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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

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Further trade names

UFI: Y9E2-700N-G000-65MN

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

Heat transfer fluids

1.3. Details of the supplier of the safety data sheet

Company name:	BIZOL BITA Trading GmbH	
Street:	Martin-Buber-Str. 12	
Place:	D-14163 Berlin	
Telephone:	+49 (30) 804 869-0	Telefax: +49 (30) 804 869-2860
e-mail:	support@bizol.de	
Internet:	www.bizol.com	

1.4. Emergency telephone number:

Germany: +49 (30) 804 869-0 (08.00-17.00, Mo-Fr)
In England and Wales: NHS Direct: 0845 4647 or 111 In Scotland: NHS 24 - 08454 24 24 24 In Republic of Ireland: 01 809 2166

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements**Regulation (EC) No. 1272/2008****Hazard components for labelling**

ethanediol

Signal word: Warning

Pictograms:

**Hazard statements**

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe mist/vapours/spray.
P501 Dispose of waste according to applicable legislation.

2.3. Other hazards

Results of PBT and vPvB assessment: not applicable.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

Blend of the following materials with non-hazardous additives.

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
107-21-1	ethanediol			10 - < 25 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
110-91-8	morpholine			< 2,5 %
	203-815-1	613-028-00-9	01-2119496057-30	
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1; H226 H331 H311 H302 H314 H318			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
107-21-1	203-473-3	ethanediol	10 - < 25 %
		dermal: LD50 = 3500 mg/kg; oral: LD50 = 1600 mg/kg	
110-91-8	203-815-1	morpholine	< 2,5 %
		inhalation: LC50 = 8 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = ca. 500 mg/kg; oral: LD50 = ca. 1910 mg/kg	

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. If unconscious but breathing normally, place in recovery position and seek medical advice. Remove contaminated, saturated clothing immediately.

After inhalation

Remove casualty to fresh air and keep warm and at rest.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Let water be drunken in little sips (dilution effect). Call a physician immediately. Do NOT induce vomiting.

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

When in doubt or if symptoms are observed, get medical advice.

4.3. Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO₂).

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide Carbon dioxide (CO₂). Do not inhale explosion and combustion gases.

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5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Do not allow to enter into soil/subsoil.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Protective measures: see section 7 + 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Clean contaminated articles and floor according to the environmental legislation.

6.3. Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Protective measures: see section 7 + 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use personal protection equipment. Do not eat, drink or smoke when using this product. Provide fresh air. Handle and open container with care. Conditions to avoid: generation/formation of aerosols.

Advice on protection against fire and explosion

No special measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Protect against: Frost. Keep away from heat. Protect from direct sunlight. Keep container tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL
110-91-8	Morpholine	10	36		TWA (8 h)	WEL
		20	72		STEL (15 min)	WEL

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DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
107-21-1	ethanediol			
Worker DNEL, long-term		inhalation	local	35 mg/m³
Consumer DNEL, long-term		inhalation	local	7 mg/m³
Consumer DNEL, long-term		dermal	systemic	53 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	106 mg/kg bw/day

PNEC values

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

8.2. Exposure controls

Appropriate engineering controls

See section 7. No additional measures necessary.

Protective and hygiene measures

When using do not eat, drink, smoke, sniff.

Eye/face protection

Eye glasses with side protection.

Hand protection

Wear suitable gloves. Recommended glove articles: EN ISO 374. Suitable material: NBR (Nitrile rubber). Breakthrough time:: > 480 min (Thickness of the glove material: 0.4 mm). Breakthrough times and swelling properties of the material must be taken into consideration. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Skin protection

Protective clothing.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. When splashes or fine mist form, a permitted breathing apparatus suitable for these purposes must be used. Suitable respiratory protection apparatus: Filtering Half-face mask (DIN EN 149), e.g. FFA P / FFP3.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: green
Odour: characteristic

Test method

pH-Value: not applicable

Changes in the physical state

Melting point: not determined

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Boiling point or initial boiling point and boiling range:	not determined
Pour point:	not applicable
Flash point:	> 100 °C
Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Auto-ignition temperature:	not determined
Decomposition temperature:	No information available.
Vapour pressure:	not determined
Density (at 20 °C):	1,02 g/cm³ DIN 51757
Water solubility:	miscible
Partition coefficient n-octanol/water:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined
Flow time:	not determined
Relative vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information

No information available.

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

No information available.

10.2. Chemical stability

No information available.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No information available.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

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

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-21-1	ethanediol				
	oral	LD50 1600 mg/kg		Practical experience/human evidence	
	dermal	LD50 3500 mg/kg	Mouse		
110-91-8	morpholine				
	oral	LD50 ca. 1910 mg/kg	Rat		
	dermal	LD50 ca. 500 mg/kg	Rabbit		
	inhalation vapour	LC50 8 mg/l	Rat		
	inhalation aerosol	ATE 0,5 mg/l			

Irritation and corrosivity

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

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (ethanediol)

Aspiration hazard

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

11.2. Information on other hazards

Other information

Keeping to the general worker's protection rules and the industrial hygienics, there is no risk in handling this product through the personnel.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
107-21-1	ethanediol					
	Acute fish toxicity	LC50 72860 mg/l	96 h	Pimephales promelas (fathead minnow)		
	Acute algae toxicity	ErC50 6500-13000 mg/l	96 h	Selenastrum capricornutum		
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h	Daphnia magna (Big water flea)		
	Fish toxicity	NOEC 15380 mg/l	7 d	Pimephales promelas (fathead minnow)		
	Crustacea toxicity	NOEC 8590 mg/l	7 d	Ceriodaphnia Dubia		

12.2. Persistence and degradability

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There are no data available on the mixture itself.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
107-21-1	ethanediol			
	Biodegradation	90-100	10	
	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A			

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol	-1,36

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

List of Wastes Code - residues/unused products

070701 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; aqueous washing liquids and mother liquors; hazardous waste

Contaminated packaging

Non-contaminated packages may be recycled. Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

14.4. Packing group:

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number:

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

14.4. Packing group:

No dangerous good in sense of this transport regulation.

Marine pollutant:

NO

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

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14.4. Packing group:

No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No data available

14.7. Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

2010/75/EU (VOC): 0 %

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,9,15.

Abbreviations and acronyms

ADR: Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement concernant le transport international ferroviaire des marchandises dangereuses (Regulations concerning the International Carriage of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

CAS: Chemical Abstracts Service (a division of the American Chemical Society)

DNEL/DMEL: Derived No-Effect Level / Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

WEL (UK): Workplace Exposure Limits

TWA (EC): Time-Weighted Average

STEL (EC): Short Term Exposure Limit

ATE: Acute Toxicity Estimate

LD50: Lethal Dose, 50% (median lethal dose)

LC50: Lethal Concentration, 50% (median lethal concentration)

EC50: half maximal Effective Concentration

ErC50: EC50 in terms of reduction of growth rate

AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
STOT RE 2; H373	Calculation method

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.

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H318	Causes serious eye damage.
H331	Toxic if inhaled.
H373	May cause damage to kidneys through prolonged or repeated exposure by swallowing.
H373	May cause damage to organs through prolonged or repeated exposure.

Further Information

Safety Data Sheet according to COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)