

SAFETY DATA SHEETS

This SDS packet was issued with item:

071312677

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

071312685

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

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

1.1 Product identifier

Trade name

Freeze protected mixing liquid

Begosol (REF: 51090 - 51091)

BegoForm Liquid (REF: 52786)

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

Relevant identified uses of the substance or mixture

Manufacturing of dental prosthesis in a dental laboratory

1.3 Details of the supplier of the safety data sheet

Address

BEGO Bremer Goldschlägerei

Wilh. Herbst GmbH & Co. KG

Wilhelm-Herbst-Str. 1

28359 Bremen

Telephone no. +49/ 421/ 2028 – 0

Fax no. +49/ 421/ 2028 – 115

Information provided by / telephone

Research & Development Department - Materials, alloys and ceramics; +49/ 421/ 2028 – 130 (Chief Development Officer alloys)

Advice on Safety Data Sheet

msds@bego.com

1.4 Emergency telephone number

For medical advice (in German and English):

+49/ 551/ 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification information

This product does not meet the classification and labelling criteria given in the Dangerous Preparations Directive (1999/45/EC; DPD)

2.2 Label elements

Supplemental label elements

"Safety data sheet available for professional user on request".

2.3 Other hazards

PBT assessment

The components of this product are not considered to be a PBT.

vPvB assessment

The components of this product are not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable. The product is not a substance.

3.2 Mixtures

Chemical characterization

Mixture (preparation)

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

Hazardous ingredients

No	Substance name	Additional information	
	CAS / EC / Index / REACH no	Classification 67/548/EEC	Concentration
			%-b.w.
1	ethane-1,2-diol		
	107-21-1 203-473-3 603-027-00-1 -	Xn; R22	> 5.00 - < 10.00 %-b.w.
2	silicon dioxide, chemically prepared		
	7631-86-9 231-545-4 - 01-2119379499-16	-	> 50.00 - < 70.00 %-b.w.

Full Text for all R-phrases: pls. see section 16

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.

After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area.

After skin contact

Wash off immediately with soap and water.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion

Do not induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Let plenty of water be drunk in small gulps. Summon a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

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

Foam; Water spray jet; Carbon dioxide; extinguishing powder

Unsuitable extinguishing media

Full water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon monoxide and carbon dioxide

5.3 Advice for firefighters

Use self-contained breathing apparatus. Product itself does not burn. Adapt extinguisher and fire-fighting measures to fire in the environment.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Collect contaminated water / firefighting water separately. Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

No special measures necessary if stored and handled as prescribed. Provide good ventilation of working area (local exhaust ventilation, if necessary).

General protective and hygiene measures

Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Keep away from foodstuffs and beverages.

Advice on protection against fire and explosion

No special measures necessary.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed and dry in a cool, well-ventilated place.

Recommended storage temperature

Value 20 - 30 °C

Requirements for storage rooms and vessels

Keep only in the original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Advice on storage assembly

None known

7.3 Specific end use(s)

No data available.

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
	List of approved workplace exposure limits (WELs) / EH40		
	Silica, amorphous		
	inhalable dust		
	TWA	6	mg/m ³
	List of approved workplace exposure limits (WELs) / EH40		
	Silica, amorphous		
	respirable dust		
	TWA	2.4	mg/m ³
2	ethane-1,2-diol	107-21-1	203-473-3
	2000/39/EWG		
	Ethylene glycol		
	STEL	104	mg/m ³ 40 ml/m ³
	TWA	52	mg/m ³ 20 ml/m ³
	Skin resorption / sensibilisation	Skin	
	List of approved workplace exposure limits (WELs) / EH40		
	Ethane 1,2-diol		
	particulate		
	TWA	10	mg/m ³
	Skin resorption / sensibilisation	Sk	
	List of approved workplace exposure limits (WELs) / EH40		
	Ethane 1,2-diol		
	vapour		
	STEL	104	mg/m ³
	TWA	52	mg/m ³
	Skin resorption / sensibilisation	Sk	

DNEL und PNEC values**DNEL values (worker)**

No	Substance name	CAS / EC no
	Route of exposure	Value
	Exposure time	
	Effect	
1	silicon dioxide, chemically prepared	7631-86-9 231-545-4
	inhalational	4 mg/m ³
	Long term (chronic)	
	systemic	

8.2 Exposure controls**Appropriate engineering controls**

No data available.

Personal protective equipment**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn.

Eye / face protection

Safety glasses (EN 166)

Hand protection

In case of intensive contact, wear protective gloves (EN 374). Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other

Normal chemical work clothing.

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour			
liquid			
opaline; milky			
Odour			
sweetish			
Odour threshold			
No data available			
pH value			
Value	8.0	-	10.5
Boiling point / boiling range			
Value	appr.	100	°C
Melting point / melting range			
Value	appr.	-15	°C
Decomposition point / decomposition range			
No data available			
Flash point			
not determined			
Auto-ignition temperature			
No data available			
Oxidising properties			
No data available			
Explosive properties			
No data available			
Flammability (solid, gas)			
No data available			
Lower flammability or explosive limits			
No data available			
Upper flammability or explosive limits			
No data available			
Vapour pressure			
Value	appr.	20	hPa
Reference temperature		20	°C
Vapour density			
No data available			
Evaporation rate			
No data available			
Relative density			
No data available			
Density			
Value	1.05	-	1.50 g/cm ³
Reference temperature		20	°C

Trade name: Freeze protected mixing liquid**Current version :** 1.0.2, issued: 03.07.2012**Replaced version:** 1.0.2, issued: 08.05.2012**Region:** GB**Solubility in water**

No data available

Solubility(ies)

No data available

Partition coefficient: n-octanol/water

No data available

Viscosity

Value	2	-	50	mPa*s
Reference temperature			20	°C
Type	dynamic			

9.2 Other information**Other information**

No data available.

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

No data available.

10.2 Chemical stability

No data available.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

None, if handled according to order.

10.5 Incompatible materials

strong oxidizing agents; Rubber; Electrolytes; cationic agents

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute oral toxicity**

LD50	>	10000	mg/kg
Species	rat		
Reference substance	silicon dioxide		
LD50		4700	mg/kg
Species	rat		
Reference substance	Ethane-1,2-diol		
LDLo		786	mg/kg
Species	Human		
Reference substance	Ethane-1,2-diol		

Acute dermal toxicity

LD50	>	5000	mg/m³
Species	rabbit		
Reference substance	silicon dioxide		
LD50	>	9530	mg/m³
Species	rabbit		
Reference substance	Ethane-1,2-diol		

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

Acute inhalational toxicity			
LC50	>	2000	mg/m³
Duration of exposure		4	h
Species	rat		
Reference substance	silicon dioxide		
Skin corrosion/irritation			
No data available			
Serious eye damage/irritation			
No data available			
Respiratory or skin sensitisation			
No data available			
Germ cell mutagenicity			
No data available			
Reproduction toxicity			
No data available			
Carcinogenicity			
No data available			
STOT-single exposure			
No data available			
STOT-repeated exposure			
No data available			
Aspiration hazard			
No data available			

SECTION 12: Ecological information

12.1 Toxicity

Fish toxicity			
LC50	>	10000	mg/l
Duration of exposure		96	h
Species	Brachydanio rerio		
Reference substance	silicon dioxide		
Method	OECD 203		
LC50	>	10000	mg/l
Duration of exposure		96	h
Species	Oncorhynchus mykiss		
Reference substance	Ethane-1,2-diol		
Method	OECD 203		

Daphnia toxicity			
EC50	>	10000	mg/l
Duration of exposure		24	h
Species	Daphnia magna		
Reference substance	silicon dioxide		
Method	OECD 202		
EC50	>	10000	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Reference substance	Ethane-1,2-diol		
Method	OECD 202		

Trade name: Freeze protected mixing liquid**Current version :** 1.0.2, issued: 03.07.2012**Replaced version:** 1.0.2, issued: 08.05.2012**Region:** GB

Algae toxicity		
EC50	>	10000 mg/l
Duration of exposure		72 h
Species	Scenedesmus subspicatus	
Reference substance	silicon dioxide	
Method	OECD 201	
IC50	>	10000 mg/l
Duration of exposure		72 h
Species	Scenedesmus quadricauda	
Reference substance	Ethane-1,2-diol	
Method	OECD 201	

Bacteria toxicity		
No data available		

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Other adverse effects

Other adverse effects
No ecological effect is to be expected, if used and handled as intended.

12.7 Other information

Other information
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

Trade name: Freeze protected mixing liquid

Current version : 1.0.2, issued: 03.07.2012

Replaced version: 1.0.2, issued: 08.05.2012

Region: GB

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

No data available.

14.6 Special precautions for user

No data available.

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

Not relevant

SECTION 15: Regulatory information

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

EU regulations

Restriction of occupation

Adhere to the national sanitary and occupational safety regulations when using this product.

Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

Remarks

Annex I, part 1 + 2: not mentioned. With regard to possibly appropriate decomposition products see Chapter 10.

15.2 Chemical safety assessment

No data available.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

EC Directive 67/548/EC resp. 99/45/EC as amended in each case.

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EC

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the R-, H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

R22

Harmful if swallowed.

Department issuing safety data sheet

UMCO Umwelt Consult GmbH - D-21107 Hamburg, Georg-Wilhelm-Strasse 183, Tel.: +49(40)79 02 36 300, Fax: +49(40)79 02 36 357, e-mail: umco@umco.de

This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

Trade name: Freeze protected mixing liquid (REF 51090)

Current version : 2.0.4, issued: 19.10.2015

Replaced version: 2.0.3, issued: 11.02.2015

Region: GB

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

1.1 Product identifier

Trade name

Freeze protected mixing liquid (REF 51090)

Begosol (REF 51090 - 51091)

BegoForm Liquid (REF 52786)

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

Relevant identified uses of the substance or mixture

Manufacturing of dental prosthesis in a dental laboratory

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet

Address

BEGO Bremer Goldschlägerei

Wilh. Herbst GmbH & Co. KG

Wilhelm-Herbst-Str. 1

28359 Bremen

Telephone no. +49/ 421/ 2028 – 0

Fax no. +49/ 421/ 2028 – 115

e-mail msds@bego.com

Information provided by / telephone

Research & Development Department - Materials, alloys and ceramics; +49/ 421/ 2028 – 130 (Chief Development Officer alloys)

Advice on Safety Data Sheet

msds@bego.com

1.4 Emergency telephone number

For medical advice (in German and English):

+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification information

This product does not meet the classification criteria given in the Regulation (EC) No 1272/2008 (CLP).

This product does not meet the labelling criteria given in the Directives 67/548/EWG respectively 1999/45/EC (DPD)

2.2 Label elements

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

Hazard pictograms

-

Signal word

-

Hazard statements

-

Hazard statements (EU)

EUH210 Safety data sheet available on request.

Labelling information

The labelling (EU hazard statements) meets the criteria of annex II of Directive (EC) Nr. 1272/2008 (CLP).

Trade name: Freeze protected mixing liquid (REF 51090)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB**2.3 Other hazards**

PBT assessment

The components of this product are not considered to be a PBT.

vPvB assessment

The components of this product are not considered to be a vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable. The product is not a substance.

3.2 Mixtures**Hazardous ingredients**

No	Substance name	Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration
			%
1	silicon dioxide, chemically prepared		
	7631-86-9 231-545-4 - 01-2119379499-16	-	> 50.00 - < 70.00 %-b.w.
2	ethanediol		
	107-21-1 203-473-3 603-027-00-1 01-2119456816-28	Acute Tox. 4; H302 STOT RE 2; H373o	> 5.00 - < 10.00 %-b.w.

Full Text for all H-phrases and EUH-phrases: pls. see section 16

No	Route, target organ, concrete effect
2	H373 oral; kidneys; -

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.

After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area.

After skin contact

Wash off immediately with soap and water.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion

Do not induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Let plenty of water be drunk in small gulps. Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Trade name: Freeze protected mixing liquid (REF 51090)

Current version : 2.0.4, issued: 19.10.2015

Replaced version: 2.0.3, issued: 11.02.2015

Region: GB

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam; Water spray jet; Carbon dioxide; Extinguishing powder

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon monoxide and carbon dioxide

5.3 Advice for firefighters

Use self-contained breathing apparatus. Product itself does not burn. Adapt extinguisher and fire-fighting measures to fire in the environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Collect contaminated water / firefighting water separately. Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

No special measures necessary if stored and handled as prescribed. Provide good ventilation of working area (local exhaust ventilation, if necessary).

General protective and hygiene measures

Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Keep away from foodstuffs and beverages.

Advice on protection against fire and explosion

No special measures necessary.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed and dry in a cool, well-ventilated place.

Recommended storage temperature

Value 20 - 30 °C

Requirements for storage rooms and vessels

Keep only in the original container. Containers which are opened must be carefully closed and kept upright to prevent leakage.

Advice on storage assembly

None known

7.3 Specific end use(s)

No data available.

Trade name: Freeze protected mixing liquid (REF 51090)

Current version : 2.0.4, issued: 19.10.2015

Replaced version: 2.0.3, issued: 11.02.2015

Region: GB

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
List of approved workplace exposure limits (WELs) / EH40			
	Silica, amorphous		
	inhalable dust		
	TWA	6	mg/m ³
List of approved workplace exposure limits (WELs) / EH40			
	Silica, amorphous		
	respirable dust		
	TWA	2.4	mg/m ³
2	ethanediol	107-21-1	203-473-3
2000/39/EWG			
	Ethylene glycol		
	STEL	104	mg/m ³ 40 ml/m ³
	TWA	52	mg/m ³ 20 ml/m ³
	Skin resorption / sensibilisation	Skin	
List of approved workplace exposure limits (WELs) / EH40			
	Ethane 1,2-diol		
	particulate		
	TWA	10	mg/m ³
	Skin resorption / sensibilisation	Sk	
List of approved workplace exposure limits (WELs) / EH40			
	Ethane 1,2-diol		
	vapour		
	STEL	104	mg/m ³
	TWA	52	mg/m ³
	Skin resorption / sensibilisation	Sk	

DNEL and PNEC values**DNEL values (worker)**

No	Substance name	CAS / EC no
	Route of exposure Exposure time Effect	Value
1	silicon dioxide, chemically prepared	7631-86-9 231-545-4
	inhalative Long term (chronic) systemic	4 mg/m ³
2	ethanediol	107-21-1 203-473-3
	dermal Long term (chronic) systemic	106 mg/kg/day
	inhalative Long term (chronic) local	35 mg/m ³

DNEL value (consumer)

No	Substance name	CAS / EC no
	Route of exposure Exposure time Effect	Value
1	ethanediol	107-21-1 203-473-3
	dermal Long term (chronic) systemic	53 mg/kg/day
	inhalative Long term (chronic) local	7 mg/m ³

Trade name: Freeze protected mixing liquid (REF 51090)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB**PNEC values**

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	ethanediol		107-21-1 203-473-3	
	water	fresh water	10	mg/l
	water	marine water	1	mg/l
	water	Aqua intermittent	10	mg/l
	water	fresh water sediment	37	mg/kg dry weight
	water	marine water sediment	3.7	mg/kg dry weight
	soil	-	1.53	mg/kg
	sewage treatment plant	-	199.5	mg/l

8.2 Exposure controls**Appropriate engineering controls**

No data available.

Personal protective equipment**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn.

Eye / face protection

Safety glasses (EN 166)

Hand protection

In case of intensive contact, wear protective gloves (EN 374). Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other

Normal chemical work clothing.

Environmental exposure controls

No data available.

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

Form/Colour			
liquid			
opaline; milky			
Odour			
sweetish			
Odour threshold			
No data available			
pH value			
Value	8.0	-	10.5
Boiling point / boiling range			
Value	appr.	100	°C
Melting point / melting range			
Value	appr.	-15	°C
Decomposition point / decomposition range			
No data available			
Flash point			
not determined			

Trade name: Freeze protected mixing liquid (REF 51090)

Current version : 2.0.4, issued: 19.10.2015

Replaced version: 2.0.3, issued: 11.02.2015

Region: GB

Auto-ignition temperature			
No data available			
Oxidising properties			
No data available			
Explosive properties			
No data available			
Flammability (solid, gas)			
No data available			
Lower flammability or explosive limits			
No data available			
Upper flammability or explosive limits			
No data available			
Vapour pressure			
Value	appr.	20	hPa
Reference temperature		20	°C
Vapour density			
No data available			
Evaporation rate			
No data available			
Relative density			
No data available			
Density			
Value	1.05	- 1.50	g/cm ³
Reference temperature		20	°C
Solubility in water			
No data available			
Solubility(ies)			
No data available			
Partition coefficient: n-octanol/water			
No data available			
Viscosity			
Value	2	- 50	mPa*s
Reference temperature		20	°C
Type	dynamic		

9.2 Other information

Other information
No data available.

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

Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

None, if handled according to order.

10.4 Conditions to avoid

None, if handled according to intended use.

Trade name: Freeze protected mixing liquid (REF 51090)

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10.5 Incompatible materials

strong oxidizing agents; Rubber; Electrolytes; cationic agents

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
LD50	>	5000	mg/kg bodyweight
Species	rat		
Method	OECD 401		
Source	ECHA		
2	ethanediol	107-21-1	203-473-3
LD50	>	5000	mg/kg bodyweight
Species	rat		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are met.		

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
LD50	>	2000	mg/kg bodyweight
Species	rabbit		
Source	ECHA		

Acute inhalational toxicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
LC50	>	0.14	mg/l
Duration of exposure	4		h
State of aggregation	Dust		
Species	rat		
Method	OECD 403		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	non-irritant		
2	ethanediol	107-21-1	203-473-3
Duration of exposure	20		h
Species	rabbit		
Source	ECHA		
Evaluation	non-irritant		

Trade name: Freeze protected mixing liquid (REF 51090)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB

Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Species		rabbit	
Method		OECD 405	
Source		ECHA	
Evaluation		non-irritant	
2	ethanediol	107-21-1	203-473-3
Duration of exposure		24	h
Species		rabbit	
Source		ECHA	
Evaluation		non-irritant	
Respiratory or skin sensitisation			
No	Substance name	CAS no.	EC no.
1	ethanediol	107-21-1	203-473-3
Route of exposure		Skin	
Species		Human	
Source		ECHA	
Evaluation		non-sensitizing	
Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	ethanediol	107-21-1	203-473-3
Type of examination		Bacterial Reverse Mutation Test	
Species		Salmonella typhimurium	
Method		OECD 471	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Reproduction toxicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Species		rat	
Method		OECD 414	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Carcinogenicity			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Species		rat	
Method		OECD 453	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

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STOT-single exposure			
No data available			
STOT-repeated exposure			
No	Substance name	CAS no.	EC no.
1	silicon dioxide, chemically prepared	7631-86-9	231-545-4
Route of exposure		oral	
Species		rat	
Method		OECD 408	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Route of exposure		inhalational	
Species		rat	
Method		OECD 413	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	ethanediol	107-21-1	203-473-3
Route of exposure		oral	
NOAEL		150	mg/kg bw/d
Duration of exposure		12	months
Species		rat	
Target organ		kidneys	
Method		OECD 452	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are met.	
Aspiration hazard			
No data available			

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)				
No	Substance name	CAS no.	EC no.	
1	ethanediol	107-21-1	203-473-3	
LC50		>	50000	mg/l
Duration of exposure			96	h
Species	Pimephales promelas			
Source	ECHA			
Toxicity to fish (chronic)				
No data available				
Toxicity to Daphnia (acute)				
No	Substance name	CAS no.	EC no.	
1	ethanediol	107-21-1	203-473-3	
EC50		>	100	mg/l
Duration of exposure			48	h
Species	Daphnia magna			
Method	OECD 202			
Source	ECHA			

Trade name: Freeze protected mixing liquid (REF 51090)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB**Toxicity to Daphnia (chronic)**

No data available

Toxicity to algae (acute)

No data available

Toxicity to algae (chronic)

No data available

Bacteria toxicity

No data available

12.2 Persistence and degradability**Biodegradability**

No	Substance name	CAS no.	EC no.
1	ethanediol	107-21-1	203-473-3
Type	DOC decrease		
Value	90	- 100	%
Duration		10	day(s)
Method	OECD 301 A		
Source	ECHA		
Evaluation	readily degradable		

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment**Results of PBT and vPvB assessment**

PBT assessment	The components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Other adverse effects**Other adverse effects**

No ecological effect is to be expected, if used and handled as intended.

12.7 Other information**Other information**

Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

Trade name: Freeze protected mixing liquid (REF 51090)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB**SECTION 14: Transport information****14.1 Transport ADR/RID/ADN**

The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

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

Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I.

Other regulations

Adhere to the national sanitary and occupational safety regulations when using this product.

15.2 Chemical safety assessment

No data available.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

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Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H302

Harmful if swallowed.

H373o

May cause damage to organs through prolonged or repeated exposure if swallowed.

Department issuing safety data sheet

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This information is based on our present state of knowledge and experience.

The security data sheet describes products with a view to the security requirements.

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