

Safety Data Sheet

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

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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:

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:

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

67/548/EEC or 1999/45/EC	
Hazards characteristics	R-Phrases

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:

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance related informations

CAS No:

EC No:

INDEX No:

REACH Registration No:

Purity:

Synonymes:

Stabilisers:

Hazard impurities:

3.2 Additional hints:

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

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	

3.3 Remark:

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

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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:

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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:

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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:

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

PNEC		Consumer	Exposure route		Critical component	Remark
Worker	Professional					
Industry			Water	Short Term (single use) Long Term (continous)		
			Soil	Short Term (single use) Long Term (continous)		
			Air	Short Term (single use) Long Term (continous)		

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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:

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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:

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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 toxicological data

Method:

Dosis:

Routes of administration:

Results:

Absorption:

Distribution:

Metabolism:

Excretion:

Human toxicological 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:

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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:

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						

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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:

Deagradation 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					

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12.4 Results of PBT assessment:

12.5 Other adverse effects:

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:

14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID/GGVSE):

Official transport designation:

Class:

Classification Code:

UN-No.:

Packing group:

Hazard label:

Tunnel restriction code:

Special provisions:

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:

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:

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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):

15.2 National regulations (Germany)

Restrictions of occupation:

Störfallverordnung (12. BImSchV):

Wassergefährdungsklasse (water hazard class):

Technische Anleitung Luft (TA-Luft):

Other regulations, restrictions and prohibition regulations:

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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:			
Human, oral, long term/repeated:			
Human, dermal, short term:			
Human, dermal, long term/repeated:			
Human, inhalative short term:			
Human, inhalative, long term/repeated:			
Environment, water, short term/single:			
Environment, water, continuous:			
Environment, air, short term/single:			
Environment, air, continuous:			
Environment, soil, short term/single:			
Environment, soil, continuous:			

use advised (+)

use advised against (-)

not identified use (0)

16.4 Further information:

16.5 Data sources:

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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

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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>