmutations*** | ***OECD 471*** | ***positive*** | |

**Kommentiert [A169]:** e.g. cell lines like mouse lymphoma cells; bacteria

**Kommentiert [A171]:** e.g. gene mutation, structural or numeric chromosome aberration, DNA-damage

**Kommentiert [A170]:** e.g. bone marrow or liver cells; chinese hamster, mouse or rat

In vivo mutagenicity/genotoxicity

| | Effect dose/ -concentration | Value | Cell type/ Organism | Genetic Endpopint | Method | Result/ Evaluation | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***NOAEL*** | ***500 mg/kg bw*** | ***Bone marrow / mouse*** | ***Structural or numeric chromosome aberration.*** | ***OECD 475*** | ***positive*** | |

**Other information**

**Kommentiert [A172]:** e.g. interaction with genetic material of germ cells or (Q)SAR

**Assessment / Classification**

**Carcinogenicity**

**Kommentiert [A173]:** The term "Carcinogenicity" is not the correct scientificial term. Correct term "Cancerogenicity".

**Practical experience / human evidence**

**Animal data**

| | Effect dose/ -concen-tration | Value | Exposure route | Exposure time | Exposure duration | Species | Method | Result/ Evalua | |
|---|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Kommentiert [A174]:** e.g. 1 or 2 a (years)

In contrary: Exposure frequency e.g. 5 x per week

**Other information**

**Kommentiert [A175]:** QSAR or non-standard methods

**Assessment / Classification**

## Reproductive toxicity

**Kommentiert [A176]:**
DSD and REACH, Annex II: f carcinogenicity, mutagegenici 2929292929292929292929292929292929292929292929292929292929292929292929292929292929292929292929292929Toxicity for reproduction

### Practical experience / human evidence

### Animal data

Adverse effects on sexual function and fertility

| | Effect dose/ -concen-tration | Value | Exposure route | Exposure duration | Species | Method | Result / Evaluation | Remark |
|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***NOAEL*** | ***1000 mg/kg/d*** | ***oral*** | ***28 d*** | ***Rat*** | ***OECD 421*** | ***negative*** | |

**Kommentiert [A177]:**
-effects / Observations
-Impairment of fertility/sexual function
-Developmental toxicity
Effects on or via lactation( DSD: R 64)

Adverse effects on developmental toxicity

| | Effect dose/ -concen-tration | Value | Exposure route | Exposure duration | Species | Method | Result / Evaluation | Remark |
|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | | | |

**Kommentiert [A178]:**
-effects / Observations
-Impairment of fertility/sexual function
-Developmental toxicity
Effects on or via lactation( DSD: R 64)

Effects on or via lactation

| | Effect dose/ -concen-tration | Value | Exposure route | Exposure duration | Species | Method | Result Evaluation | Remark |
|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | | | |

**Kommentiert [A179]:**
-effects / Observations
-Impairment of fertility/sexual function
-Developmental toxicity
Effects on or via lactation (DSD: R 64)

### Other information

### Assessment / Classification

## Overall assessment on CMR properties

**Kommentiert [A180]:**
For substances subject to registration, the information shall also include the result of the comparison of the available data with the criteria given in Regulation (EC) No 1272/2008 for CMR, categories 1A and 1B, following point 1.3.1 of Annex I to this Regulation.

**Specific target organ toxicity (single exposure)**

**STOT SE 1 and 2**

Kommentiert [A181]: Serious Non lethal effects

**Practical experience / human evidence**

**Animal data**

| | Effect dose/ -concen-tration | Value | Exposure duration | Species | Method | Specific effects | Organs affected | Remark |
|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | | | |
| Oral specific target organ toxicity (single exposure) | | | | | | | | |
| Dermal specific target organ toxicity (single exposure) | | | | | | | | |
| Inhalative specific target organ toxicity (single exposure) | | | | | | | | ***vapour*** |

Kommentiert [A182]: Delayed and immediate effects as well as chronic effects from short and long-term exposure. Information shall be provided on whether delayed or immediate effects can be expected after short or long- term exposure. Information on acute and chronic health effects relating to human exposure to the substance or mixture shall also be provided. Where human data are not available, animal data shall be summarised and the species clearly identified. It shall be indicated whether toxicological data is based on human or animal data.

**Other information**

**Assessment / Classification**

**STOT SE 3**

Kommentiert [A183]: Transient effects (Cat 3):
-Respiratory tract irritation (DSD: R 37)
-Narcotic effects (DSD: R 67)

**Irritation to respiratory tract**

**Practical experience / human evidence** ***No data available.***

Kommentiert [A184]: Hazard class „Irritation to respiratory tract" in generally on basis of Practical experience / human evidence.
STOT-SE Category 3

Kommentiert [A185]: e.g. in vitro test results

**Other information**
**Assessment / Classification**

**Narcotic effects**

**Practical experience / human evidence**

**Other information**

**Assessment / Classification**

**Specific target organ toxicity (repeated exposure)**

**STOT RE 1 and 2**

**Practical experience / human evidence**

**Animal data**

| | Effect dose/ -concen-tration | Value | Exposure duration | Species | Method | Specific effects | Organs affected | Remark |
|---|---|---|---|---|---|---|---|---|
| ***Substance 1*** | | | | | | | | |
| Oral specific target organ toxicity (repeated exposure) | ***NOAEL*** | ***1000 mg/kg/d*** | ***oral*** | ***90 d*** | ***rat*** | ***OECD 408*** | ***none*** | |
| Dermal specific target organ toxicity (repeated exposure) | | | | | | | | |
| Inhalative specific target organ toxicity (repeated exposure) | | | | | | | | |

**Other information**

**Assessment / Classification** ***Based on available data, the classification criteria are not met.***

**Aspiration hazard**

**Practical experience / human evidence** ***No data available.***

**Experimental data** ***viscosity data: see SECTION 9.***

**Assessment / Classification** ***Based on available data, the classification criteria are not met.***

**Kommentiert [A186]:**
Corresponds to „Repeated dose toxicity“
Main header in accordance with Annex II and IUCLID, but uknown by CLP and UN-GHS

**Kommentiert [A187]:**
2 years

**Kommentiert [A188]:**
DSD: covered under Acute toxicity–R65

**Kommentiert [A189]:**
Cinematic viscosity: ...mm2/sec (cStokes) at 40 °C. Give hint to chapter 9 if appropriate

**Symptoms related to the physical, chemical and toxicological characteristics:**
In case of ingestion
In case of skin contact:
In case of inhalation:
In case of eye contact:

## Mixtures

***Substance 1***

***Substance 2***

***Substance 3***

etc.

**Other information:**

**Kommentiert [A190]:**
Potential adverse health effects and symptoms associated with exposure to the substance or mixture and its ingredients or known by-products shall be described. Available information shall be provided on the symptoms related to the physical, chemical, and toxicological characteristics of the substance or mixture following exposure. The first symptoms at low exposures through to the consequences of severe exposure shall be described, such as "headaches and dizziness may occur, proceeding to fainting or unconsciousness; large doses may result in coma and death".

**Kommentiert [A191]:**
*Mixture versus substance information*
The substances in a mixture may interact with each other in the body resulting in different rates of absorption, metabolism and excretion. As a result, the toxic actions may be altered and the overall toxicity of the mixture may be different from that of the substances in it. This shall be taken into account when providing toxicological information in this section of the SDS. It should be indicated clearly if there are test data for the mixture as whole or whether there are only relevant test data for the ingredients.
For the health effects of CMR, classification for a given health effect based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC, and relevant information for the substances listed under Section 3 shall be provided.

**Kommentiert [A192]:** Other relevant information on adverse health effects shall be included even when not required by the classification criteria.

## SECTION 12: Ecological information

*In case that test data regarding one endpoint/differentiation exist for the mixture itself, the classification is carried out according to the substance criteria (excluding biodegradation and bioaccumulation). If no test data exist, the criteria for mixture classification has to be used (calculation method); in this case the toxicological data of the ingredients are shown.*

### 12.1 Toxicity:

**Aquatic toxicity**

Acute (short-term) fish toxicity

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***LC50*** | ***XX mg/l*** | ***96 h*** | ***Zebra fish*** | | ***OECD 203*** | ***semistatic*** |

Chronic (long-term) fish toxicity

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***NOEC*** | ***XX mg/l*** | ***28 d*** | ***Rainbow trout*** | | ***OECD 201*** | ***Inhibition of g rate*** |

Acute (short-term) toxicity to crustacea

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***EC50*** | ***XX mg/l*** | ***48 h*** | ***Daphnia magna*** | | ***OECD 202*** | ***Immobilisation*** |

Chronic (long-term) toxicity to crustacea

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***NOEC*** | ***XX mg/l*** | ***28 d*** | ***Daphnia magna*** | | ***OECD 211*** | ***Reproduction*** |

Acute (short-term) toxicity to algae and cyanobacteria

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***EC50*** | ***XX mg/l*** | ***72 h*** | ***Scenedesmus subspicatus*** | | ***OECD 201*** | ***Inhibition of growth rate*** |

Toxicity to other aquatic plants / organisms

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***EC50*** | ***XX mg/l*** | ***7 d*** | ***Lemna minor*** | | ***OECD 221*** | ***Inhibition of growth rate*** |

Toxicity to microorganisms

| | Effect dose/ -concentration | Value | Test duration | Species | Result/ Evaluation | Method | Remark |
|---|---|---|---|---|---|---|---|
| ***Substance 1*** | ***EC20*** | ***XX mg/l*** | ***30 min*** | ***Activated sludge (ind.)*** | | ***OECD 209*** | |

**Kommentiert [A193]:** This section of the SDS shall describe the info provided to evaluate the environmental impact of the substance or mixture where it is released to the environment. Under Subsections 12.1 to 12.6 of the SDS a short summary of the data shall be provided including, where available, relevant test data and clearly indicating species, media, units, test duration and test conditions. This info may assist in handling spills, and evaluating waste treatment practices, control of release, accidental release measures and transport. If it is stated that a particular property does not apply or if info on a particular property is not available, the reasons shall be indicated. Info on bioaccumulation, persistence and degradability shall be given, where available and appropriate, for each relevant substance in the mixture. Info shall also be provided for hazardous transformation products arising from the degradation of substances and mix.The info in this section shall be consistent with the info provided in the registration and/or in the CSR where required, and with the classification of the substance or mixture.

**Kommentiert [A194]:** Info on toxicity using data from tests performed on aquatic and/or terrestrial organisms shall be provided when available. This shall include relevant available data on aquatic toxicity, both acute and chronic for fish, crustaceans, algae and other aquatic plants. In addition, toxicity data on soil micro and macro-organisms and other environmentally relevant organisms, such as birds, bees and plants, shall be included when available. Where the substance or mixture has inhibitory effects on the activity of micro-organisms, the possible impact on sewage treatment plants shall be mentioned. For substances subject to registration, summaries of the information derived from the application of Annexes VII to XI shall be included.

**Kommentiert [A195]:** REACH-IT (IUCLID V): Short-term toxicity to fish

**Kommentiert [A196]:** REACH-IT (IUCLID V): Short-term toxicity to invertebrates

**Kommentiert [A197]:** REACH-IT (IUCLID V): Long-term toxicity to aquatic invertebrates

**Kommentiert [A198]:** LOEC alternative

**Kommentiert [A199]:** REACH-IT (IUCLID V): Toxicity to aquatic algae and cyanobacteria

**Sediment toxicity**

**Terrestrial toxicity**

**Toxicity to soil macroorganisms except arthropods**
**Toxicity to terrestrial arthropods**
**Toxicity to terrestrial plants**
**Toxicity to birds**

**Assessment / Classification**

***Substance 1:***
***Harmful to aquatic organisms.***

**Kommentiert [A200]:**
Only a header list here.
If required sub-structure has to be added.

**Kommentiert [A201]:**
This assessment may reflect the CLP/GHS classification.

## 12.2 Persistence and degradability

**Biodegradation**

| | Inoculum | Parameter | Degradation rate | Method | Remark |
|---|---|---|---|---|---|
| ***Substance 1*** | ***Activated sludge (ind.)*** | ***BSB des ThSB (28d)*** | ***80-90%*** | ***OECD 301 F*** | *--* |
| ***Substance 2*** | ... | | | | |

**Abiotic Degradation**

| | Test type | t 1/2 | Temperature | pH-value | Method | Remark |
|---|---|---|---|---|---|---|
| ***Substance 1*** | ***Hydrolysis*** | ***0,59 h*** | ***20°C*** | ***4*** | ***OECD 111*** | *--* |
| ***Substance 2*** | ... | | | | | |

**Assessment / Classification**

***Substance 1:***
***Readily biodegradable (according to OECD criteria).***

**Kommentiert [A202]:** Persistence and degradability is the potential for the substance or the appropriate substances in a mixture to degrade in the environment, either through biodegradation or other processes such as oxidation or hydrolysis. Test results relevant to assess persistence and degradability shall be given where available. If degradation half-lives are quoted it must be indicated whether these half lives refer to mineralisation or to primary degradation. The potential of the substance or certain substances in a mixture to degrade in sewage treatment plants shall also be mentioned. This info shall be given where available and appropriate, for each individual substance in the mix. which is required to be listed in Section 3 of the SDS

REACH-IT (IUCLID V):
"Environmental fate and pathways"

**Kommentiert [A203]:**
Biologische Abbaubarkeit ist eine stoffspezifische Eigenschaft und kann nicht am Gemisch bestimmt werden

**Kommentiert [A204]:**
Diese Bewertung kann – muss aber nicht – die GHS-Einstufungsklassen reflektieren.

**Kommentiert [A205]:**
For mixtures for example:
***The single components are readily biodegradable.***

## 12.3 Bioaccumulative potential

**Bioconcentration factor (BCF)**

| | Species | Result | Method | Remark |
|---|---|---|---|---|
| *Substance 1* | *Pimephales promelas* | *123* | *OECD 305* | *by analogy* |

**Assessment / Classification**

***Substance 1:***
***Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.***

**Kommentiert [A206]:**
Bioaccumulative potential is the potential of the substance or certain substances in a mixture to accumulate in biota and, eventually, to pass through the food chain. Test results relevant to assess the bioaccumulative potential shall be given. This shall include reference to the octanol-water partition coefficient (Kow) and bioconcentration factor (BCF), if available. This information shall be given where available and appropriate, for each individual substance in the mixture which is required to be listed in Section 3 of the SDS.

REACH-IT (IUCLID V): "Bioaccumulation"

**Kommentiert [A207]:** Diese Bewertung kann – muss aber nicht – die GHS-Einstufungsklassen reflektieren.

## 12.4 Mobility in soil

| | Distribution | Transport type | Parameter | Result | Method | Remark |
|---|---|---|---|---|---|---|
| *Substance 1* | *Water – Air* | *Volatility* | *Henrys Law Constant* | *680 Pa m³ / mol* | *estimated* | *--* |
| *Substance 2* | *Sediment - Water* | *Adsorption* | *Log KOC* | *0,1* | *estimated* | *--* |

**Assessment / Classification**

**Kommentiert [A208]:**
Mobility in soil is the potential of the substance or the constituents of a mixture, if released to the environment, to move under natural forces to the groundwater or to a distance from the site of release. The potential for mobility in soil shall be given where available. Information on mobility can be determined from relevant mobility data such as adsorption studies or leaching studies, known or predicted distribution to environmental compartments, or surface tension. For example, Koc values can be predicted from octanol/water partition coefficients (Kow). Leaching and mobility can be predicted from models.
This information shall be given where available and appropriate, for each individual substance in the mixture which is required to be listed in Section 3 of the safety data sheet.
Where experimental data is available, that data shall, in general, take precedence over models and predictions.

REACH-IT (IUCLID V): "Transport and distribution"

## 12.5 Results of PBT and vPvB assessment

***Substance 1:***
***This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.***

**Kommentiert [A209]:**
Where a Chemical Safety Report is required, the results of the PBT assessment as set in the Chemical Safety Report shall be given.

## 12.6 Other adverse effects:

***Substance 1:***
***The substance has a very low global warming potential.***
***The substance has no ozone depleting potential.***

**Kommentiert [A210]:**
Information on any other adverse effects on the environment shall be included where available, such as environmental fate (exposure), photochemical ozone creation potential, ozone depletion potential, endocrine disrupting potential and/or global warming potential.

**Additional ecotoxicological information**

***Substance 1:***
***The statement is derived from products of similar structure or composition.***

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Directive 2008/98/EC (Waste Framework Directive)**
***Hazardous waste according to Directive 2008/98/EC (waste framework directive).***

Before intended use
- Properties of waste which render it hazardous
- Disposal operations
- Recovery operations
- Waste codes / waste designations according to EWC / AVV

After intended use
- Properties of waste which render it hazardous
- Disposal operations
- Recovery operations
- Waste codes / waste designations according to EWC / AVV

Remark

Other disposal recommendation

**Additional information**

**Kommentiert [A211]:**
This section of the safety data sheet shall describe information for proper waste management of the substance or mixture and/or its container to assist in the determination of safe and environmentally preferred waste management options, consistent with the requirements in accordance with Directive 2008/98/EC of the European Parliament and of the Council[1] of the Member State in which the safety data sheet is being supplied. Information relevant for the safety of persons conducting waste management activities shall complement the information given in Section 8.
Where a chemical safety report is required and where a waste stage analysis has been performed, the information on the waste management measures shall be consistent with the identified uses in the chemical safety report and the exposure scenarios from the chemical safety report set out in the annex to the safety data sheet.
Any relevant Community provisions relating to waste shall be referred to. In their absence any relevant national or regional provisions in force shall be referred to.

**Kommentiert [A212]:**
(a) Waste treatment containers and methods shall be specified including the appropriate methods of waste treatment of both the substance or mixture and any contaminated packaging (for example, incineration, recycling, landfilling);
(b) Physical/chemical properties that may affect waste treatment options shall be specified;
(c) Sewage disposal shall be discouraged;
(d) Where appropriate, any special precautions for any recommended waste treatment option shall be identified.

Any relevant Community provisions relating to waste shall be referred to. In their absence any relevant national or regional provisions in force shall be referred to.

## SECTION 14: Transport information

| | Land transport (ADR/RID) | Inland waterway transport (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|---|---|---|---|---|
| **14.1 UN No.** | | | | |
| **14.2 UN Proper shipping name** | | | | |
| **14.3 Transport hazard class(es)** | | | | |
| **Hazard label(s)** | | | | |
| **14.4 Packing group** | | | | |
| **14.5 Enviromental hazards** | | | | |

### 14.6 Special precautions for user

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

**Additional information**

**All transport carriers**

**Land transport (ADR/RID)**
Limited quantity:
Special provisions:
Tunnel restriction code:
Classification code:
Transport category:
Hazard identification number (Kemler No.):
Remark:

**Inland waterway transport (ADN)**
Limited quantity:
Special provisions:
Category:
Remark:

**Sea transport (IMDG)**
Limited quantity:
Special provisions:
Marine pollutant:
Segregation group:
Remark:

**Air transport (ICAO-TI / IATA-DGR)**
Limited quantity:
Special provisions:
Remark:

**Kommentiert [A213]:**
This section of the SDS shall provide basic classification information for transporting/ shipment of substances or mixtures mentioned under Section 1 by road, rail, sea, inland waterways or air. Where information is not available or relevant this shall be stated.
Where relevant, it shall provide information on the transport classification for each of the UN Model Regulations.
Environmental hazards
It shall be indicated whether the substance or mixture is environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and ADN) and/or a marine pollutant according to the IMDG Code. If authorised or intended for carriage by inland waterways in tank-vessels, it shall be indicated whether the substance or mixture is environmentally hazardous in tank-vessels only according to ADN.

**Kommentiert [A214]:**
The UN number (i.e. the four-figure identification number of the substance, mixture or article preceded by the letters 'UN') from the UN Model Regulations shall be provided.

**Kommentiert [A215]:**
The UN proper shipping name from the UN Model Regulations shall be provided, unless it has appeared as the product identifier in Subsection 1.1.

**Kommentiert [A216]:**
The transport hazard class (and subsidiary risks) assigned to the substances or mixtures according to the predominant hazard that they present in accordance with the UN Model Regulations shall be provided.

**Kommentiert [A217]:**
The packing group number from the UN Model Regulations shall be provided, if applicable. The packing group number is assigned to certain substances in accordance with their degree of hazard.

**Kommentiert [A218]:**
Information shall be provided on any special precautions which a user should or must take or be aware of in connection with transport or conveyance either within or outside his premises.

**Kommentiert [A219]:**
This subsection only applies when cargoes are intended to be carried in bulk according to the following IMO instruments: Annex II of Marpol and the IBC Code. The product name shall be provided (if different from that given in subsection 1.1) as required by the shipment document and in accordance with the name used in the lists of product names given in chapters 17 or 18 of the IBC Code or the latest edition of the IMO's Maritime Environment Protection Committee (MEPC).2/Circular (1). Ship type required and pollution category shall be indicated.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**EU regulations**

**Authorisations and/or restrictions on use**

Authorisations
Restrictions on use
Restrictions of occupation

**Other EU regulations**

**Directive 2010/75/EC on industrial emissions**

CHAPTER III: SPECIAL PROVISIONS FOR COMBUSTION PLANTS

Categories of fuel: ***Liquid fuels***

Bemerkung: ***The fuel is no subject of use restrictions according to Directive 2010/75/EC on industrial emissions (article 34(4)).***

CHAPTER V: SPECIAL PROVISIONS FOR INSTALLATIONS AND ACTIVITIES USING ORGANIC SOLVENTS

Volatile organic compounds (VOC) content in percent by weight:

| Value | Temperature | Method | Remark |
|---|---|---|---|
| ***33 +/-1,5*** | ***20 °C*** | | |
| ***37,5 +/-1,7*** | ***140 °C*** | | ***Baking temperature of the coating*** |

Ingredients of the mixture which are CMR-VOC or halogenated VOC:

| Stoffname | CAS-Nr. | INDEX-NR. | EG-Nr. |
|---|---|---|---|
| ***ABC*** | ***123-45-6*** | ***123-456-78-9*** | ***123-456-7*** |
| ***DEF*** | ***234-56-7*** | ***345-678-90-1*** | ***456-789-0*** |

**Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline).**

**Directive 2004/42/CE on the limitation of emissions of volatile organic compounds**

**Regulation (EC) No. 842/2006 on certain fluorinated greenhouse gases.**

**Regulation (EC) No 1005/2009 on substances that deplete the ozone layer**

**Kommentiert [A220]:** This section of the SDS shall describe the other regulatory information on the substance or mixture that is not already provided in the safety data sheet (such as whether the substance or mixture is subject to Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer[1], Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC or Regulation (EC) No 689/2008 of the European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals.

**Kommentiert [A221]:** Info regarding relevant Community safety, health and environmental provisions (for example Seveso category/named substances in Annex I of 96/82/EC) or national info on the regulatory status of the substance or mixture (including the substances in the mixture), including advice regarding action that should be taken by the recipient as a result of these provisions shall be provided. Where relevant the national laws of the relevant Member States which implement these prov-isions and any other national measures that may be relevant shall be mentioned.

**Kommentiert [A222]:**
If the substance or mixture covered by this safety data sheet is the subject of specific provisions in relation to protection of human health or the environment at Community level (such as authorisations given under Title VII or restrictions under Title VIII) these provisions shall be mentioned.

**Kommentiert [A223]:**
Some examples are listed below

**Kommentiert [A224]:**
Examples only.
Other EC regulations may be listed here too

**National regulations**

***Additionally, observe any national regulations!***

**15.2 Chemical Safety Assessment**

***For this substance a chemical safety assessment is not required.***

**SECTION 16: Other information**

**16.1 Indication of changes**

**16.2 Abbreviations and acronyms**

**16.3 Key literature references and sources for data**

**16.4 Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**
***See SECTION 2.1 (classification).***

**16.5 Relevant R-, H- and EUH-phrases (number and full text)**

**16.6 Training advice**

**16.7 Further information**

**Annex to extended safety data sheet (ext. SDS)**

**Kommentiert [A225]:**
National regulations depending on EU member states. For Germany: please see German Template.

**Kommentiert [A226]:**
It shall be indicated if a chemical safety assessment has been carried out for the substance or the mixture by the supplier. Not required for substances < 10 t/a.

**Kommentiert [A227]:**
This section of the SDS shall describe the information relevant to the compilation of the safety data sheet. It shall incorporate other information that is not included in Sections 1 to 15, including information on revision of the safety data sheet.
If in accordance with Article 31(10) a supplier of a mixture chooses to identify and inform about the classification necessary from 1 June 2015 in advance of using it for classification and labelling on the package, he may include this classification in this section.

**Kommentiert [A228]:**
In case of a revised SDS, a clear indication of where changes have been made to the previous version of the safety data sheet, unless such indication is given elsewhere in the safety data sheet, with an explanation of the changes, if appropriate. A supplier of a substance or mixture shall maintain an explanation of the changes and provide it upon request

**Kommentiert [A229]:**
A key or legend to abbreviations and acronyms used in the safety data sheet;

**Kommentiert [A230]:**
Key literature references and sources for data.

**Kommentiert [A231]:**
In the case of mixtures, an indication of which of the methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 was used for the purpose of classification;

**Kommentiert [A232]:**
List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements. Write out the full text of any statements which are not written out in full under Sections 2 to 15;

**Kommentiert [A233]:**
Advice on any training appropriate for workers to ensure protection of human health and the environment.

**Kommentiert [A234]:**
This section may include an index table or table of contents for the attached exposure scenarios. If this is included here, a reference can be introduced in section 1.2.

**Kommentiert [A235]:**
Only required for substances manufactured or imported in quantities of 10 tonnes or more per year per manufacturer or importer and for those substances which require a SDS according to REACH, article 31 (1).
For all substances > 10 t/a without SDS requirement informations must be given according to article 32.

See extra modul „Annex to the SDS"

**Seite 1: [1] Kommentiert [A7]** **Autor**

For mixtures only
CLP, Art. 18b
The product identifier for a mixture shall consist of both of the following:
(a) the trade name or the designation of the mixture;
(b) the identity of all substances in the mixture that contribute to the classification of the mixture as regards acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, respiratory or skin sensitisation, specific target organ toxicity (STOT) or aspiration hazard.
Where, in the case referred to in (b), that requirement leads to the provision of multiple chemical names, a maximum of four chemical names shall suffice, unless more than four names are needed to reflect the nature and the severity of the hazards. The chemical names selected shall identify the substances primarily responsible for the major health hazards which have given rise to the classification and the choice of the corresponding hazard statements.

The part of the product identifier “hazard components” according to CLP, Art. 18b would better belong to Sub-SECTION 2.2 for mixtures. BUT:
ECHA SDS Guidance is stated in a footnote (No. 54) as additional explanation to the header "product identifier":
"Note that the product identifier, although a label element, is not given in subsection 2.2 as it is not specified as one of the elements which should appear here. It is to be given in section 1.1."
For further information on the compilation of the SDS, please consult the Guidance on the compilation of safety data sheets (http://echa.europa.eu/guidancedocuments ... e-on-reach).

**Seite 2: [2] Kommentiert [A8]** **Autor**

At least the identified uses relevant for the recipient(s) of the substance or mixture shall be indicated. This shall be a brief description of what the substance or mixture is intended to do, such as “flame retardant”, “antioxidant”. The uses which the supplier advises against and the reasons why shall, where applicable, be stated. This need not be an exhaustive list.

Where a chemical safety report is required, the information in this subsection of the safety data sheet shall be consistent with the identified uses in the chemical safety report and the exposure scenarios from the chemical safety report set out in the annex to the safety data sheet.

ECHA FAQ:

For registered substances for which a Chemical Safety Report (CSR) is required, the information appearing in section 1.2 of the SDS needs to be in line with the identified uses in the CSR (under REACH, the definition of use goes beyond the chemical function) and the Exposure Scenario (ES) annexed to the SDS. Intuitive ES titles can be reported in section 1.2. When the use descriptor system is used in the ES, it is advised that, in section 1.2, the uses of the substance are described in a generic wording while remaining consistent with that of the use descriptor system. Reporting the use descriptor codes in section 1.2 is not recommended as it may lead to lengthy lists. The Process and Product Categories in the use descriptor system can be used as an indication.
For registered substances for which a CSR is not required (between 1-10 tonnes/year), substances not yet registered or not subject to registration (e.g. below 1 tonne/year or listed in Annex IV or V) and mixtures, the intended uses known to the supplier need to be indicated, with a brief description of what the substance or mixture is intended to do, such as "flame retardant in textile fibres", "antioxidant in paints, cosmetics, detergents", etc.

**Seite 2: [3] Kommentiert [A9]** **Autor**

At least the identified uses relevant for the recipient(s) of the substance or mixture shall be indicated. This shall be a brief description of what the substance or mixture is intended to do, such as “flame retardant”, “antioxidant”.

Where a chemical safety report is required, the information in this subsection of the safety data sheet shall be consistent with the identified uses in the CSR and the exposure scenarios from the CSR set out in the annex to the SDS

**Seite 2: [4] Kommentiert [A14]** **Autor**

The supplier, whether it is the manufacturer, importer, only representative, downstream user or distributor, shall be identified. The full address and telephone number of the supplier shall be given as well as an e-mail address (e.g. sds@xyz.de) for a competent person responsible for the safety data sheet.

In addition, if the supplier is not located in the Member State where the substance or mixture is placed on the market and he has nominated a responsible person for that Member State, a full address and telephone number for that responsible person shall be given. For registrants, information shall be consistent with the information on the identity of the manufacturer or importer provided in the registration. Where an only representative has been appointed, details of the non-Community manufacturer or formulator may also be provided.

**Seite 2: [5] Kommentiert [A17]** **Autor**

References to emergency information services shall be provided. If an official advisory body exists in the Member State where the substance or mixture is placed on the market (this may be the body responsible for receiving information relating to health referred to in Article 45 of Regulation (EC) No 1272/2008, its telephone number shall be given and can suffice. If availability of such services is limited for any reasons, such as hours of operation, or if there are limits on specific types of information provided, this shall be clearly stated.