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

1.1 Product identifier

Trade name

Wirolyt (REF 52460)

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 in accordance with Regulation (EC) No 1272/2008 (CLP)
Acute Tox. 4; H302
Eye Dam. 1; H318
Met. Corr. 1; H290
Skin Corr. 1A; H314
STOT RE 2; H373o

Classification information
Product is classified as “Corrosive” based on the extrem pH-value, see:
- Regulation 1272/2008 (CLP), Annex. I, number 3.2.2.2 / 3.2.3.1.2)
This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements

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

Hazard pictograms


GHS05


GHS07


GHS08

Signal word
Danger

Hazardous component(s) to be indicated on label:
ethanediol

Hazard statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H373o	May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements

P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P501	Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards

PBT assessment
No data available.

vPvB assessment
No data available.

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	**ethanediol**			
	107-21-1 203-473-3 603-027-00-1 01-2119456816-28	Acute Tox. 4; H302 STOT RE 2; H373o	> 90.00	%-b.w.
2	**sulphuric acid**			
	7664-93-9 231-639-5 016-020-00-8 -	Skin Corr. 1A; H314 Met. Corr. 1; H290	> 5.00 - < 10.00	%-b.w.

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

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
2	B	Skin Irrit. 2; H315: C >= 5% Eye Irrit. 2; H319: C >= 5% Skin Corr. 1A; H314: C >= 15%	-	-

Full text for the notes: pls. see section 16 “Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)”.

No	Route, target organ, concrete effect
1	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
When in contact with the skin, clean with soap and water. Seek medical attention.

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
Carbon dioxide; Extinguishing powder; Water spray jet; Foam

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: Sulphur oxides; Carbon monoxide and carbon dioxide

5.3 Advice for firefighters
Adapt extinguisher and fire-fighting measures to fire in the environment. Use self-contained breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Avoid contact with skin, eyes and clothing. 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
Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3 Methods and material for containment and cleaning up
Ensure adequate ventilation. Pick up with absorbent material (e.g., sand, kieselguhr, acid binder, universal binder, sawdust). 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
Product inherent handling risks must be minimised taking the appropriate measures for protection and preventive actions. The working process should be designed to rule out the release of hazardous substances or skin contact as far it is possible by the state of the art.

General protective and hygiene measures
Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Do not inhale gases/vapours/aerosols. Have emergency shower available. Provide eye wash fountain in work area.

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 in a cool, well-ventilated place.

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
Do not store together with: explosive substances; Peroxides; Oxidizing agents

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	**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			
2	**sulphuric acid**	**7664-93-9**		**231-639-5**	
	2000/39/EWG				
	sulphuric acid (mist)				
	Mist				
	TWA	0.05	mg/m³		

DNEL and PNEC values

DNEL values (worker)

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	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. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection
Safety glasses with side protection shield (EN 166)

Hand protection
Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product . Check in any case suitability of protective glove for the specific workplace conditions (e.g. mechanical resistance, product compatibility, antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Replace immediately protective gloves if worn or damaged. Make sure that operations are designed so that it is not necessary to wear continuously 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
colourless

Odour
slightly sweetish

Odour threshold
No data available

pH value			
Value	<	1	
Reference temperature		20	°C
Concentration		100	%

Boiling point / boiling range
No data available

Melting point / melting range
No data available

Decomposition point / decomposition range
No data available

Flash point		
Value	101	°C

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
No data available

Vapour density
No data available

Evaporation rate
No data available

Relative density
No data available

Density		
Value	1.175	g/cm³

Solubility in water		
Reference temperature	20	°C
Remarks	Completely miscible	

Solubility(ies)
No data available

Partition coefficient: n-octanol/water
No data available

Viscosity			
Value		19.035	mPa*s
Type	dynamic		
Value		16.2	mm²/s
Reference temperature		20	°C
Type	kinematic		

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

In case of addition of water warming up. If diluting put acid in water, not reverse. If diluting or dissolving in water always appears strong heating up. Reactions with alkalies and metals.

10.5 Incompatible materials

Metals; Water

10.6 Hazardous decomposition products

In case of fire the following can be released: Sulphurous oxides (SOx)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity (result of the ATE calculation for the mixture)	
No	**Product Name**
1	**Wirolyt (REF 52460)**
ATE (Mixture)	554.94
Method	Calculation method according Regulation (EC) No 1272/2008, (CLP), annex I, part 3, section 3.1.3.6.

Acute oral toxicity				
No	**Substance name**	**CAS no.**	**EC no.**	
1	**sulphuric acid**	**7664-93-9**	**231-639-5**	
LD50		2140		mg/kg bodyweight
Species	rat			
Source	ECHA			

Acute dermal toxicity
No data available

Acute inhalational toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/irritation
No data available

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	**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 data available

Carcinogenicity
No data available

STOT-single exposure
No data available

STOT-repeated exposure			
No	**Substance name**	**CAS no.**	**EC no.**
1	**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

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Corrosive effect of product in contact with skin, eyes and mucous membranes. Harmful if swallowed.

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			
2	**sulphuric acid**	**7664-93-9**		**231-639-5**	
LC50			42		mg/l
Duration of exposure			96		h
Species		Gambusia affinis			

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			
2	**sulphuric acid**	**7664-93-9**		**231-639-5**	
EC50			29		mg/l
Duration of exposure			24		h
Species		Daphnia magna			

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)
No data available

Toxicity to algae (chronic)
No data available

Bacteria toxicity					
No	**Substance name**	**CAS no.**		**EC no.**	
1	**sulphuric acid**	**7664-93-9**		**231-639-5**	
EC50			58		mg/l
Duration of exposure			120		h
Species		activated sludge			

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	No data available.
vPvB assessment	No data available.

12.6 Other adverse effects
No data available.

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

Class	8
Classification code	C1
Packing group	II
Hazard identification no.	80
UN number	UN2796
Technical name	SULPHURIC ACID
Tunnel restriction code	E
Label	8

14.2 Transport IMDG

Class	8
Packing group	II
UN number	UN2796
Proper shipping name	SULPHURIC ACID
EmS	F-A+S-B
Label	8

14.3 Transport ICAO-TI / IATA

Class	8
Packing group	II
UN number	UN2796
Proper shipping name	Sulphuric acid
Label	8

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	
The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII.	No 3

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)

H318	Causes serious eye damage.

Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)

B	Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid … %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

Department issuing safety data sheet
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This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.