



according to Regulation (EC) No 1907/2006

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Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	10 - < 20 %
107-21-1	Xn - Harmful R22	
	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		
203-815-1	morpholine	0.1 - < 1 %
110-91-8	C - Corrosive, Xn - Harmful R10-20/21/22-34	
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H226 H311 H331 H302 H314 H318	
01-2119496057-30		

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

SECTION 4: First aid measures**4.1. Description of first aid measures****After inhalation**

Provide fresh air.

After contact with skin

Wash with plenty of water. Change contaminated clothing.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.

After ingestion

Rinse mouth immediately and drink plenty of water.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn.

5.3. Advice for firefighters

Use appropriate respiratory protection.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Wear personal protection equipment.



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Remove all sources of ignition.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning upAbsorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation as well as local exhaustion at critical locations. When using do not eat, drink, smoke, sniff.

Advice on protection against fire and explosion

No special measures are necessary.

Further information on handling

Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed.

Advice on storage compatibility

No special measures are necessary.

Further information on storage conditions

Protect from frost.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL
110-91-8	Morpholine	10	36		TWA (8 h)	WEL
		20	72		STEL (15 min)	WEL

Additional advice on limit values

- a no restriction
- b End of exposure or shift
- c in long-term exposure: after several shifts
- d prior to next shift

STEL (EC) : Short Term Exposure Limit

TWA (EC): time-weighted average



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U: Urea

B: Blood

8.2. Exposure controls**Protective and hygiene measures**

Change contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min
Thickness of the glove material 0,45 mm

DIN EN 374

Skin protection

Only wear fitting, comfortable and clean protective clothing.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	pink
Odour:	lemon.

pH-Value (at 20 °C):

Test method
10 DIN 19268

Changes in the physical state

Melting point:	No information available.
Initial boiling point and boiling range:	100 °C
Sublimation point:	No information available.
Softening point:	No information available.
Flash point:	No information available.
Lower explosion limits:	No information available.
Upper explosion limits:	No information available.
Ignition temperature:	No information available.
Vapour pressure:	No information available.
Vapour pressure:	No information available.
Density (at 20 °C):	1,015 g/cm ³ DIN 51757
Bulk density:	No information available.
Water solubility:	insoluble
Partition coefficient:	No information available.
Viscosity / dynamic:	No information available. DIN 53019-1
Flow time: (at 20 °C)	No information available.
Vapour density:	No information available.



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Evaporation rate: No information available.
 Solvent separation test: No information available.
 Solvent content: No information available.

9.2. Other information

Solid content: No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

No special precautionary measures are necessary.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No information available.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No information available.

Acute toxicity

Based on available data, the classification criteria are not met.

Acute toxicity

CAS No	Chemical name				
	Exposure route	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol				
	oral	LD50	1600 mg/kg	Rat	
	dermal	LD50 mg/kg	>3500	Rabbit	
110-91-8	morpholine				
	oral	LD50	1900 mg/kg	Rat	
	dermal	LD50	500 mg/kg	Rabbit	
	inhalative (4 h) vapour	LC50	8 mg/l	Rat	
	inhalative aerosol	ATE	0,5 mg/l		
	inhalative (4 h) gas	LC50	8000 ppm	Rat	

Irritation and corrosivity

Based on available data, the classification criteria are not met.



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Sensitising effects

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

Severe effects after repeated or prolonged exposure

May cause damage to organs through prolonged or repeated exposure. (ethanediol, ethylene glycol)

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

No indications of human carcinogenicity exist.

No indications of human germ cell mutagenicity exist.

No indications of human reproductive toxicity exist.

Aspiration hazard

Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal

No information available.

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

SECTION 12: Ecological information**12.1. Toxicity**

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol					
	Acute fish toxicity	LC50	72860 mg/l	96 h	Pimephales promelas	
	Acute algae toxicity	ErC50 mg/l	6500 - 13000	96 h	Selenastrum capricornutum	
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h	Daphnia magna	
	Fish toxicity	NOEC	72860 mg/l	7 d	Pimephales promelas	
	Crustacea toxicity	NOEC	8590 mg/l	7 d	Ceriodaphnia spec	
110-91-8	morpholine					
	Acute fish toxicity	LC50	179 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50	58 mg/l	72 h	Desmodesmus subspicatus.	
	Acute crustacea toxicity	EC50	45 mg/l	48 h	Daphnia magna (Big water flea)	
	Algae toxicity	NOEC	10 mg/l	4 d	Desmodesmus subspicatus.	

12.2. Persistence and degradability

There are no data available on the mixture itself. AOX (mg/l): 0

CAS No	Chemical name				
	Method	Value	d	Source	
	Evaluation				
110-91-8	morpholine				
	OECD 301E	93%	25		
	Easily biodegradable (concerning to the criteria of the OECD)				

12.3. Bioaccumulative potential



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There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,36
110-91-8	morpholine	-2,55

BCF

CAS No	Chemical name	BCF	Species	Source
110-91-8	morpholine	< 2,8		

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available.

Further information

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products070601 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; aqueous washing liquids and mother liquors
Classified as hazardous waste.**Waste disposal number of used product**070601 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; aqueous washing liquids and mother liquors
Classified as hazardous waste.**Waste disposal number of contaminated packaging**

150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); metallic packaging

Contaminated packaging

Water (with cleaning agent). Completely emptied packages can be recycled.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number:**

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

14.4. Packing group:

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)**14.1. UN number:**

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.



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14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

1999/13/EC (VOC): VOC-CH: -
VOC 1999/13/EG: 0,61 % w/w

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

94/69/EC (21st ATP). The benzene content of the product is less than 0.1%. It applies the annotation P. Classification and labeling as carcinogenic is not necessary.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)



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DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level

WEL (UK): Workplace Exposure Limits

TWA (EC): Time-Weighted Average

ATE: Acute Toxicity Estimate

STEL (EC) Short Term Exposure Limit

LC50: Lethal Concentration

EC50: half maximal Effective Concentration

ErC50: means EC50 in terms of reduction of growth rate

Relevant R phrases (number and full text)

- | | |
|----------|---|
| 10 | Flammable. |
| 20/21/22 | Harmful by inhalation, in contact with skin and if swallowed. |
| 22 | Harmful if swallowed. |
| 34 | Causes burns. |

Relevant H and EUH statements (number and full text)

- | | |
|------|---|
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H373 | May cause damage to kidneys through prolonged or repeated exposure by skin contact. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)