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).

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.

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.

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/m³		
	List of approved workplace exposure limits (WELs) / EH40				
	Silica, amorphous				
	respirable dust				
	TWA	2.4	mg/m³		
2	**ethanediol**	**107-21-1**		**203-473-3**	
	2000/39/EWG				
	Ethylene glycol				
	STEL	104	mg/m³	40	ml/m³
	TWA	52	mg/m³	20	ml/m³
	Skin resorption / sensibilisation	Skin			
	List of approved workplace exposure limits (WELs) / EH40				
	Ethane 1,2-diol				
	particulate				
	TWA	10	mg/m³		
	Skin resorption / sensibilisation	Sk			
	List of approved workplace exposure limits (WELs) / EH40				
	Ethane 1,2-diol				
	vapour				
	STEL	104	mg/m³		
	TWA	52	mg/m³		
	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/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)

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

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

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/cm³
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.

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			

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.		

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			

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.

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.

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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