

Safety Data Sheet

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

Trade name:
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Specification No:

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Yellow marked: additional information required for the extended SDS (eSDS)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance or preparation:

Identification on the label / trade name:

Additional identification:

REACH Registration No:

1.2 Use of the substance / preparation:

1.2.1 Identified uses:

In compliance with the conditions described in the annex to this safety data sheet.

1.2.2 Uses advised against:

Do not use for injecting or spraying.
See chapter 16 for a general overview.

1.3 Company/undertaking identification:

Supplier (manufacturer/importer/downstream user/distributor):

E-Mail (competent person):

Information contact:

National contact:

1.4 EMERGENCY TELEPHONE:

Kommentar:

„Use“ is defined in REACH, Article 3, No. 24.
Selectable from BDI-Modul „Categories“

Kommentar:

Where a Chemical Safety Report is required, the Safety Data Sheet shall contain information on all the identified uses relevant to the recipient of the Safety Data Sheet. This information shall be consistent with the identified uses and exposure scenarios set out in the annex to the Safety Data Sheet. See BDI-catalogue modul „Categories“. The classification into „industry“, „professional“ and „private consume“ is optional.

According to REACH, Annex II, No. 1.2 one should indicate in the SDS the uses of the substance or preparation as far as they are known. For registered substances one can choose those used in the dossier. Contents under this header are identically with the titles of exposure scenarios (link to the annex). „Identified use“ is defined in REACH, Article 3, No. 26.

Kommentar: Standard phrase for extended SDS.

Kommentar: Example for use advised against.

Kommentar: Or as an alternative: give advice under 16.3.1 (UEC matrix).

Kommentar: Identify the person responsible for placing the substance or preparation on the market within the Community, whether it is the manufacturer, importer or distributor. For registrants, the person identified shall be consistent with the information on the identity of the manufacturer or importer provided in the registration.

Kommentar: Give the full address and telephone no. of this person and e-mail of the competent person responsible for the SDS.

Kommentar: The e-mail address of the competent person responsible (creator/collector) for the Safety Data Sheet. That may be an external office too or a compiled e-mail address (sdb@xyz.de)

Kommentar: Where this person is not located in the Member State where the substance /preparation is placed on the market, give full address and tel. no. for the person responsible in that Member State.

Kommentar: Specify if this phone number is available only during office hours, for example by using the following standard phrase: „This number is serviced during office hours only.“

Foot note (general hint):

The given tables in chapters 3,8,11 and 12 are only examples. Of course other illustration alternatives and alternative substructures may be used in practice.

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2. HAZARDS IDENTIFICATION

2.1 Hazards description:

2.1.1 Classification:

| Regulation (EC) No 1272/2008 [CLP] | | |
|------------------------------------|------------------|--------------------------|
| Hazard classes/Hazard categories | Hazard statement | Classification procedure |
| Acute Toxicity 1 | H330 | Test data |
| 67/548/EEC or 1999/45/EC | | |
| Hazards characteristics | R-Phrases | |
| Very toxic | R26 | |

2.1.2 Additional hints:

2.2 Informations pertaining to special dangers for human and environment:

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

Kommentar: Distinguish clearly between preparations which are classified as dangerous and preparations which are not classified as dangerous according to Directive 1999/45/EC. Describe the most important adverse physicochemical, human health and environmental effects and symptoms relating to the uses and possible misuses of the substance or preparation that can reasonably be foreseen.

Kommentar: The classification of the substance shall be consistent with the classification provided to the classification and labelling inventory according to Title XI.

Kommentar: e.g. „H330“

Kommentar: e.g. „test result“, „bridging principles“ or „calculation method“.

Kommentar: z.B. „Akute Tox. 1“.

Kommentar: e.g. „R43“ or „Carc. Cat. 2“.

Kommentar: Verschieden für die Einstufung gemäß GHS wichtige Informationen in Form von einfachen Aussagen, die durch entsprechende Werte in den Datenkapiteln 9, 11, 12 gestützt werden. Z.B.: „Das Produkt ist mit einer versiegelten Sprühvorrichtung versehen“ oder „das Gas ist bei 20°C und Standarddruck (101,3 kPa) in einem Gemisch von höchstens 13 Vol% Luft entzündbar“ oder „Die Prüfung der Weiterbrennbarkeit von Flüssigkeiten liegt vor (Flüssigkeit unterhält keine selbständige Verbrennung). Das Ergebnis ist negativ“ etc.

Kommentar: It may be necessary to mention other hazards, such as dustiness, cross-sensitisation, suffocation, freezing, high potency for odour or taste or environmental effects such as hazards to soil-dwelling organisms, ozone depletion, photochemical ozone creation potential, etc., which do not result in classification but which may contribute to the overall hazards of the material.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance related informations

CAS No:

EC No:

INDEX No:

REACH Registration No:

Purity:

Synonyms:

Stabilisers:

Hazard impurities:

3.2 Additional hints:

The transition period according REACH regulation, article 23 is still not expired.

Kommentar: e.g., whether it is a PBT- or vPvB-Substance or substance with a common working place exposure limit value. In addition for explanation why still no REACH registration No. exists.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Preparation / mixture related informations

Description:

3.2 Hazard ingredients*:

| Chemical name | EC-No | REACH-No | Index-No | CAS-No | Amount (%) | Classification according Regulation (EC) No 1272/2008 [CLP] | | Classification according 67/548/EEC |
|---------------|-------|----------|----------|--------|------------|---|------------------|-------------------------------------|
| | | | | | | Gefahrenklassen/ Gefahrenkategorien | Gefahrenhinweise | |
| | | | | | | | | |

Kommentar:
1 . . . dangerous preparation:
 1a all health or environmental hazardous substances, if
 ≥ consideration limit 1999/45/EC
 ≥ concentration limit, Annex I
 ≥ conc.limit 1999/45/EC, Part B, Annexes II, III
 ≥ conc. limit 1999/45/EC, Annex V
 ≥ conc. limit Title X.
1b EU-working place exposure subst.

1c ≥ 0,1 % PBT- or vPvB-Substances
2. . . not dangerous preparations:
2a all health or environmental hazardous substances, if
 ≥ 1 weight% (l,s) or ≥ 0,2 Vol% (g)
2b EU-working place exposure subst
 ≥ 1 weight% (l,s) or ≥ 0,2 Vol% (g)
 ≥ 0,1 % PBT- or vPvB-Substances

3.3 Remark:

Full text of R- and H-phrases: see section 16.

Kommentar: Header text changed due to double meaning under REACH. Former „Chemical characterisation“.

Kommentar: EINECS/ELINCS

Kommentar: The registration number according REACH, article 20 (1) should be given here. The procedure must be clarified with ECHA.

Kommentar: e.g., whether it is a PBT- or vPvB-Substance or substance with a common working place exposure limit value.

*Foot note:

Where the person responsible for placing the preparation on the market can demonstrate that the disclosure in the safety data sheet of the chemical identity of a substance which is exclusively classified as irritant with the exception of those assigned R41 or irritant in combination with one or more of the properties mentioned in point 2.3.4 of Article 10 of Directive 1999/45/EC, or harmful or harmful in combination with one or more of the properties mentioned in point 2.3.4 of Article 10 of Directive 1999/45/EC presenting acute lethal effects alone, will put at risk the confidential nature of his intellectual property, he may, in accordance with the provisions of Part B of Annex VI to Directive 1999/45/EC, refer to that substance either by means of a name that identifies the most important functional chemical groups, or by means of an alternative name.

Where the supplier of a mixture, before 1 June 2015, has demonstrated under Article 15 of Directive 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.

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4. FIRST AID MEASURES

4.1 General informations:

4.2 In case of inhalation:

4.3 In case of skin contact:

4.4 In case of eye contact:

4.5 In case of ingestion:

4.6 Self-protection of the first aider:

4.7 Information to physician:

Symptoms:

Hazards:

Treatment:

Kommentar:

The information on first aid shall be brief and easy to understand by the victim, bystanders and first-aiders. The symptoms and effects shall be briefly summarised. The instructions shall indicate what is to be done on the spot in the case of an accident and whether delayed effects can be expected after exposure.

Indicate whether professional assistance by a doctor is needed or advisable.

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

Kommentar:

Specify first whether immediate medical attention is required.

Kommentar:

Bekanntmachung TRGS 220 (DE):
If special R-phrases (see chapter 15) indicating exposure way specific health hazards it is necessary to describe detailed first aid measures related to this exposure way.

If special informations for physician are required (e.g. specific antidot, or overpressure tretament, restriction of spezial drugs resp. natural stimulants etc.) this shall be described in this chapter too. Thiose informations may include medical phrases and may be therefore not be understandable for laymen.

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5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

5.2 Extinguishing media which must not be used for safety reasons:

5.3 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:

5.4 Special protective equipment for fire-fighters:

5.5 Additional information:

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions:

6.2 Environmental precautions:

6.3 Methods for cleaning up:

6.4 Additional information:

Kommentar:

If appropriate refer to headings 8 and 13.

Kommentar:

Removal of ignition sources, provision for sufficient ventilation/respiratory protection, control of dust, prevention of skin and eye contact.

Kommentar:

Keeping away from drains, surface- and ground-water and soil, possible need to alert the neighbourhood.

Kommentar:

Use of absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.), reduction of gases/fumes with water, dilution.

Also consider the need for indications such as: 'never use, neutralise with ...'

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7. HANDLING AND STORAGE

7.1 Handling

Advices on safe handling:

Protective measures:

Technical measures:

Measures to prevent aerosol and dust generation:

Measures required to protect the environment:

Specific requirements or handling rules:

Precautions against fire and explosion:

Further informations:

7.2 Storage

Technical measures and storage conditions:

Packaging materials:

Requirements for storage rooms and vessels:

Hints on storage assembly:

Storage class:

Further information on storage conditions:

7.3 Specific uses:

Recommendations:

Industrial sector specific solutions:

Kommentar:

Information in this section 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.

Where a chemical safety report or a registration is required, the information in this section shall be consistent with the information given, for the identified uses and exposure scenarios set out in the annex to the Safety Data Sheet.

Kommentar:

Specify precautions for safe handling including advice on technical measures such as: containment, local and general ventilation, measures to prevent aerosol and dust generation and fire, measures required to protect the environment (e.g. use of filters or scrubbers on exhaust ventilation, use in a bunded area, measures for collection and disposal of spillages, etc.) and any specific requirements or rules relating to the substance or preparation (e.g. procedures or equipment which are prohibited or recommended) and if possible give a brief description.

Kommentar:

Specify the conditions for safe storage such as: specific design for storage rooms or vessels (including retention walls and ventilation), incompatible materials, conditions of storage (temperature and humidity limit/range, light, inert gas, etc.) special electrical equipment and prevention of static electricity.

Give advice if relevant on quantity limits under storage conditions.

In particular indicate any special requirements such as the type of material used in the packaging / containers of the substance or preparation.

Kommentar:

For end products designed for specific use(s), recommendations shall refer to the identified use(s) and be detailed and operational. If possible, reference shall be made to industry- or sector-specific approved guidance.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Preventive industrial medical examinations according are to be carried out.

8.1 Exposure limit values:

8.1.1 Components with occupational exposure limits resp. biological occupational exposure limits requiring monitoring:

8.1.1.1 Occupational exposure limits:

Air limit values:

| Limit value type (country of origin) | Substance name | EC-No. | CAS -No. | Occupational exposure limit value | | Recommended monitoring procedures | Peak limitation: | Source |
|--------------------------------------|----------------|--------|----------|-----------------------------------|------------|-----------------------------------|------------------|--------|
| | | | | Long term | Short term | | | |
| AGW (DE) | | | | | | | | |
| OEL (EU) | | | | | | | | |

Biological limit values:

| Limit value type (country of origin) | Substance name | EC-No. | CAS-No. | Limit Value | Investigation parameter | Source | Remark |
|--------------------------------------|----------------|--------|---------|-------------|-------------------------|--------|--------|
| BGW (DE) | | | | | | | |

8.1.1.2 Additional exposure limits under the conditions of use:

8.1.1.3 DNEL/DMEL and PNEC-values:

| DNEL/DMEL | | | Exposure route | Exposure frequency | Critical component | Remarks |
|-----------------|--------------|----------|----------------|--|--------------------|---------|
| Worker Industry | Professional | Consumer | | | | |
| | | | oral | short term (acute) long term (repeated) | | |
| | | | dermal | short term (acute) long term (repeated) | | |
| | | | inhalation | short term (acute) long term (repeated) | | |

| PNEC | | | Exposure route | Exposure frequency | Critical component | Remarks |
|-----------------|--------------|----------|----------------|---|--------------------|---------|
| Worker Industry | Professional | Consumer | | | | |
| | | | Water | Short Term (single use) Long Term (continuous) | | |
| | | | Soil | Short Term (single use) Long Term (continuous) | | |
| | | | Air | Short Term (single use) Long Term (continuous) | | |

Kommentar:
For the purposes of this document exposure control means the full range of specific risk management measures to be taken during use in order to minimise worker and environmental exposure. Where a chemical safety report is required, a summary of the risk management measures shall be given in Section 8 of the Safety Data Sheet for the identified uses set out in the Safety Data Sheet.

Kommentar: 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.

Kommentar: Specify currently applicable specific control parameters including occupational exposure limit values and/or biological limit values. Values shall be given for the Member State where the substance or preparation is placed on the market. Give information on currently recommended monitoring procedures.

Kommentar: New header under REACH. Where a Chemical Safety Report is required, the relevant DNELs (DMELs) and PNECs for the substance shall be given for the exposure scenarios set out in the annex to the SDS. In contrast to the Occupational exposure limits and Biological limit values for DNEL/DMEL- and PNEC-value(s) it is not foreseen to give these values for the substances in preparations. Only for these such values are defined and can be given.

Kommentar: For preparations only.

Kommentar: 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).

Kommentar: The DNEL/DMEL for industrial and professional use is identically. Only the risk management measures are different. Therefore the BDI catalogue does not differ between industrial and professional DNEL/DMEL values. In Contrast to the occupational exposure limits and Biological limit values for DNEL/DMEL- and PNEC-value(s) it is not foreseen to give these values for the substances in preparations. Only for these such values are defined and can be given.

Kommentar: For preparations only.

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

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8.2 Exposure controls

8.2.1 Occupational exposure controls:

Product related measures to prevent exposure:

Instructual measures to prevent exposure:

Organisational measures to prevent exposure:

Technical measures to prevent exposure:

Personal protection equipment:

Respiratory protection:

Hand protection:

Eye protection:

Body protection:

8.2.2 Environmental exposure controls:

Product related measures to prevent exposure:

Instructual measures to prevent exposure:

Organisational measures to prevent exposure:

Technical measures to prevent exposure:

8.2.3 Consumer exposure control

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

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

REMARK - RIP 3.2-2 Part G, Zeile 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 preparations) and to the service life of the substance in articles.

This information is addressed to the downstream users under REACH i) placing preparations for use in the general public on the market and ii) processing substances or preparations 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.

Kommentar:

This information will be taken into account by the employer in carrying out an assessment of risk to the health and safety of workers for the substance or preparation under Article 4 of 98/24/EC, which requires, in the order of priority: design of appropriate work processes and engineering controls, the use of adequate equipment and materials, the application of collective protection measures at source, such as adequate ventilation and appropriate organisational measures, and where exposure cannot be prevented by other means the use of individual protection measures, such as personal protection equipment. Therefore provide suitable and adequate information on these measures to enable a proper risk assessment to be carried out under Article 4 of 98/24/EC. This information shall complement that already given under heading 7.1.

Kommentar: New required header under REACH

Kommentar: Where individual protection measures are needed, specify in detail which equipment will provide adequate and suitable protection. Take into account 89/686/EEC relating to personal protective equipment (1) and make reference to the appropriate CEN standards.

Kommentar: For dangerous gases, vapours or dust, specify the type of protective equipment to be used, such as: self contained breathing apparatus, adequate masks and filters.

Kommentar: Specify clearly the type of gloves to be worn when handling the substance or preparation, including: the type of material, the breakthrough time of the glove material, with regard to the amount and duration of dermal exposure. If necessary indicate any additional hand protection measures.

Kommentar: Specify the information required by the employer to fulfil his commitments under EU environmental protection legislation. **Where a CSR is required, a summary of the RMMs that adequately control exposure of the environment to the substance shall be given for the exposure scenarios set out in the annex to the SDS.**

Kommentar: New required header under REACH

Kommentar: New required header under REACH. Required for production of end-products.

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance

Physical state:

Colour:

Odour:

9.2 Important health, safety and environmental information

9.2.1 Safety relevant basic data

| | Value | Method | Remark |
|---|-------|--------|--------|
| pH (20 °C): | | | |
| Melting point/range (°C): | | | |
| Boiling point/range (°C): | | | |
| Flash point (°C): | | | |
| Ignition temperature (°C): | | | |
| Vapour pressure (°C): | | | |
| Density (g/cm ³): | | | |
| Bulk density (kg/m ³): | | | |
| Water solubility (20 °C in g/l): | | | |
| Partition coefficient n-Octanol/Water (log Po/w) | | | |
| Viscosity, dynamic (mPa s): | | | |
| Dust explosion hazard: | | | |
| Explosion limits: | | | |
| lower: | | | |
| upper: | | | |

9.2.2 Substance group relevant properties:

Explosives
Flammable gases
Flammable aerosols
Oxidising gases
Gases under pressure
Flammable liquids
Flammable solids
Self-reactive substances and mixtures
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances or mixtures which, in contact with water emit flammable gases
Oxidising liquids
Oxidising solids
Organic peroxides
Metal corrosion

9.3 Other informations:

Kommentar:

To enable proper control measures to be taken, provide all relevant information on the substance or preparation, particularly the information listed under heading 9.2. The information in this section shall be consistent with the information provided in a registration where one is required.

Kommentar: For preparations, information shall normally be given on the properties of the preparation itself. However, if it is stated that a particular hazard does not apply, clearly differentiate between cases where no information is available to the classifier, and cases where negative test results are available. If it is considered necessary to give information about the properties of individual components, please indicate clearly what the data refers to.

The above properties shall be determined in accordance with the specifications laid down in the Commission Regulation on testing methods referred to in Article 13(3) or any other comparable method.

Kommentar:

Find below some examples and layout proposal.

Kommentar:

Pressure and temperature requested, e.g. at 20 °C and normal pressure.

Kommentar:

Will become relevant with GHS.

Kommentar:

Indicate other important safety parameters, such as miscibility, fat solubility (solvent oil to be specified), conductivity, melting point/melting range, gas group (useful for Directive 94/9/EC of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres (1)), auto-ignition temperature, etc.

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10. STABILITY AND REACTIVITY

10.1 Conditions to avoid:

10.2 Materials to avoid:

10.3 Hazardous decomposition products:

11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution

Non-human toxikological data

Method:

Dosis:

Routes of administration:

Results:

Absorption:

Distribution:

Metabolism:

Excretion:

Human toxikological data:

11.2 Acute effects (toxicity tests)

| | Effect dose | Species | Method | Remark |
|---------------------------|----------------------------|---------|--------|--------|
| Acute oral toxicity | LD50 or ATE _{mix} | | | |
| Acute dermal toxicity | LD50 or ATE _{mix} | | | |
| Acute inhalative toxicity | LC50 or ATE _{mix} | | | |

Specific Target Organ Toxicity (STOT)

| Single exposure | Specific effects | Affected organs | Remark |
|---------------------------|------------------|-----------------|--------|
| Acute oral toxicity | | | |
| Acute dermal toxicity | | | |
| Acute inhalative toxicity | | | |

Specific symptoms in animal studies:

In case of ingestion

In case of skin contact:

In case of inhalation:

In case of eye contact:

Kommentar:

This section deals with the need for a concise but complete and comprehensible description of the various toxicological (health) effects, which can arise if the user comes into contact with the substance or preparation.

The information in this section shall be consistent with the information provided for in a registration where required and/or in a Chemical Safety Report where required and shall give information on the following groups of potential effects: toxicokinetics, metabolism and distribution, acute effects (acute toxicity, irritation and corrosion), sensitisation, repeated dose toxicity, and CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction).

For substances subject to registration, summaries of the information derived from the application of Annexes VII to XI of this Regulation shall be given.

Kommentar:

The information shall include dangerous-to-health effects from exposure to the substance or preparation, based on the conclusion from, for example, test data and experience. The information shall also include, where appropriate, delayed, immediate and chronic effects from short- and long-term exposure such as sensitisation, narcosis, carcinogenicity, mutagenicity and reproductive toxicity (developmental toxicity and fertility). It shall also include information on the different routes of exposure (inhalation, ingestion, skin and eye contact), and describe the symptoms related to the physical, chemical and toxicological characteristics.

Taking account of the information already provided under heading 3, composition/ information on ingredients, it may be necessary to make reference to specific health effects of certain substances in the preparation.

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Irritant and corrosive effects:

| | Exposure time | Species | Evaluation | Method | Remark |
|---------------------------------|---------------|---------|------------|--------|--------|
| Primary irritation to the skin: | | | | | |
| Irritation to eyes | | | | | |

Irritation to respiratory tract:

Kommentar:
Only on basis of humantoxicological data.

Sensitisation

In case of skin contact:

In case of inhalation:

Repeated dose toxicity (sub-acute, sub-chronic, chronic)

| | Effect dose | Value | Exposure time period | Species | Method | Evaluation | Remark |
|------------------------|-------------|-------|----------------------|---------|--------|------------|--------|
| Sub-acute oral | | | | | | | |
| Sub-acute dermal | | | | | | | |
| Sub-acute inhalative | | | | | | | |
| Sub-chronic oral | | | | | | | |
| Sub-chronic dermal | | | | | | | |
| Sub-chronic inhalative | | | | | | | |
| Chronic oral | | | | | | | |
| Chronic dermal | | | | | | | |
| Chronic inhalative | | | | | | | |

Specific target organ toxicity (STOT)

| Repeated exposure | Specific effects | Affected organs | Remark |
|------------------------|------------------|-----------------|--------|
| Sub-acute oral | | | |
| Sub-acute dermal | | | |
| Sub-acute inhalative | | | |
| Sub-chronic oral | | | |
| Sub-chronic dermal | | | |
| Sub-chronic inhalative | | | |
| Chronic oral | | | |
| Chronic dermal | | | |
| Chronic inhalative | | | |

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CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction).

Carcinogenicity:

in-vitro Mutagenicity:

Genotoxicity:

in-vivo Mutagenicity:

Germ cell mutagenicity:

Toxicity for reproduction:

Summarised evaluation of the CMR properties:

11.3 Experiences made in practice

Observations relevant to classification:

Other observations:

11.4 General remarks:

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12. Ecological information

12.1 Ecotoxicity:

| Aquatic toxicity | Effect dose | Exposure time | Species | Method | Evaluation | Remark |
|------------------------|-------------|---------------|---------|--------|------------|--------|
| Acute fish toxicity | LC50 | 96 h | | | | |
| Acute daphnia toxicity | EC50 | 48 h | | | | |
| Acute algae toxicity | IC50 | 72 h | | | | |

12.2 Mobility:

Known or predicted distribution to environmental compartments:

Surface tension:

| Value | °C | Concentration | Method | Remark |
|-------|----|---------------|--------|--------|
| | | | | |
| | | | | |

Adsorption/Desorption

| Transport | A/D coefficient Henry constant | log K _{oc} | Volatility rate | Method | Hysteresis | Remark |
|------------|-----------------------------------|---------------------|--------------------|--------|------------|--------|
| Soil-water | | | | | | |
| Water-air | | | | | | |
| Soil-air | | | | | | |

Kommentar:

The information in this section shall be consistent with the information provided for in a registration where required and/or in a Chemical Safety Report where required.

Describe the possible effects, behaviour and environmental fate of the substance or preparation in air, water and/or soil. Where available, give relevant test data (e.g. LC50 fish ≤ 1 mg/l).

Describe the most important characteristics likely to have an effect on the environment owing to the nature of the substance or preparation and likely methods of use. Information of the same kind shall be supplied for dangerous products arising from the degradation of substances and preparations.

Ensure that information relevant to the environment is provided under other headings of the Safety Data Sheet, especially advice for controlled release, accidental release measures, transport and disposal considerations under headings 6, 7, 13, 14 and 15.

Kommentar:

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 preparation 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 VI to XI shall be included.

Kommentar:

The potential of the substance or the appropriate constituents of a preparation (1), if released to the environment, to transport to groundwater or far from the site of release.

Relevant data might include:
 — known or predicted distribution to environmental compartments,
 — surface tension,
 — absorption/desorption.

For other physicochemical properties see heading 9.

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12.3 Persistence and degradability

Abiotic Degradation

| Half-time | Method | Evaluation | Remark |
|-------------|--------|------------|--------|
| Sea-water | | | |
| Fresh-water | | | |
| Air | | | |
| Soil | | | |

Physical- and photo-chemical elimination

Biodegradation:

| Degradation rate (%) | Time (d) | Method | Evaluation | Remark |
|----------------------|----------|--------|------------|--------|
| | | | | |
| | | | | |

Bioaccumulative potential

Partition coefficient n-octanol /water (log K_{OW}):

| Value | Concentration | pH | °C | Method | Evaluation | Remark |
|-------|---------------|----|----|--------|------------|--------|
| | | | | | | |
| | | | | | | |

Bioconcentration factor (BCF):

| Value | Species | Method | Evaluation | Remark |
|-------|---------|--------|------------|--------|
| | | | | |
| | | | | |

Longterm-ecotoxicity:

| | Effect dose | Exposure time | Species | Method | Evaluation | Remark |
|--------------------------|-------------|---------------|---------|--------|------------|--------|
| Longterm fish toxicity | LC50 | | | | | |
| Chronic daphnia toxicity | EC50 | | | | | |

Kommentar:

The potential of the substance or the appropriate constituents of a preparation (1) to degrade in relevant environmental media, either through biodegradation or other processes such as oxidation or hydrolysis. Degradation half lives shall be quoted where available. The potential of the substance or appropriate constituents of a preparation (1) to degrade in sewage treatment plants shall also be mentioned.

Kommentar:

The potential of the substance or the appropriate constituents of a preparation (1) to accumulate in biota and, eventually, to pass through the food chain, with reference to the octanol-water partition coefficient (K_{ow}) and bioconcentration factor (BCF), if available.

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12.4 Results of PBT assessment:

Kommentar:

Where a Chemical Safety Report is required, the results of the PBT assessment as set in the Chemical Safety Report shall be given.

12.5 Other adverse effects:

Kommentar:

If available, include information on any other adverse effects on the environment, e.g. ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential and/or global warming potential.

12.6 Further ecological information:

13. DISPOSAL CONSIDERATIONS

13.1 Appropriate disposal / Product:

13.2 Waste codes / waste designations according to EWC / AVV:

13.3 Appropriate packaging:

13.4 Additional information:

Kommentar:

If the disposal of the substance or preparation (surplus or waste resulting from the foreseeable use) presents a danger, a description of these residues and information on their safe handling shall be given.

29.5.2007 EN Official Journal of the European Union L 136/91.

Specify the appropriate methods of disposal of both the substance or preparation and any contaminated packaging (incineration, recycling, landfilling, etc.)

14. TRANSPORT INFORMATION

Where a Chemical Safety Report is required, the information on the waste management measures that adequately control exposure of humans and the environment to the substance shall be consistent with the exposure scenarios set out in the annex to the Safety Data Sheet.

14.1 Land transport (ADR/RID/GGVSE):

Official transport designation:

Class:

Classification Code:

UN-No.:

Packing group:

Hazard label:

Tunnel restriction code:

Special provisions:

Kommentar:

Indicate any special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside his premises. Where relevant, provide information on the transport classification for each of the modal regulations: IMDG (sea), ADR (Council Directive 94/55/EC), RID (Council Directive 96/49/EC), ICAO/IATA (air).

14.2 Sea transport (IMDG-Code/GGVSee):

Proper Shipping Name:

Class:

UN-No.:

Packing group:

EmS:

Marine Pollutant:

Special provisions:

14.3 Air transport (ICAO-IATA/DGR):

Proper Shipping Name:

Class:

UN-No.:

Packing group:

Special provisions:

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15. REGULATORY INFORMATION

15.1 EU regulations

Chemical Safety Assessment:

Labelling (Regulation (EC) No 1272/2008)

Hazard components for labelling:

Signal words:

Hazard pictograms:

Hazard statements:

Precautionary statements:

Supplemental Hazard information (EU):

Special rules for supplemental label elements for certain mixtures:

OR

Labelling (67/548/EEC or 1999/45/EC)

Hazard symbols and hazard statements of dangerous substances and preparations:

Hazard components for labelling:

R-Phrases:

S-Phrases:

Remark:

Special provisions concerning the labelling of certain preparations:

Kommentar:

Indicate if a Chemical Safety Assessment has been carried out for the substance (or a substance in the preparation).

Not required for substances < 10 t/a.

Kommentar:

During transition period labelling according 67/548/EEC or 1999/45/EC alternatively possible.

Kommentar: e.g. „GHS06“

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Authorisations and/or restrictions on use:

Authorisations:

Restrictions on use:

Other EU regulations:

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

Kommentar:

If the substance or preparation covered by this safety data sheet is the subject of specific provisions in relation to protection of man or the environment at Community level (e.g. authorisations given under Title VII or restrictions under Title VIII) these provisions shall, as far as is possible, be stated.

Kommentar:

As an example only. Other EC regulations may be listed here too

15.2 National regulations (Germany)

Restrictions of occupation:

Störfallverordnung (12. BImSchV):

Wassergefährdungsklasse (water hazard class):

Technische Anleitung Luft (TA-Luft):

Other regulations, restrictions and prohibition regulations:

Kommentar:

Also mention, where possible, the national laws which implement these provisions and any other national measures that may be relevant.

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16. OTHER INFORMATION

16.1 Relevant R- and H-phrases (number and full text):

16.2 Training instructions:

16.3.1 Uses- and exposure categories (overview):

| Exposure | Industrial use: | Professional use: | Consumer use: |
|--|-----------------|-------------------|---------------|
| Human, oral, short term: | 0 | 0 | 0 |
| Human, oral, long term/repeated: | 0 | 0 | 0 |
| Human, dermal, short term: | 0 | + | + |
| Human, dermal, long term/repeated: | 0 | + | 0 |
| Human, inhalative short term: | 0 | + | + |
| Human, inhalative, long term/repeated: | 0 | + | + |
| Environment, water, short term/single: | 0 | + | + |
| Environment, water, continuous: | 0 | + | + |
| Environment, air, short term/single: | 0 | + | + |
| Environment, air, continuous: | 0 | + | 0 |
| Environment, soil, short term/single: | 0 | 0 | 0 |
| Environment, soil, continuous: | 0 | 0 | + |

use advised (+)

use advised against (-)

not identified use (0)

16.4 Further information:

16.5 Data sources:

Kommentar:

Indicate any other information which the supplier assesses as being of importance for the health and safety of the user and for the protection of the environment, for example:
— list of relevant R phrases. Write out the full text of any R phrases referred to under headings 2 and 3 of the Safety Data Sheet,
— training advice,
— recommended restrictions on use (i.e. non-statutory recommendations by supplier),
— further information (written references and/or technical contact point),
— sources of key data used to compile the Safety Data Sheet.

For a revised Safety Data Sheet, indicate clearly the information, which has been added, deleted or revised (unless this has been indicated elsewhere).

Kommentar:

Overview matrix (UEC).

Remark:

The yellow marked fields in the matrix may label as an example the main exposure routes of the upstream communication.

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Annex to extended safety data sheet (eSDS)

Exposure scenario

| Exposure scenario identification | | |
|--|--|--|
| 1 | Short title of the exposure scenario | |
| 2 | Processes and activities covered by the exposure scenario | |
| 3, 4.2, 4.3, 5 | Operational conditions of use | |
| Phase of production and application | | |
| 4.3, 6.1, 6.2, 7 | Risk management measures: Human (oral, dermal, inhalative, physical hazards) Environment (water, soil, air) Waste | Industrial, professional, consumer |
| Phase of service life | | |
| 4.3, 6.1, 6.2, 7 | Risk management measures: Human (oral, dermal, inhalative, physical hazards) Environment (water, soil, air) Waste | Industrial, professional, consumer |
| Information on estimated exposure and Downstream-user guidance | | |
| 8 | Exposure estimation and reference to its source: Human Environment | Industrial, professional, consumer Water, soil, air Exposure assessment instrument/tool/method |
| (8) | Additional determinants of exposure | <u>Substance characteristics:</u> Molecular weight and -size Physico-chemical properties Biodegradation etc. |
| 9 | Evaluation guidance to (or upstream: from) downstream user | Adjustments of the exposition estimation <u>Exposure scenario limitation:</u> Necessary additional testing Uses advised against |

Kommentar:

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 BDI-Modul „Annex eSDB“ (in process).

Kommentar:

In compliance with Technical guidance document, Part G, RIP 3.2-2, may 2008

Kommentar:

Example for a possible structure based on BDI modul „eSDB(ES)“.

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| | |
|---|--|
| 1 | Short title of the exposure scenario |
| 2 | Processes and activities covered by the exposure scenario |
| Operational Conditions of Use | |
| 3. | Duration and frequency of use <i>Specify for workers, consumers, environment (where relevant)</i> |
| 4.1 | Physical form of substance or preparation: surface to volume ratio of articles <i>Gas, liquid, powder, granules, massive solids; Surface area per amount of article containing the substance (if applicable);</i> |
| 4.2 | Concentration of substance in preparation or article |
| 4.3 | Amount used per time or activity <i>Specify for workers, consumers, environment (where relevant)</i> |
| 5 | Other relevant operational conditions of use <i>For example</i> <ul style="list-style-type: none"> • <i>Temperature, pH, mechanical energy input;</i> • <i>capacity of receiving environment (e.g. water flow in sewage/river; room volume x ventilation rate)</i> • <i>wear and tear with regard to articles (if applicable); conditions related to service-life-time of articles (if applicable)</i> |
| Risk Management Measures | |
| 6.1 | Risk management measures related to human health (workers or consumers) <i>Type and effectiveness of single options or combination of options on exposure to be quantified [options to be phrased as instructive guidance]; specify for oral, inhalation and dermal route;</i> |
| 6.2 | Risk management measures related to the environment <i>type and effectiveness of single options or combination of options to be quantified [options to be phrased as instructive guidance]; specify for waste water, waste gas, protection of soil;</i> |
| 7 | Waste management measures at the different life cycle stages of the substances (including preparations or articles at the end of service life); |
| Information on estimated exposure and DU guidance | |
| 8 | Exposure estimation and reference to its source <i>Estimation of exposure resulting from the conditions described above (entries 3-7 and the substance properties; make reference to the exposure assessment tool applied; specify for routes of exposure; specify for workers, consumers; environment)</i> |
| 9 | Guidance to DU to evaluate whether he works inside the boundaries set by the ES <i>Guidance how the DU can evaluate whether he operates within the conditions set in the exposure scenario. This may be based on a set of variables (and a suitable algorithm) which together indicate control of risk, but which have some flexibility in the respective values for each variable. Note: This will mostly be specific conditions for a certain type of product; this section may also include a link to a suitable (e.g. easy-to-use) calculation tool.</i> <i>Where relevant: Other methods for DU to check whether he works within the boundaries set by the ES may be included here as well.</i> |

Kommentar:

Standard format of a final exposure scenario for communication according to

ECHA Guidance on information requirements and chemical safety assessment
Part D: Exposure Scenario Building

http://reach.jrc.it/docs/guidance_document/information_requirements_en.htm