

**Bizol Radiator Repair+ r71**

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

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**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**

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P260 Do not breathe vapour/aerosol.  
P314 Get medical advice/attention if you feel unwell.  
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**

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### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
107-21-1	ethanediol			10 - < 20 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
12179-04-3	disodium tetraborate pentahydrate			0,1 - < 1 %
	215-540-4	005-011-02-9		
	Repr. 1B; H360FD			
7632-00-0	sodium nitrite			0,1 - < 1 %
	231-555-9	007-010-00-4	01-2119471836-27	
	Ox. Sol. 3, Acute Tox. 3, Eye Irrit. 2, Aquatic Acute 1; H272 H301 H319 H400			

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

## 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 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 (CO<sub>2</sub>).

#### Unsuitable extinguishing media

High power water jet.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Do not inhale explosion and combustion gases.

### 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

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### **6.1. Personal precautions, protective equipment and emergency procedures**

See protective measures under point 7 and 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**

Absorb with liquid-binding material (e.g. 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**

See protective measures under point 7 and 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 against 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 <sup>3</sup>	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

#### **DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
107-21-1	ethanediol			
	Worker DNEL, long-term	inhalation	local	35 mg/m <sup>3</sup>
	Consumer DNEL, long-term	inhalation	local	7 mg/m <sup>3</sup>
	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
	Soil	1,53 mg/kg
	Freshwater sediment	20,9 mg/kg
	Marine water	1 mg/l
	Micro-organisms in sewage treatment plants (STP)	199,5 mg/l

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### 8.2. Exposure controls

#### Appropriate engineering controls

See chapter 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: DIN EN 374. Suitable material: NBR (Nitrile rubber).

Breakthrough time (maximum wearing 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:	light brown
Odour:	characteristic

#### Test method

pH-Value: not applicable

#### Changes in the physical state

Melting point: not determined

Initial boiling point and boiling range: not determined

Pour point: not applicable

Flash point: not applicable

Lower explosion limits: not determined

Upper explosion limits: not determined

Ignition temperature: not determined

Decomposition temperature: No information available.

Vapour pressure: not determined

Density: 1,035 g/cm<sup>3</sup>

Water solubility: miscible

Partition coefficient: not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Flow time: not determined

Vapour density: not determined

Evaporation rate: not determined

### 9.2. Other information

No information available.

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### 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 toxicological effects

##### Acute toxicity

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

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
107-21-1	ethanediol			
	oral	LD50 1600 mg/kg		Practical experience/human evidence
	dermal	LD50 3500 mg/kg	Mouse	
12179-04-3	disodium tetraborate pentahydrate			
	oral	LD50 3200 - 3400 mg/kg	Rat	
	dermal	LD50 > 2000 mg/kg	Rabbit	
	inhalative (4 h) aerosol	LC50 > 2 mg/l		
7632-00-0	sodium nitrite			
	oral	LD50 180 mg/kg	Rat	GESTIS
	inhalative (4 h) aerosol	LC50 5,5 mg/l	Rat	

##### 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.

##### Practical experience

##### Other observations

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

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**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
107-21-1	ethanediol				
	Acute fish toxicity	LC50 72860 mg/l	96 h	Pimephales promelas (fathead minnow)	
	Acute algae toxicity	ErC50 mg/l 6500-13000	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	
7632-00-0	sodium nitrite				
	Acute fish toxicity	LC50 mg/l 0,56 - 1,78	96 h	Onchorhynchus mykiss	
	Acute algae toxicity	ErC50 >100 mg/l	72 h	Desmodesmus subspicatus	OECD 201
	Acute crustacea toxicity	EC50 mg/l 12,5 - 100	48 h	Daphnia magna	

**12.2. Persistence and degradability**

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
7632-00-0	sodium nitrite	-3,7

**12.4. Mobility in soil**

No data available

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

No data available

**12.6. Other adverse effects**

No data available

**SECTION 13: Disposal considerations**
**13.1. Waste treatment methods**
**Advice on disposal**

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.

**Waste disposal number of waste from residues/unused products**

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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  
Classified as 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.  
**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. Transport in bulk according to Annex II of Marpol and the IBC Code**

No data available

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):  
disodium tetraborate pentahydrate

Restrictions on use (REACH, annex XVII):

Entry 30: disodium tetraborate pentahydrate

2010/75/EU (VOC): 0 %

**National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****Abbreviations and acronyms**

ADR: Accord européen relatif au transport international des marchandises dangereuses par route (European 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)

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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  
VwVwS: Verwaltungsvorschrift wassergefährdende Stoffe

**Relevant H and EUH statements (number and full text)**

H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

**Further Information**

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.

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