

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 1 of 27

Print date:

Revision date:

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

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

1.1 Product identifier:

1.1.1 Substances

Substance name:

Index No:

EC No:

REACH No:

CAS No:

1.1.2 Mixtures

Trade name / designation:

1.2 Other means of identification:

Kommentar:

This section prescribes 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.

Kommentar:

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 Nomenclature'), 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.

Kommentar:

In the case of a mixture, the trade name or designation shall be provided in accordance with Article 10(2.1) of Directive 1999/45/EC.

Kommentar: 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.

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 2 of 27

Print date:

Revision date:

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

1.2.1 Relevant 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 Details of the supplier of the safety data sheet:

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

E-Mail (competent person):

Information contact:

National contact:

1.4 EMERGENCY TELEPHONE NUMBER:

Kommentar: 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", "anti-oxidant".

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.

Kommentar: Standard phrase for extended SDS.

Kommentar: The uses which the supplier advises against and why shall, where applicable, be stated. This need not be an exhaustive list.

Kommentar: Examples for use advised against.

Kommentar: 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.

Kommentar: 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 and Article 17 of Directive 1999/45/EC), 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.

Foot note (general hint):

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.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 3 of 27

Print date:
Revision date:

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories

Hazard classes and Hazard categories	Hazard Statements
Flam. Liq. 2	H225
Acute Tox. 3	H301
Acute Tox. 3	H311
Acute Tox. 3	H331
STOT SE 1	H370

Classification procedure

On basis of test data
Human experience.
Minimum classification
Human experience
On basis of test data

2.1.2. Classification according to 67/548/EEC or 1999/45/EC

F; R11
T; R23/24/25
T; R39/23/24/25

2.1.3 Additional information:

No information available for acute dermal and inhalative toxicity.
Full text of R- and H-phrases: see section 16.

Kommentar:

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

Kommentar:

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

Kommentar:

In the case of a substance, the classification which arises from the application of the classification rules 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. From 1.6.2015 on classification of the mixture shall be given in accordance to CLP too.

Kommentar:

Especially important DU information for mixture classification required Proposed standard phrases (see www.euphrac.eu) are for example: Calculation method. 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".

Kommentar: RIP 3.6 decided to use L50 300 mg/kg for classification of MeOH as an example.

Kommentar:

The classification of the substance or mixture according to Council Directive 67/548/EEC shall also be given.

Kommentar:

If the classification, including the hazard statements and R phrases, is not written out in full, reference shall be made to Section 16 where the full text of each classification, including each hazard statement and R phrase, shall be given.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 4 of 27

Print date:
Revision date:

2.2 Label elements

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

Product identifier:

Substances:

Methanol
Index No 603-001-00-X

Mixtures:

Metha Sol

Hazard components for labelling:

Methanol

Hazard pictograms



GHS02



GHS06



GHS08

Signal word:

Danger

Hazard statements:

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H370 Causes damage to organs.

Precautionary statements:

Supplemental Hazard information (EU):

Special rules for supplemental label elements for certain mixtures:

2.3 Other hazards

Adverse physicochemical effects:

Adverse human health effects and symptoms:

Adverse environmental effects:

Other adverse hazards:

Kommentar: In the case of a substance or mixture, 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.

Until 1.6.2015 in case of a mixture, based on the classification, at least the appropriate symbol(s), indication(s) of danger, risk phrase(s) and safety advice appearing on the label in accordance with Directive 1999/45/EC shall be provided. The symbol may be provided as a graphical reproduction of the symbol in black and white. The applicable label elements in accordance with Article 25 and Article 32(6) of Regulation (EC) No 1272/2008, in the case of a substance, or Sections A and B of Annex V to Directive 1999/45/EC, in the case of a mixture, shall be provided.

Kommentar: CLP, Art. 18

Kommentar:
No „header“, for explanation only.

Kommentar: Example „Methanol“

Kommentar:
No „header“, for explanation only.

Kommentar: Trade name or the designation of the mixture.

Kommentar: To be added if applicable

Kommentar: To be added if applicable for mixtures only.

Kommentar: The substance or mixture, such as 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 formation of air contaminants during hardening or processing, dustiness, 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.

Example phrases:

“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”

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 5 of 27

Print date:
Revision date:

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

INDEX No:
EC No:
REACH Registration No:
CAS No:

Purity:
Synonymes:
Stabilisers:
Hazard impurities:

DRAFT

Kommentar: 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.

Kommentar:
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.

Kommentar: optional

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 6 of 27

Print date:
Revision date:

3.2 Mixtures

3.2.1 Description of the mixture:

Aqueous solution of methanol. No further substances with acute toxicity.

3.2.2 Hazardous ingredients*

CAS No	EC No	Index No	REACH No	% [weight]	Name	Classification acc. to Regulation (EC) 67/548/EEC
67-56-1	200-659-6	603-001-00-X	XX-XXXXXXXXXX-XX-XXXX	50	Methanol	F; R11 T; R23/24/25 T; R39/23/24/25
CAS No	EC No	Index No	REACH No	% [weight]	Name	Classification acc. to Regulation (EC) 1272/2008 [CLP]
67-56-1	200-659-6	603-001-00-X	XX-XXXXXXXXXX-XX-XXXX	50	Methanol	Flam. Liq. 2, H22 Acute Tox. 3, H302 Acute Tox. 3, H312 Acute Tox. 3, H332 STOT SE 1, H372

3.3 Additional information:

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

Kommentar: 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 has been allowed under Art. 15 of 1999/45/EC or under Art. 24 CLP, that name can be used.

Kommentar:
1 .. dangerous preparation:
1a all health or environmental hazardous substances, if
≥ general cut-off 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

Kommentar: For a dangerous mix. acc. to 1999/45/EC, the following substances shall be indicated, together with their conc. or conc. range:
(a) substances presenting a health or environmental hazard acc. 67/548/EEC and substances presenting a health or environmental hazard acc. CLP, provided that info complying with the classification criteria has been made available to the supplier of the mixt., if those substances present in conc. ≥ than the lowest of any of the following: (i) the applicable conc. defined in the table of Art. 3 (3) of 1999/45/EC; (ii) the specific conc. limits given in Part 3, Annex VI, CLP; (iii) M-factor; (iv) the conc. limits given in Part B, Annex II, III and V of 1999/45/EC; (v) specific conc. limits and M-factor of the C & L inventory; generic cut-off value CLP; substances for which there are EC OELs; (c) ≥ 0,1 % PBT- or vPvB-Substances. Valid until 1.6.2015.

* 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.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 7 of 27

Print date:
Revision date:

4. FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General informations:

4.1.2 In case of eye contact:

4.1.3 In case of inhalation:

4.1.4 In case of skin contact:

4.1.5 In case of ingestion:

4.1.6 Self-protection of the first aider:

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects:

4.3 Indication of any immediate medical attention and special treatment needed

Kommentar:

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.

Kommentar:

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.

Kommentar:

Specify first whether immediate medical attention is required.

Kommentar:

Briefly summarised information shall be provided on the most important symptoms and effects, both acute and delayed, from exposure.

Kommentar:

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.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 8 of 27

Print date:
Revision date:

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

Unsuitable extinguishing media:

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

5.3 Advice for fire-fighters

5.4 Additional information:

Kommentar:

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.

Kommentar:

Information shall be provided on the appropriate extinguishing media.

Kommentar:

Indications shall be given whether any extinguishing media are inappropriate for a particular situation involving the substance or mixture.

Kommentar:

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".

Kommentar:

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.

DRAFT

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 9 of 27

Print date:

Revision date:

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment:

Emergency procedures:

6.1.2 For emergency responders

6.2 Environmental precautions:

6.3 Methods and material for containment and cleaning up

6.3.1 For containment:

6.3.2 For cleaning up:

6.3.3 Other information:

6.4 Reference to other sections

6.5 Additional information:

Kommentar:

If appropriate refer to headings 8 and 13.

Kommentar:

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.

Kommentar:

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

Kommentar:

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.

Kommentar:

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.

Kommentar:

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).

Kommentar:

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 ...'.

Kommentar:

If appropriate Sections 8 and 13 shall be referred to.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 10 of 27

Print date:
Revision date:

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Protective measures:

Measures to prevent fire:

Measures to prevent aerosol and dust generation:

Measures to protect the environment:

7.1.2 Advice on general occupational hygiene

Kommentar:

This section of the SDS 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 SDS 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 acc. Art. 5 of 98/24/EC and Art. 5 of 2004/37/EC.

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

Kommentar:

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.

DRAFT

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 11 of 27

Print date:
Revision date:

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:

Further information on storage conditions:

7.3 Specific end use(s):

Recommendations:

Industrial sector specific solutions:

Kommentar: 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.

Kommentar: For substances/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 ES 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 SDS and the ES are consistent with the CSR for the mixture instead of with the CSR for each substance in the mixture.

Kommentar: If industry or sector specific guidance is available, detailed reference to it (including source and issuing date) may be made.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 12 of 27

Print date:
Revision date:

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Preventive industrial medical examinations according are to be carried out.

8.1 Control parameters

8.1.1 Occupational exposure limits:

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)								

8.1.2 Biological limit values:

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

8.1.3 Additional exposure limits under the conditions of use:

Kommentar:

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.

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: 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.

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;
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;
Any other national occupational exposure limit values;

Kommentar: Information on currently recommended monitoring procedures shall be provided at least for the most relevant substances.

Kommentar: National biological limit values that correspond to Community biological limit values in accordance with 98/24/EC, including any notations as referred to in Article 2(1) of 95/320/EC; any other national biological limit values.

Kommentar: If air contaminants are formed when using the substance or mixture as intended, applicable occupational exposure limit values and/or biological limit values for these shall also be listed.

Safety Data Sheet

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

Trade name:
 Product No:
 Specification No:

Version: 1.0 / EN
 Page 13 of 27

Print date:
 Revision date:

8.1.4 DNEL/PNEC-values:

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

Kommentar:
 Where a CSR is required or a DNEL as referred to in Section 1.4 of Annex I or a PNEC as referred to in Section 3.3 of Annex I is available, the relevant DNELs and PNECs for the substance shall be given for the exposure scenarios from the chemical safety report set out in the annex to the SDS.

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: For preparations only.

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)

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

8.1.5 Control banding approach

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

Task	Hazard band	Scale of use	Ability to become airborne	Control approach	see especially ICCT Control Guidance Sheets

Kommentar:
 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.

ICCT - Guidelines and - Control Guidance Sheets:
www.ilo.org/public/english/protection/safework/ctrl_banding/toolkit/main_guide.pdf

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

- Product related measures to prevent exposure:
- Instructual measures to prevent exposure:
- Organisational measures to prevent exposure:
- Technical measures to prevent exposure:

Kommentar: The description of appropriate exposure control measures shall relate to the identified use(s) of the substance/mixture as referred to in Subsection 1.2. This information shall be sufficient to enable the employer to carry out an assessment of risk to the safety and health of workers arising from the presence of the substance or mixture acc. Art. 4 to 6 of 98/24/EC as well as in acc. to Art. 3 to 5 of Directive 2004/37/EC, where appropriate. This information shall complement that already given under Section 7.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 14 of 27

Print date:
Revision date:

8.2.2 Personal protection equipment:

8.2.2.1 Eye and face protection:

8.2.2.2 Skin protection:

Hand protection:
Body protection:
Other protection:

8.2.2.3 Respiratory protection:

8.2.2.4 Thermal hazards:

8.2.3 Environmental exposure controls:

Product related measures to prevent exposure:
Instructional measures to prevent exposure:
Organisational measures to prevent exposure:
Technical measures to prevent exposure:

8.2.4 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: Where individual protection measures are needed, specify in detail which equipment will provide adequate and suitable protection. Refer to 89/686/EEC relating to PPE and make reference to the appropriate CEN standards.

Kommentar: Individual protection measures, such as PPE. The information on use of PPE shall be consistent with good occupational hygiene practices and in conjunction with other control measures, including engineering controls, ventilation and isolation. Where appropriate, Section 5 shall be referred to for specific fire/chemical personal protective equipment advice.

Kommentar: 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.

Kommentar: 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.

Kommentar: If necessary, any additional skin protection measures and specific hygiene measures shall be indicated.

Kommentar: 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.

Kommentar: 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.

Kommentar: 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.

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 15 of 27

Print date:

Revision date:

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Physical state:

Colour:

Odour:

Odour threshold:

	Value	Concentration	Method	Remark
pH (20 °C):				
Melting point/range (°C):				
Initial boiling point/range (°C):				
Decomposition temperature (°C)				
Flash point (°C):				
Ignition temperature (°C):				
Vapour pressure (hPa) at [... °C]:				
Vapour density (air=1)				
Density (g/cm ³) at [... °C]:				
Bulk density (kg/m ³):				
Water solubility (20 °C in g/l):				
Solubility(ies):				
Partition coefficient n-Octanol/Water (log Po/w)				
Henry's law constant				
Viscosity, dynamic (mPa s):				

Kommentar:

This section of the SDS shall describe the empirical data relating to the substance/mixture, if relevant. The information in this section shall be consistent with the information provided in the registration and/or in the CSR where required, and with the classification. Critical info such as test temperature and 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 to the classifier, 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 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/mixture and should support transport classification.

Kommentar: The pH shall be indicated of the substance or mixture as supplied or of an aqueous solution; in the latter case, indicate the concentration and temperature, preferably for room temperature (...g/l water, at ...°C). Where the pH can be properly measured, it shall be determined from the original product. Otherwise, the pH of the dissolved substance shall be indicated. Also specify if the alkali or acid reserve has been considered.

Kommentar: Freezing point;

Kommentar: (at ... °C); It should be stated whether the value indicated has been measured or calculated, and which substance(s) it refers to.

Kommentar: (at ... °C);

Kommentar: For mixtures, this is useful information with respect to the individual constituents only.

Kommentar: For mixtures, this is useful information with respect to the individual constituents only.

Kommentar: For certain product groups, data concerning the viscosity (dynamic viscosity in mPas or kinematic viscosity in mm²/s) or the flow times (in s) including the measuring temperature shall be provided for the solvent separation test and 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.

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 16 of 27

Print date:

Revision date:

9.2 Physical hazards:

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 safety information:

Properties of explosive atmospheres (mixtures):

Gases and vapours:

Dusts:

Physical-chemical properties of nanoparticles:

Limiting oxygen concentration

Bulk density

Solubility in different media

Stability in organic solvents and identity of relevant degradation products

Evaporation rate

Conductivity

Surface tension

Dissociation constant in water (pKa)

Oxidation-reduction Potential

Fat solubility (solvent – oil to be specified)

Kommentar:

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.

Kommentar:

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.

Kommentar:

As a basis for all explosion prevention and protection measures:

Kommentar:

- upper and lower explosion limit
- upper and lower explosion point
- auto-ignition temperature
- explosion group (maximum experimental safe gap)
- minimum ignition energy
- maximum rate of explosion pressure rise
- maximum explosion pressure

Kommentar:

- lower explosion limit of dust clouds
- dust explosion class (VDI)
- particle size distribution (median value)
- moisture content (quantitative determination of water content)
- minimum ignition temperature of a dust cloud
- minimum ignition energy of dust/air mixtures
- maximum explosion pressure of dust clouds
- maximum rate of explosion pressure rise of dust clouds

Kommentar:

The main physical parameters of interest with respect to nanoparticle characterisation are: the size, shape, specific surface area, aspect ratio, agglomeration/aggregation state, and size distribution, and surface morphology/topography, structure including crystallinity and defect structure and solubility. The main chemical parameters are: structural formula/molecular formula, composition of nanomaterials (including degree of purity, known impurities or additives), phase identity, surface chemistry, composition, charge tension, reactive sites, physical structure, photocatalytic properties, zeta potential and hydrophilicity/lipophilicity (Scientific Committee on Emerging and Newly Identified Health Risks: SCENIHR, 2009).

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 17 of 27

Print date:

Revision date:

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:

Kommentar: 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 released into the environment, incl., where appropriate, a reference to the test methods used. 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 given.

Kommentar: The reactivity hazards of the substance/mix. shall be described. 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 exposed to during transportation, storage and use shall be considered.

Kommentar: It shall be indicated if the substance /mix. is stable or unstable under normal ambient and anticipated storage and handling cond. 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/ mixture shall be indicated.

Kommentar: 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.

Kommentar: Cond. such as temp., pressure, light, shock, static discharge, vibrations or other physical stresses that might result in a hazardous situation shall be listed and if appr. a brief descr. of measures to be taken to manage risks associated with such hazards shall be given.

Kommentar: 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 situation shall be listed and if appr. a brief descr. of measures to be taken to manage risks associated with such hazards shall be given.

Kommentar: 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.

DRS

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 18 of 27

Print date:
Revision date:

11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution

Non-human toxicological data

Method:

Dosis:

Routes of administration:

Results:

Absorption:

Distribution:

Metabolism:

Excretion:

Human toxicological data:

11.2 Information on toxicological effects

Information shall be provided for each hazard class, differentiation or effect. If it is stated that the substance or mixture is not classified for a particular hazard class, differentiation or effect, the safety data sheet 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 safety data sheet shall specify "based on available data, the classification criteria are not met." The data included in this subsection shall apply to the substance or mixture as placed on the market. If available, the relevant toxicological properties of the hazardous substances in a mixture shall also be provided, such as the LD50, Acute Toxicity Estimates or LC50.

Where there is a substantial amount of test data on the substance or mixture, 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, information supporting this conclusion shall be provided.

Information on likely routes of exposure.

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.

Symptoms related to the physical, chemical and toxicological characteristics

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".

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.

Interactive effects

Information on interactions shall be included if relevant and available.

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.

Kommentar: 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 comprehensible 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.

Kommentar: 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 substances 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.

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 19 of 27

Print date:

Revision date:

11.2.1 Substances

Acute toxicity

	Effect dose	Species	Method	Remark
Acute oral toxicity	LD50 resp. cATpE			
Acute dermal toxicity	or ATE _{mix}			
Acute inhalative toxicity	LC50 resp. cATpE or ATE _{mix}			

Kommentar:

For substances subject to registration, brief summaries of the information derived from the application of Annexes VII to XI shall be given, including, where appropriate, a reference to the test methods used.

Kommentar: cATpE = converted acute toxicity point estimate

Kommentar: cATpE = converted acute toxicity point estimate

Skin corrosion/irritation:

Serious eye damage/irritation:

Respiratory or skin sensitisation

STOT-single exposure

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

Kommentar:

Hazard class „Irritation to respiratory tract“ on basis of humantoxicological data only.

Safety Data Sheet

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

Trade name:
 Product. No:
 Specification No:

Version: 1.0 / EN
 Page 20 of 27

Print date:
 Revision date:

CMR effects (carcinogenity, 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:

STOT-repeated exposure

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			

Aspiration hazard:

Specific symptoms in animal studies:

In case of ingestion:
In case of skin contact:
In case of inhalation:
In case of eye contact:

11.2.2 Mixtures

11.3 Experiences made in practice

Observations relevant to classification:
Other observations:

11.4 Other information:

Kommentar:

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.

Kommentar:

The relevant effects, for which information shall be provided, are:

- (a) . acute toxicity;
- (b) . irritation;
- (c) . corrosivity;
- (d) . sensitisation;
- (e) . repeated dose toxicity;
- (f) . carcinogenicity;
- (g) . mutagenicity;
- (h) . toxicity for reproduction.

For the health effects of carcinogenicity, mutagenicity and toxicity for reproduction, 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.

For other health effects, if a mixture has not been tested as a whole for a given health effect, information relevant to that health effect relating to substances listed under Section 3 shall be provided, if relevant.

Mixture versus substance information

The substances in a mix. 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 mix. 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. Classification of mix. as having effects of CMR must be calculated from available info regarding substances in the mix. For other health effects, it is necessary to consider whether the concentration of each substance is sufficient to contribute to the overall health effects of the mix. The info on toxic effects shall be presented for each substance, except for the following cases:

- (a) if the information is duplicated, it shall be listed only once for the mix. overall, such as when 2 substances both cause vomiting and diarrhoea;
- (b) if it is unlikely that these effects will occur at the concentrations present, such as when a mild irritant is diluted to below a certain concentration in a non-irritant solution;
- (c) where information on interactions between substances in a mix. is not available, assumptions shall not be made and instead the health effects of each substance shall be listed separately.

Safety Data Sheet

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

Trade name:
 Product. No:
 Specification No:

Version: 1.0 / EN
 Page 21 of 27

Print date:
 Revision date:

12. Ecological information

12.1 Toxicity:

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				

Longterm-ecotoxicity:

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

12.2 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

Kommentar: 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.

Kommentar: 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.

Kommentar: 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

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 22 of 27

Print date:

Revision date:

12.3 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

Kommentar:

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 (K_{ow}) 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.

12.4 Mobility in soil

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:

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, K_{oc} values can be predicted from octanol/water partition coefficients (K_{ow}). 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.

12.5 Results of PBT and vPvB assessment

12.6 Other adverse effects:

12.7 Additional information:

Kommentar:

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

Kommentar:

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.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 23 of 27

Print date:
Revision date:

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:

Waste codes / waste designations according to EWC / AVV:

13.1.2 Waste treatment options:

13.1.3 Sewage disposal options:

13.1.5 Other disposal recommendations:

13.2 Additional information:

DRAFT

Kommentar:

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 Council¹ 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.

Kommentar:

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);

Kommentar:

Physical/chemical properties that may affect waste treatment options shall be specified;

Kommentar:

Sewage disposal shall be discouraged

Kommentar:

Where appropriate, any special precautions for any recommended waste treatment option shall be identified.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 24 of 27

Print date:
Revision date:

14. TRANSPORT INFORMATION

This section of the safety data sheet 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: European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)¹, Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)², European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)³, all three of which have been implemented by Directive 2008/68/EC of the European Parliament and of the Council on the inland transport of dangerous goods⁴, International Maritime Dangerous Goods (IMDG) Code⁵ (sea), and Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO)⁶ (air).

14.1 Land transport (ADR/RID/GGVSE):

UN-No.:
Official transport designation:
Class:
Classification Code:
Packing group:
Hazard label:
Tunnel restriction code:
Special provisions:

14.2 Sea transport (IMDG-Code/GGVSee):

Proper Shipping Name:
Class:
UN-No.:
Packing group:
Segregation group:
EmS:
Marine Pollutant:
Special provisions:

14.3 Air transport (ICAO-IATA/DGR):

Proper Shipping Name:
Class:
UN-No.:
Packing group:
Special provisions:

14.4 Additional information:

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

Kommentar: 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.

Kommentar: 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.

Kommentar: 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.

Kommentar: 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.

Kommentar: Info shall be provided on any special precautions with which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises.

Kommentar: 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 authorized 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.

Kommentar: This subsection only applies when cargoes are intended to be carried in bulk according to the following International Maritime Organisation (IMO) instruments: Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)¹ and the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code) (IBC Code)¹. 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 Marine Environment Protection Committee (MEPC) 2/Circular¹. Ship type required and pollution category shall be indicated.

¹ United Nations, Economic Commission for Europe, version applicable as from 1 January 2009, ISBN-978-92-1-139131-2.

² Annex 1 to Appendix B (Uniform Rules concerning the Contract for International Carriage of Goods by Rail) of the Convention concerning International Carriage by Rail, version with effect from 1 January 2009.

³ Version as revised as of 1 January 2007.

⁴ OJ L 260, 30.9.2008, p. 1.

⁵ International Maritime Organisation, 2006 edition, ISBN 978-92-8001-4214-3.

⁶ IATA, 2007-2008 edition.

Safety Data Sheet

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

Trade name:
Product. No:
Specification No:

Version: 1.0 / EN
Page 25 of 27

Print date:
Revision date:

15. REGULATORY INFORMATION

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

15.1.1 EU regulations

Authorisations and/or restrictions on use:

Authorisations:

Restrictions on use:

Other EU regulations:

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

15.1.2 National regulations (Germany)

Restrictions of occupation:

Störfallverordnung (12. BImSchV):

Wassergefährdungsklasse (water hazard class):

Technische Anleitung Luft (TA-Luft):

Other regulations, restrictions and prohibition regulations:

15.2 Chemical Safety Assessment:

16. OTHER INFORMATION

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

16.2 Training instructions:

16.3 Further information:

16.4 Data sources:

Kommentar:

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 layer¹, 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.

Kommentar: 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 provisions and any other national measures that may be relevant shall be mentioned. 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.

Kommentar: Example only. Other EC regulations may be listed here too

Kommentar: 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.

Kommentar: This section of the SDS shall describe the information relevant to the compilation of the SDS. It shall incorporate other info that is not included in Sections 1 to 15, including information on revision of the SDS. In case of a revised SDS, a clear indication of where changes have been made to the previous version of the SDS, unless such indication is given elsewhere in the SDS, 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. A key or legend to abbreviations and acronyms used in the SDS;

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 26 of 27

Print date:

Revision date:

Annex to extended safety data sheet (eSDS)

Structure is under Revision!!!!!!

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)“.

Safety Data Sheet

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

Trade name:

Product. No:

Specification No:

Version: 1.0 / EN

Page 27 of 27

Print date:

Revision date:

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

UNDER REVISION!!!!!!!