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

1.1. Product identifier

ACMOS 101-5060

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

Relevant identified uses

Release agent for white glue

Uses advised against

Consumer uses: Private households (= general public = consumers)
Sector of uses [SU]: 21
Do not use for private purposes (household).

Relevant identified uses - Further information:
Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of uses [SU]: 3
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of uses [SU]: 22
The product is intended for professional use.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name:	ACMOS CHEMIE KG	
Street:	Industriestrasse 49	
Place:	D-28199 Bremen	
Post-office box:	10 10 69 D-28010 Bremen	
Telephone:	+49 (0)421-5189-0	Telefax: +49 (0)421-511415
e-mail:	acmos@acmos.com	
Contact person:	Mr. Stephan Dryhaus	
e-mail:	sds@acmos.com	
Internet:	www.acmos.com	
Responsible Department:	Laboratory (Division: Occupational- / Product security) - see under section 16	

1.4. Emergency telephone number: +49 (0)551 19240 (Emergency information service / official advisory body: Giftinformationszentrum Nord, Universität Göttingen, 24 h from mo. - su.)
Language(s) of Telephone Service: DE, EN

Supplier

Company name:	ACMOS CHEMIE KG	
Street:	Industriestrasse 49	
Place:	D-28199 Bremen	
Post-office box:	10 10 69 D-28010 Bremen	
Telephone:	+49 (0)421-5189-0	Telefax: +49 (0)421-511415
e-mail:	acmos@acmos.com	
Contact person:	Mr. Stephan Dryhaus	
e-mail:	sds@acmos.com	
Internet:	www.acmos.com	
Responsible Department:	Laboratory (Division: Occupational- / Product security) - see under section 16	

1.4. Emergency telephone number: +49 (0)551 19240 (Emergency information service / official advisory body: Giftinformationszentrum Nord, Universität Göttingen, 24 h from mo. - su.)
Language(s) of Telephone Service: DE, EN

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

2.2. Label elements

Regulation (EC) No. 1272/2008

Special labelling of certain mixtures

EUH208	Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.
EUH210	Safety data sheet available on request.
	Labeling according to Regulation (EU) No 528/2012 on biocides, Article 58 (3) and Regulation (EC) No 1272/2008, Article 25 (due to the specific conditions of the active substance approval): a) Contains biocidal products: Product-type 6: Preservatives for products during storage. b) Property attributed to the treated article: None c) Name of all active ingredients: See product label. d) Names of contained nanomaterials: None e) Relevant use instructions: Use personal protective equipment as required.

Additional advice on labelling

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

2.3. Other hazards

Adverse physicochemical effects:
See section 9 for physical and chemical properties.

Adverse human health effects and symptoms:
See section 11 for toxicological information.
May cause sensitisation especially in sensitive humans.

Adverse environmental effects:
See section 12 for environmental information.

Other adverse effects:
Special danger of slipping by leaking/spilling product.

Results of PBT-/vPvB-assesment:
See under section 12.5 - Results of PBT and vPvB assessment.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Solution of active ingredients in water

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
107-21-1	ethane-1,2-diol (ethylene glycol)			5 - < 10 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove affected person from the danger area and lay down.
Take off immediately all contaminated clothing and wash it before reuse.
Put victim at rest, cover with a blanket and keep warm.
Do not leave affected person unattended.
If a person vomits when lying on his back, place him in the recovery position.
If breathing is irregular or stopped, administer artificial respiration.
If unconscious place in recovery position and seek medical advice.
Never give anything by mouth to an unconscious person or a person with cramps.
In the event of cardiac arrest immediately perform cardiopulmonary resuscitation.
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Self-protection of the first aider:
Wear personal protection equipment (refer to section 8).
First Aid.

Notes for the doctor:
No special measures are necessary.

After inhalation

Remove victim out of the danger area.
Provide fresh air.
Consult a doctor immediately in the case of inhaling spray mist and show him packing or label.

After contact with skin

Wash immediately with:
Water and soap
Rub greasy ointment into the skin.
Do not wash with:
Solvents/Thinner
In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.
Protect uninjured eye.

After ingestion

Do NOT induce vomiting.
Give nothing to eat or drink.
Never give anything by mouth to an unconscious person or a person with cramps.
Call a physician immediately.

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

The following symptoms may occur:
Cough
Allergic reactions
Dyspnoea
Acidosis
Depression of central nervous system
Headache
Nausea
Drowsiness
Dizziness

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

Full water jet
Water spray jet
Water mist
Extinguishing powder (ABC-powder)
Foam
Carbon dioxide (CO_2)

Fire class: not relevant

Unsuitable extinguishing media

None known

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products:
None known
The product itself does not burn.

5.3. Advice for firefighters

Usual measures of preventive and averting fire protection.
Co-ordinate fire-fighting measures to the fire surroundings.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters

not relevant

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes and clothes.
Do not breathe vapour/aerosol.
Prevent further leakage or spillage if safe to do so.
Provide adequate ventilation.
Special danger of slipping by leaking/spilling product.

For non-emergency personnel:
Use personal protection equipment.
Walk out of the danger zone and notify trained personnel.
Emergency procedures:
Keep the factory emergency plan and the information chain.

For emergency responders:
Use personal protection equipment.
The personal protective equipment must be adapted to the situation.
Suitable material:
See under section 8.2 - Personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Do not allow to enter into soil/subsoil.
Ensure waste is collected and contained.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

For containment:
Repair leaks if without risk.
Move containers from spill area.
Make sure spills can be contained, e.g. in sump pallets or kerbed areas.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Cover drains.

For cleaning up:
Clean-up methods - large spillage:
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Shovel into suitable container for disposal.
Local authorities should be advised if significant spillages cannot be contained.
Clean-up methods - small spillage:
Clear spills immediately.
Wipe up with absorbent material (eg. cloth, fleece).
Collect in closed and suitable containers for disposal.
Clear contaminated areas thoroughly.
Recommended cleansing agent:
Clean with detergents. Avoid solvent cleaners.
Retain contaminated washing water and dispose it.
Ensure all waste water is collected and treated via a waste water treatment plant.
Ventilate affected area.

Suitable material for taking up:
Sand
Kieselguhr
Universal binder
Absorbing material, organic

Unsuitable material for taking up:
None known

6.4. Reference to other sections

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

Measures to prevent aerosol and dust generation:
All work processes must always be designed so that the following is as low as possible:
Inhalation of vapours or spray/mists
Eye contact
Skin contact

Technical ventilation of workplace
Use only in a exhaust booth with integrated air filter.
Use in ventilated spray booths only.
Recirculation of exhaust air is not recommended.
Always close containers tightly after the removal of product.

Advice on protection against fire and explosion

Measures to prevent fire:
The product is not: Combustible
Usual measures for fire prevention.
Fire-fighting equipment on the basis of class B.

Further information on handling

Environmental precautions:
Transfer wash-downs in sealed containers.
Provide for retaining containers, eg. floor pan without outflow.
For restriction of emission on volatile organic compounds (VOC) the solvent vapours should be supplied to an exhaust air purification facility (filter, gas washer, incineration).

Advices on general occupational hygiene:
Wear personal protection equipment (refer to section 8).
Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.
General industrial hygiene practice.
Handle in accordance with good industrial hygiene and safety practice.
Working places should be designed to allow cleaning at any time.
Floors, walls and other surfaces in the hazard area must be cleaned regularly.
Clean spray booth and exhaust hood completely with every product change.
When using do not eat, drink, smoke, sniff.
Thorough skin-cleansing after handling the product.
Used working clothes should not be worn outside the work area.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Suitable floor material:
Floors should be impervious, resistant to liquids and easy to clean.

Protect against:
Heat
Cold

Recommended storage temperature: +10 ... +30 °C

Keep away from:
Food and feedingstuffs

Packaging materials:
Suitable container/equipment material:
Keep/Store only in original container.
Unsuitable container/equipment material:
See under section 8.2 - Hand protection.

Hints on joint storage

Do not store together with:
Storage class:
1 (Explosive hazardous substances)
6.2 (Infectious substances)
7 (Radioactive substances)

Further information on storage conditions

Technical measures and storage conditions:
The valid water and zoning ordinances must be observed.

Keep container tightly closed.
Protect containers against damage.
Ensure adequate ventilation of the storage area.
Do not store outside.
See also instuctions on the label.

7.3. Specific end use(s)

Recommendation:
Possibilities for substitution and references to less hazardous products:
This product was designed for a special application purpose and optimized appropriately.
In case of questions regarding product and application, please contact our field service in line with customer service or our technical sales department.
Observe technical data sheet.

Industrial sector specific solutions:

Hazardous substance information systems of professional associations:

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, particulate	-	10		TWA (8 h)	WEL
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
107-21-1	ethane-1,2-diol (ethylene glycol)		
Worker DNEL, long-term	dermal	systemic	106 mg/kg bw/day
Worker DNEL, long-term	inhalation	local	35 mg/m³
Consumer DNEL, long-term	dermal	systemic	53 mg/kg bw/day
Consumer DNEL, long-term	inhalation	local	7 mg/m³

PNEC values

CAS No	Substance
Environmental compartment	Value
107-21-1	ethane-1,2-diol (ethylene glycol)
Freshwater	10 mg/l
Marine water	1 mg/l
Freshwater sediment	20,9 mg/kg
Micro-organisms in sewage treatment plants (STP)	199,5 mg/l
Soil	1,53 mg/kg

Additional advice on limit values

GESTIS - International Limit Values - Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA):
http://limitvalue.ifa.dguv.de
Country information (EU)
(http://www.dguv.de/ifa/fachinfos/occupational-exposure-limit-values/foreign-and-eu-limit-values/index.jsp)
Country information (GB) (http://www.hse.gov.uk/pubns/books/eh40.htm)
Occupational Exposure Limits of EU-memberstates - European Agency for Safety and Health at Work (OSHA)
(http://osha.europa.eu/en/topics/ds/oel/index.stm/members.stm)
Source of law: EH40 (GB) (http://www.hse.gov.uk)

Recommended monitoring procedures:
Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents (BS EN 14042):
Personal air monitoring

Room air monitoring

Exposure limits at intended use:
See under section 8.1 - Occupational exposure limit values.

DNEL-/PNEC-values:
There are no exposure scenarios attached in the Appendix of this Safety Data Sheet.

Risk management measures according to used control banding approach:
Control banding for chemicals according to the ILO CHEMICAL CONTROL TOOLKIT (ICCT): ICCT-Guidelines and Control Guidance Sheets (http://www.ilo.org/legacy/english/protection/safework/ctrl_banding/toolkit/main_guide.pdf)

Used model:
Consider appropriate model solutions according to good engineering practices on designing the working process, if available.

8.2. Exposure controls



Appropriate engineering controls

Substance/mixture related measures to prevent exposure during identified uses:
Technical measures to prevent exposure:
Design of appropriate work processes and engineering controls and the use of adequate materials (physical cut-off of man and machine, model solutions as certified working methods, working appliance according to the state of the art, optimization of process / spray robots, working appliance for prevention of skin contact, models of working times).

Organisational measures to prevent exposure:
Execution of collective protection measures at source and appropriate organisational measures (local exhaust ventilation, ventilation by technical means, general ventilation, measures on averting a danger at breakdowns / at emergencies / after accidents, first-aid-measures, manner related measures: operating instruction / instruction of employees, occupational medicine health precaution).

Structural measures to prevent exposure:
Execution of individual and personnel protection measures (personal protective equipment - PPE).

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Technical measures and the application of suitable work processes have priority over personal protection equipment.

References for design of technical equipment:
See under section 7.1 - Precautions for safe handling.

Summary of the risk management measures for exposure scenario:
Use only the following product amount per time unit:
No information available.
Minimum room-width and room-height for handling/application:
No information available.
Minimum room ventilation rate for handling/application (air changes per hour):
No information available.

Individual protection measures, such as personal protective equipment

Eye/face protection

If required according to hazard assessment:
Suitable eye protection:
Eye glasses with side protection (EN 166)
Recommended eye protection articles:
UVEX I-VO / UVEX I-3 / UVEX SUPER OTG
Or comparable articles from other companies.

Hand protection

Skin protection:
Preventive skin protection.:
Draw up skin protection programme.
Before starting work, apply water-resistant skincare preparations.
e.g. saniwip®, dualin® (PETER GREVEN PHYSIODERM)
Wash hands before breaks and after work.
e.g. ecosan®, topscrub® soft / topscrub® extra / topscrub® nature (PETER GREVEN PHYSIODERM)
After cleaning apply high-fat content skin care cream.
e.g. physioderm® creme, cura soft® / cUrea soft® (PETER GREVEN PHYSIODERM)
Apply skin care products after work.

If required according to hazard assessment:
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.
Decrease wearing protection gloves to an inevitable degree to avoid skin rash.
Technical and organizational protective actions have to be preferred.
Breakthrough times and swelling properties of the material must be taken into consideration.
Check leak tightness/impermeability prior to use.
Wear cotton undermitten if possible.
Change preventive gloves once by hour or use special skin-protective preparations for protective gloves carrier,
e.g. physioderm® proGlove (PETER GREVEN PHYSIODERM)
Take recovery periods for skin regeneration.
Do not wear gloves near rotary machines and tools.
Dispose preventive gloves after defect or expiry of wearing time. Replace when worn.
In the case of wanting to use the gloves again, clean them before taking off and air them well.

Wearing time with permanent contact:
Suitable gloves type:
Gloves with long cuffs
Recommended glove articles:
Suitable materials at long term, direct contact (Recommended: Preventive index 6, accordingly > 480 min. permeation time in accordance to EN 374):
Nitrile rubber / NBR (KCL-CAMATRIL VELOURS® - Art. No. 730) - Layer thickness: 0,4 mm
Or comparable articles from other companies.

Unsuitable material:
NR (natural rubber, natural latex)

Wearing time with occasional contact (splashes):
Suitable gloves type:
Disposable gloves
Recommended glove articles:
Suitable materials at short term contact or splash (Recommended: Preventive index 3, accordingly > 60 min. permeation time in accordance to EN 374):
Disposable gloves of special nitrile rubber / NBR (KCL-DERMATRIL® P - Art. No. 743) - Layer thickness: 0,2 mm
Or comparable articles from other companies.

The statements are based on self-tests, literary reference and information of glove manufacturers or have been derived from similar substances by analogy.
Source: CHEMIKALIEN-MANAGER - KCL software for hand protection.
It has to be noticed, that daily time of use of chemical protective gloves may be quite shorter in practice because of many factors of influence (e.g. thermal and mechanical stress as well as special conditions on the floor) than the permeation time determined in accordance to EN 374.
The respective permeation time doubles/halvens at about 1,5 times larger/lower layer thickness.
Declared permeation times according to EN 374 are not carried out under practical conditions. Therefore a maximum wearing time up to 50 % of breakthrough time is recommended.
They relate to the pure solvent as mean component.

Barrier creams are not substitutes for body protection.

Skin protection

If required according to hazard assessment:

Suitable protective clothing:
Overall, Natural fibres (e.g. cotton) (EN 340)

Chemical resistant safety shoes with conductible sole (EN ISO 20345)

Wash contaminated clothing prior to re-use.
Used working clothes should not be worn outside the work area.
Street clothing should be stored separately from work clothing.

Thermal hazards:
No thermal hazards during use of this product.

Respiratory protection

If required according to hazard assessment:
Respiratory protection necessary at:
aerosol or mist formation + exceeding exposure limit values +
high concentrations / prolonged exposure / insufficient ventilation / insufficient exhaust
Use only respiratory protection equipment with CE-symbol including four digit test number.
Filter types: A, B, E, K. Class 1: Maximum permitted contaminant concentration in inhaled air = 1000 mL/m3 (0.1 % by vol.); class 2: maximum permitted contaminant concentration in inhaled air = 5000 mL/m³ (0.5 % by vol.); class 3: maximum permitted contaminant concentration in inhaled air = 10000 mL/m³ (1.0 % by vol.)
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).
The use of filter equipment requires a minimum oxygen content of 17 Vol-% in the surrounding atmosphere and that the maximum permitted gas concentration - normally 0,5 Vol-% - is not exceeded.

Suitable respiratory protection apparatus:
Half-face mask or quarter facepiece: maximum use concentration for substances with exposure limits: P1 filter: up to a max. of 4 times the exposure limit. P2 filter: up to a max. of 10 times the exposure limit. P3 filter: up to a max. of 30 times the expo.

Recommended respiratory protection articles:
Half mask or quarter mask with combination filter A1P1/A2P2 for gases, vapors and particles. (EN 140, EN 14387)
Filtering half mask or quarter mask with combination filter FFA1 P1/FFA2P2 for gases, vapors and particles. (EN 405)
Gas filtrating Half-face mask FFA (EN 405)
Model 4251 (FFA1P1 - 1000 ml/m3) / 4255 (FFA2P2SL - 5000 ml/m3) (3M)
Half-face mask or Quarter-face mask with gas filter (EN 140, EN 14387)
Filter type 6051 (A1 - 1000 ml/m3) / 6055 (A2 - 5000 ml/m3) (3M)
Full-face mask with gas filter (EN 136, EN 14387)
Gas filter type: A, Indication colour: brown
Or comparable articles from other companies.

Environmental exposure controls

Environmental exposure controls:
Technical measures to prevent exposure:
Discharge exhaust air only with suitable seperators to atmosphere.
Organisational measures to prevent exposure:
Should not be released into the environment.
Structural measures to prevent exposure:

Use the following recovery and/or abatement technique for cleaning waste gases:
Exhaust air scrubber
Adsorption

Further information see under section 6.2 - Environmental precautions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	brown
Odour:	characteristic

Test method

pH-Value:		9,3 (50 g/l)	DIN 19268
Changes in the physical state			
Melting point:		< 0 °C	literature value
Initial boiling point and boiling range:		> 100 °C	literature value
Sublimation point:		not applicable	
Softening point:		not applicable	
Pour point:		not applicable	
Flash point:		not applicable	
Flammability			
Solid:		not applicable (Liquid)	
Gas:		not applicable (Liquid)	
Explosive properties			
No flash point up to 100 °C.			
Lower explosion limits:		not relevant	
Upper explosion limits:		not relevant	
Ignition temperature:		not relevant	
Auto-ignition temperature			
Solid:		Not pyrophoric.	
Gas:		Not pyrophoric.	
Decomposition temperature:		not relevant	
Oxidizing properties			
not relevant			
Vapour pressure: (at 20 °C)	Corresponds to the vapour pressure of water. < 23 hPa		literature value
Vapour pressure: (at 50 °C)	Corresponds to the vapour pressure of water. < 123 hPa		literature value
Density (at 20 °C):		1 g/cm³	DIN 51757
Bulk density:		not applicable (Liquid)	
Water solubility: (at 20 °C)		easily soluble	
Solubility in other solvents			
miscible with most organic solvents (Alcohols, aldehydes, Ketone)			
Partition coefficient:		not applicable (Mixtures)	
Viscosity / dynamic:		not determined	
Viscosity / kinematic: (at 40 °C)		<= 20,5 mm²/s	DIN 53015
Flow time: (at 23 °C)		24 s	3 DIN EN ISO 2431
Vapour density:		not determined	
Evaporation rate:		not determined	
Solvent separation test:	not applicable		
Solvent content:	not determined		

9.2. Other information

Solid content:	not determined

Odour threshold: No data available

Surface tension: No data available
Fat solubility (g/L): No data available
Calculated oxidation potential of the mixture (OP): not relevant

Substance group relevant properties:
Data relevant with regard to physical hazard classes (supplemental):
Explosives
not applicable
Flammable gases
Non-flammable. / not applicable (Liquid)
flammable aerosols
Non-flammable. / not applicable (Liquid)

Oxidising gases
Not oxidising. / not applicable (Liquid)
Gases under pressure
not applicable (Liquid)
Flammable liquids
Non-flammable.
flammable solids
Non-flammable. / not applicable (Liquid)
Self-reactive substances and mixtures
not applicable
Pyrophoric liquids
Not pyrophoric.
Pyrophoric solids
Not pyrophoric. / not applicable (Liquid)
self-heating substances and mixtures
not applicable
Substances or mixtures which, in contact with water, emit flammable gases
not applicable
Oxidising liquids
Not oxidising.
Oxidising solids
Not oxidising. / not applicable (Liquid)
Organic peroxides
not applicable
Corrosive to metals.
Not corrosive to metals.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Further information see under section 7.2 - Conditions for safe storage, including any incompatibilities.
Further information see under section 10.5 - Incompatible materials.

10.5. Incompatible materials

Violent reaction with:
Hazardous substances that release flammable gases when in contact with water
Further information see under section 7.1 - Precautions for safe handling.

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.
No known hazardous decomposition products.
Under fire conditions: See under section 5.2 - Special hazards arising from the substance or mixture.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.
The product has not been tested.

Information on likely routes of exposure /
Symptoms related to the physical, chemical and toxicological characteristics:
See under section 4.2 - Most important symptoms and effects, both acute and delayed.

Exposure route:
In case of ingestion:
Ingestion causes nausea, weakness and central nervous system effects.

In case of skin contact:
May cause skin irritation in susceptible persons.
Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin

inflammation).

In case of inhalation:
slightly irritant but not relevant for classification.

In case of eye contact:
slightly irritant but not relevant for classification.
Conjunctival redness.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:
Not relevant

Interactive effects:
Not relevant

Absence of specific data:
No data is available on the product itself. Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components.
However, some datas are not complete regarding particular main components. Nevertheless according to the experience of the manufacturer there are no other hazards expected then those which are already mentioned on the label.

Mixture versus substance information:
Not relevant

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-21-1	ethane-1,2-diol (ethylene glycol)				
	oral	LD50 > 1600 mg/kg	Practical experience/human evidence	Supplier	
	dermal	LD50 > 3500 mg/kg	Mouse	Supplier / ECHA	
	inhalation (4 h) aerosol	LC50 > 2,5 mg/l	Rat	Supplier / ECHA	[6h]

Irritation and corrosivity

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

Sensitising effects

Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:

Acute (short-term) fish toxicity:
There are no data available on the preparation/mixture itself. The product has not been tested.

Acute (short-term) toxicity to crustacea:
There are no data available on the preparation/mixture itself. The product has not been tested.

Acute (short-term) toxicity to aquatic algae and cyanobacteria:
There are no data available on the preparation/mixture itself. The product has not been tested.

Chronic (long-term) toxicity to crustacea:
There are no data available on the preparation/mixture itself. The product has not been tested.

Chronic (long-term) fish toxicity:
There are no data available on the preparation/mixture itself. The product has not been tested.

Toxicity to other aquatic plants/organisms:
No data available (Substances/Ingredient)

Terrestrial toxicity:
Acute and subchronic bird toxicity:
No data available (Substances/Ingredient)
Bird reproduction toxicity:
No data available (Substances/Ingredient)
Acute earthworm toxicity:
No data available (Substances/Ingredient)
Chronical earthworm toxicity (reproduction):
No data available (Substances/Ingredient)
Useful insect toxicity:
No data available (Substances/Ingredient)
Acute plant toxicity:
No data available (Substances/Ingredient)
Chronic plant toxicity:
No data available (Substances/Ingredient)
Toxicity to soil macroorganisms except of arthropods:
No data available (Substances/Ingredient)
Effects on soil microorganisms:
No data available (Substances/Ingredient)

Behaviour in waste water treatment plants:
No data available
Observe local regulations concerning effluent treatment.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] | [d]	Species	Source	Method
107-21-1	ethane-1,2-diol (ethylene glycol)					
	Acute fish toxicity	LC50 72860 mg/l	96 h	Pimephales promelas	Supplier / ECHA	EPA 600/4-90/027
	Acute algae toxicity	ErC50 6500 - 13000 mg/l	96 h	Pseudokirchneriella subcapitata	Supplier / ECHA	EPA 600/9-78-018
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h	Daphnia magna	Supplier / ECHA	OECD 202
	Fish toxicity	NOEC 15380 mg/l	7 d	Pimephales promelas	Supplier / ECHA	[weight]
	Crustacea toxicity	NOEC 8590 mg/l	7 d	Ceriodaphnia dubia	Supplier / ECHA	EPA 600/4-89/001
	Acute bacteria toxicity	(> 1995 mg/l)	0,5 h	Activated sludge	Supplier / ECHA	ISO 8192

12.2. Persistence and degradability

Abiotic degradation:
Physicochemical elimination:
Oxidation:
not applicable (Mixtures)
No data available (Substances/Ingredient)
Hydrolysis:
not applicable (Mixtures)
No data available (Substances/Ingredient)
Photochemical elimination:
Photolysis:
not applicable (Mixtures)
No data available (Substances/Ingredient)
Ozonolysis:
not applicable (Mixtures)
No data available (Substances/Ingredient)

Biodegradation:
not applicable (Mixtures)

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
107-21-1	ethane-1,2-diol (ethylene glycol)			
	OECD 301 A (new version)	90-100 %	10	Supplier / ECHA
	readily biodegradable			

12.3. Bioaccumulative potential

not applicable (Mixtures)

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethane-1,2-diol (ethylene glycol)	-1,36

12.4. Mobility in soil

Surface tension:
See under section 9.1 - Information on basic physical and chemical properties.

Distribution:
Water-air (volatility rate, Henry-constant):
not applicable (Mixtures)
No data available (Substances/Ingredient)
Soil-Water (Adsorption coefficient):
not applicable (Mixtures)
No data available (Substances/Ingredient)
Soil-Air (volatility rate):
not applicable (Mixtures)
No data available (Substances/Ingredient)

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

Ozone depletion potential (ODP):
No data available (Substances/Ingredient)
Photochemical ozone creation potential (POCP):
No data available (Substances/Ingredient)
Global warming potential (GWP):
No data available (Substances/Ingredient)
Endocrine disrupting potential:
No data available

AOX: The product contains organic halogens.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste treatment options:
Transfer to an emulsion fission reactor or an emulsion evaporation system, observing official regulations.

Dispose of waste according to applicable legislation.
Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Properties of waste which render it hazardous:
none

Consult the appropriate local waste disposal expert about waste disposal.
For recycling, contact recycling exchanges.
May not be disposed or deposited together with domestic garbage.
Do not mix with other wastes.
Do not flush into surface water or sanitary sewer system.
Do not dispose of waste into sewer.
Before discharge in public drains (e.g. residues of washing- and rinsing liquids) please observe the relevant regulations. In case of further questions please contact your waste- or environmental representative or the responsible authority.
Clean IBCs or drums at approved facility only.
The waste producer is resposible for correct coding and designation of his wastes.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

List of proposed waste codes/waste designations in accordance with EWC:

List of Wastes Code - residues/unused products

120115 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS; wastes from shaping and physical and mechanical surface treatment of metals and plastics; machining sludges other than those mentioned in 12 01 14

List of Wastes Code - used product

120115 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS; wastes from shaping and physical and mechanical surface treatment of metals and plastics; machining sludges other than those mentioned in 12 01 14

List of Wastes Code - contaminated packaging

150106 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); mixed packaging

Contaminated packaging

Other disposal recommendations:
Contaminated packages must be completely emptied and can be re-used following proper cleaning.
Cleaning by recycling company.
Recommended cleansing agent:
Clean with detergents. Avoid solvent cleaners.

Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.
Packing which cannot be properly cleaned must be disposed of.
As well uncleaned (empty) containers remain contaminated by product residues and may be hazardous by vapours. They have to be disposed by specialists or have to be supplied to a licensed reconditioning.
The conditions of the regional reconditioning companies have to be observed.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

Not classified as dangerous in the meaning of transport regulations.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not classified for this transport way.

Marine transport (IMDG)

Other applicable information (marine transport)

Not classified as dangerous in the meaning of transport regulations.

Air transport (ICAO-TI/IATA-DGR)

Other applicable information (air transport)

Not classified as dangerous in the meaning of transport regulations.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

not relevant

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

not relevant

Other applicable information

not relevant

SECTION 15: Regulatory information

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

EU regulatory information

2010/75/EU (VOC): 11 % (107 g/l)

Additional information

Authorisations and/or restrictions on use:
Authorisations:
Authorisation of Chemicals (REACH) as regards Annex XIV:

not relevant
Restrictions on use:
Restriction of chemicals (REACH) as regards annex XVII:
not relevant

Other regulations (EU):
Regulation (EC) No. 1005/2009 - Substances that deplete the ozone layer:
not relevant
Regulation (EC) No. 648/2004 and No 907/2006 - Detergents:
not relevant
Regulation (EC) No. 649/2012 - Export and import of dangerous chemicals:
not relevant
Regulation (EU) 2019/1021 - Persistent organic pollutants:
not relevant
Regulation (EC) No. 428/2009 and No. 388/2012 and No. 1382/2014 - Control of exports, or transfer, brokering and transit of dual-use goods (Dual-Use Regulation):
not relevant
Regulation (EC) No. 273/2004 - Drug precursors:
not relevant
Regulation (EC) No. 111/2005 - Definition of rules for the monitoring of trade in drug precursors between the Union and third countries:
not relevant
Directive 2012/18/EC - Control of major accident hazards involving dangerous substances (Seveso III):
not relevant
Directive 2004/42/EC - Use of organic solvents in certain paints and lacquers:
not relevant
Directive 2010/75/EU - Industrial Emissions Directive (Directive IE) - succession to Directive 1999/13/EC - Limitation of emissions of volatile organic compounds (VOC-Directive):
When using this substance / mixture it has to be checked whether the activities are subject to the the requirements of IE-RL, Chapter V (installations and activities with the use of organic solvents - VOC).
Aerosol directive (75/324/EEC):
not relevant
Biocide directive (98/8/EC):
not relevant
Regulation (EU) No. 528/2012 on biocides
In accordance with Regulation (EU) No. 528/2012 on biocides
This product is a with biocidal products treated article.

Observe in addition any national regulations!

EC-Chemical inventories: All ingredients are listed in EINECS / ELINCS or excepted from listing.

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Additional information

Other regulations, restrictions and prohibition regulations:

European product inventories (Registration status on mixtures):
Kemikalieinspektionen / Produktregistret / Swedish Chemicals Inspectorate - KemI (http://www.kemi.se):
This product was not registered.
Schweizerische Eidgenossenschaft - Bundesamt für Gesundheit - BAG (http://www.bag.admin.ch) / Anmeldestelle

Chemikalien (http://www.cheminfo.ch) / Informationssystem für gefährliche und umweltrelevante Stoffe - IGS (http://igs.naz.ch/index.html):
This product was not registered.

International chemical inventories (Registration status on substances): No data available

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:
ethane-1,2-diol (ethylene glycol)

SECTION 16: Other information

Changes

This version replaces all former issues.

Changes made in this revision see section: 2, 4, 11, 12, 15, 16.

Abbreviations and acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate.
CAS: Chemical Abstracts Service.
CEN: Comité Européen de Normalisation (European Committee for Standardisation).
CLP: Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008.
C&L: Classification & Labeling.
DNEL: Derived No-Effect Level.
EAK: European Waste Catalogue (replaced by LoW – see below).
EC50: Effective concentration, 50 percent.
ECHA: European Chemicals Agency.
EC: European community.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EN: European standard.
EWC: European Economic Community.
EEA: European Economic Area (EU + Iceland, Liechtenstein and Norway).
EU: European Union.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
HSPA: Hydrocarbon Solvents Producers Association.
IATA-DGR: International Air Transport Association Dangerous Goods Regulations.
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).
IC50 / ErC50: Inhibitory concentration, 50 percent.
ICAO-TI: International Cicil Aviation Organization Technical Instruction.
IMDG: International Maritime Dangerous Goods.
ISO: A standard of International Standards Organisation.
IUPAC: International Union for Pure and Applied Chemistry.
LC50: Lethal concentration, 50 percent.
LD50: Lethal Dose, 50 percent.
log Kow (Pow): octanol-water partition coefficient.
LoW: List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm).
MARPOL: Maritime Polluntion Convention (Convention for the Prevention of Pollution from Ships).
OC: Operational Conditions.
OECD: Organisation for Economic Co-operation and Development.
OSHA: Occupational Safety and Health Agency.
PBT: Persistent, bioaccumulabe and toxic.
PEC: Predicted Effect Concentration.
PNEC: Predicted No-Effect Concentration.
PPE: Personal Protection Equipment.
(Q)SAR: Quantitative-Structure-Activity-Relationship.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals; Regulation (EC) No 1907/2006.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
RMM: Risk Management Measure.
STEL: Short time exposure limit.
SVHC: Substances of Very High Concern.
STOT - RE: Specific Target Organ Toxicity - Repeated Exposure.
STOT - SE: Specific Target Organ Toxicity - Single Exposure.
TWA: Time Weighted Average.

UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials.
vPvB: Very persistent and very bioaccumulable.
WoE: Weight of Evidence.

For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.
EUH208	Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.
EUH210	Safety data sheet available on request.

Further Information

Full text of all R-, H-, EUH-phrases which are referred to in section 2 and 3 of this safety data sheet - see previous list.
These (this) R-, H-, EUH-phrases/R-, H-, EUH-phrase apply/applies to the substance(s) of content, however, it does not necessarily show the classification of the product.

Key literature references and sources for data:
The classification corresponds to current EC-lists, but is completed by statements of technical literature and company data.

Other public accessible sources:
Regulation (EC) No. 1907/2006 (REACH) in the valid version in each case
Regulation (EC) No. 1272/2008 (CLP) in the valid version in each case

Further information and practical guides on the internet:
European Chemicals Agency - ECHA (http://echa.europa.eu)
ECHA - Information on Chemicals (http://echa.europa.eu/information-on-chemicals)
ECHA - Candidate List of Substances of Very High Concern for Authorisation (http://echa.europa.eu/de/candidate-list-table)
ECHA - List of restrictions table (http://echa.europa.eu/de/addressing-chemicals-of-concern/restrictions/list-of-restrictions/list-of-restrictions-table)
ECHA - Authorisation List (http://echa.europa.eu/hr/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list)
ECHA - C&L Inventory (http://echa.europa.eu/en/web/guest/regulations/clp/cl-inventory)
eChemPortal (http://www.echemportal.org)
The access to European Union law - EUR-Lex (http://eur-lex.europa.eu)
Health and Safety Executive (http://www.hse.gov.uk) / Control of Substances Hazardous to Health Regulations - COSHH (http://www.coshh-essentials.org.uk/Home.asp)
Pollution Prevention and Control Act and Pollution Prevention and Control Regulations

Recommended restriction of application:
See under section 1.2 - Uses advised against.
Use this product only for intended purpose in accordance with our product informations.
Please refer to our internet website for more information (http://www.acmos.com).

Training advice:
Yearly briefing and instruction of employees by means of operating instructions according to article 8 of EC-directive 98/24/EC.

Inquiry office: Laboratory (Division: Occupational- /Product security)
Contact person: Mr. Dryhaus (Telephone: +49-421-5189-0, Telefax: +49-421-5189-871)
Office hours: Mo - Th from 7.30 - 16.15 h and Fr from 7.30 - 13.30 h. Out of office hours no call diversion.

Disclaimer:
The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The information contained herein are, to our knowledge at the time of their creation to be correct and been taken from sources deemed to be reliable. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release The receiver of our product is singularly responsible for adhering to existing laws and regulations. All descriptions are approximate values, they are not specified for construction of specifications. This safety data sheet does not represent any operating instruction according to national chemical regulations. It may be used for creation, but must not replace it. The employer is not relieved from his

duties. All technical information to occupational protection are directed predominately to experts first (safety engineers, occupational medicines).