

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

071312685

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

071312677

**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	<b>ethane-1,2-diol</b>		
	107-21-1 203-473-3 603-027-00-1 -	Xn; R22	> 5.00 - < 10.00 %-b.w.
2	<b>silicon dioxide, chemically prepared</b>		
	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
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Silica, amorphous		
	inhalable dust		
	TWA	6	mg/m <sup>3</sup>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Silica, amorphous		
	respirable dust		
	TWA	2.4	mg/m <sup>3</sup>
2	ethane-1,2-diol	107-21-1	203-473-3
	<b>2000/39/EWG</b>		
	Ethylene glycol		
	STEL	104	mg/m <sup>3</sup> 40 ml/m <sup>3</sup>
	TWA	52	mg/m <sup>3</sup> 20 ml/m <sup>3</sup>
	Skin resorption / sensibilisation	Skin	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Ethane 1,2-diol		
	particulate		
	TWA	10	mg/m <sup>3</sup>
	Skin resorption / sensibilisation	Sk	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Ethane 1,2-diol		
	vapour		
	STEL	104	mg/m <sup>3</sup>
	TWA	52	mg/m <sup>3</sup>
	Skin resorption / sensibilisation	Sk	

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

No	Substance name	CAS / EC no
	<b>Route of exposure</b>	<b>Value</b>
	<b>Exposure time</b>	
	<b>Effect</b>	
1	silicon dioxide, chemically prepared	7631-86-9 231-545-4
	inhalational	4 mg/m <sup>3</sup>
	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

<b>Form/Colour</b>			
liquid			
opaline; milky			
<b>Odour</b>			
sweetish			
<b>Odour threshold</b>			
No data available			
<b>pH value</b>			
Value	8.0	-	10.5
<b>Boiling point / boiling range</b>			
Value	appr.	100	°C
<b>Melting point / melting range</b>			
Value	appr.	-15	°C
<b>Decomposition point / decomposition range</b>			
No data available			
<b>Flash point</b>			
not determined			
<b>Auto-ignition temperature</b>			
No data available			
<b>Oxidising properties</b>			
No data available			
<b>Explosive properties</b>			
No data available			
<b>Flammability (solid, gas)</b>			
No data available			
<b>Lower flammability or explosive limits</b>			
No data available			
<b>Upper flammability or explosive limits</b>			
No data available			
<b>Vapour pressure</b>			
Value	appr.	20	hPa
Reference temperature		20	°C
<b>Vapour density</b>			
No data available			
<b>Evaporation rate</b>			
No data available			
<b>Relative density</b>			
No data available			
<b>Density</b>			
Value	1.05	-	1.50 g/cm <sup>3</sup>
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](mailto: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	<b>silicon dioxide, chemically prepared</b>		
	7631-86-9 231-545-4 - 01-2119379499-16	-	> 50.00 - < 70.00 % -b.w.
2	<b>ethanediol</b>		
	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
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
	Silica, amorphous		
	inhalable dust		
	TWA	6	mg/m <sup>3</sup>
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
	Silica, amorphous		
	respirable dust		
	TWA	2.4	mg/m <sup>3</sup>
2	ethanediol	107-21-1	203-473-3
<b>2000/39/EWG</b>			
	Ethylene glycol		
	STEL	104	mg/m <sup>3</sup> 40 ml/m <sup>3</sup>
	TWA	52	mg/m <sup>3</sup> 20 ml/m <sup>3</sup>
	Skin resorption / sensibilisation	Skin	
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
	Ethane 1,2-diol		
	particulate		
	TWA	10	mg/m <sup>3</sup>
	Skin resorption / sensibilisation	Sk	
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
	Ethane 1,2-diol		
	vapour		
	STEL	104	mg/m <sup>3</sup>
	TWA	52	mg/m <sup>3</sup>
	Skin resorption / sensibilisation	Sk	

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

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/m³
2	ethanediol			107-21-1 203-473-3
	dermal	Long term (chronic)	systemic	106 mg/kg/day
	inhalative	Long term (chronic)	local	35 mg/m³

**DNEL value (consumer)**

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/m³

**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		<b>107-21-1</b> <b>203-473-3</b>	
	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**

<b>Form/Colour</b>			
liquid			
opaline; milky			
<b>Odour</b>			
sweetish			
<b>Odour threshold</b>			
No data available			
<b>pH value</b>			
Value	8.0	-	10.5
<b>Boiling point / boiling range</b>			
Value	appr.	100	°C
<b>Melting point / melting range</b>			
Value	appr.	-15	°C
<b>Decomposition point / decomposition range</b>			
No data available			
<b>Flash point</b>			
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 <sup>3</sup>
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)**Current version :** 2.0.4, issued: 19.10.2015**Replaced version:** 2.0.3, issued: 11.02.2015**Region:** GB**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.	

**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

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.

---

**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

---

**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**

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](mailto:umco@umco.de)

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.

However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

Document protected by copyright. Alterations or reproductions require the express written permission of UMCO Umwelt Consult GmbH.