

## Safety Data Sheet

according to UK REACH Regulation

### Antifrogen N 50 % (Working Solution)

Revision date: 07.02.2024

Product code: 15052.xxxxx

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

##### 1.1. Product identifier

Antifrogen N 50 % (Working Solution)

UFI: 89PA-J11M-7009-JTG5

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

###### Use of the substance/mixture

Use as coolant.

###### Uses advised against

Any non-intended use.

##### 1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH  
Street: Schumannstr. 142/144  
Place: D-63069 Offenbach  
Telephone: +49 (0) 69 / 400 3019-60      Telefax: +49 (0) 69 / 400 3019-64  
E-mail: info@morphisto.de  
Contact person: Morphisto GmbH  
E-mail: gefahrstoffmanagement@morphisto.de  
Internet: http://www.morphisto.de

##### 1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### GB CLP Regulation

Acute Tox. 4; H302  
STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### GB CLP Regulation

###### Hazard components for labelling

ethanediol

Signal word: Warning

Pictograms:



###### Hazard statements

H302 Harmful if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure.

###### Precautionary statements

P260 Do not breathe mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P314 Get medical advice/attention if you feel unwell.

###### Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

**Safety Data Sheet**

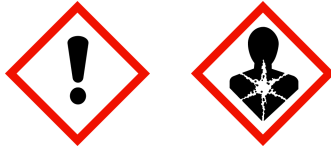
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**Pictograms:**

**2.3. Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

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

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
107-21-1	ethanediol			50 - < 55 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			

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	50 - < 55 %
	dermal: LD50 = >3500 mg/kg; oral: LD50 = 7712 mg/kg		

**Further Information**

This product contains no substances of very high concern (SVHC) (>0,1%) which are included in the Candidate List according to Article 59 of REACH.

**SECTION 4: First aid measures**
**4.1. Description of first aid measures**
**General information**

First aider: Pay attention to self-protection! Remove casualty to fresh air and keep warm and at rest. Take off immediately all contaminated clothing and wash it before reuse.

**After inhalation**

Provide fresh air. Medical treatment necessary.

**After contact with skin**

Wash with plenty of water. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. If accidentally swallowed rinse the mouth with plenty of water

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(only if the person is conscious) and obtain immediate medical attention. Let water be drunken in little sips (dilution effect).

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

No information available.

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

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

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

Non-flammable. Hazardous decomposition products: Carbon monoxide (CO). Nitrogen oxides (NO<sub>x</sub>).

**5.3. Advice for firefighters**

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

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. No special environmental measures are necessary. Clean contaminated articles and floor according to the environmental legislation.

**6.3. Methods and material for containment and cleaning up****For cleaning up**

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.

**Other information**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Always close containers tightly after the removal of product.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Do not breathe gas/fumes/vapour/spray. Use of protective clothing.

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#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep container tightly closed.

##### Hints on joint storage

Do not store together with: food and feed. pharmaceuticals. Infectious substances. Radioactive substances. Explosive substances. Oxidizing substances. Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Pyrophoric solids. Substances which in contact with water form flammable gases. Ammonium nitrate and preparations containing ammonium nitrate.

##### Further information on storage conditions

Avoid: UV-radiation/sunlight. heat.

Unsuitable materials for Container: Aluminium. Galvanized material.

Recommended storage temperature: 15-25 °C

#### 7.3. Specific end use(s)

Use as coolant. Intended for scientific research and development.

### 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			
DNEL type	Exposure route	Effect	Value	
107-21-1	ethanediol			
Worker DNEL, long-term	inhalation	local	35 mg/m <sup>3</sup>	
Worker DNEL, long-term	dermal	systemic	106 mg/kg bw/day	

##### PNEC values

CAS No	Substance	
Environmental compartment	Value	
107-21-1	ethanediol	
Freshwater	10 mg/l	
Marine water	1 mg/l	
Freshwater sediment	37 mg/kg	
Marine sediment	3,7 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

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe

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gas/fumes/vapour/spray. Ensure adequate ventilation. Use extractor hood (laboratory).

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear eye/face protection.

Suitable eye protection: - Eye glasses with side protection - goggles, Face protection umbrella

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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. Recommended material:

Butyl rubber.

Breakthrough time (maximum wearing time): >480 min.

Thickness of glove material: 0,7mm.

NBR (Nitrile rubber).

Breakthrough time 30min.

Thickness of glove material: 0,4mm.

**Skin protection**

Use of protective clothing. Lab apron.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

Suitable respiratory protective equipment:

Filter A (organische Gase und Da?mpfe) nach DIN EN 141.

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

**Environmental exposure controls**

Do not allow uncontrolled discharge of product into the environment.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	Liquid	
Colour:	yellow	
Odour:	slightly perceptible.	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		100 °C
Flammability:		not determined
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		not determined
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined

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pH-Value (at 20 °C):	8-9
Viscosity / kinematic:	not determined
Water solubility: (at 20 °C)	easily soluble
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	23 hPa
Density (at 20 °C):	1,05 g/cm <sup>3</sup>
Relative vapour density:	not determined
Particle characteristics:	not applicable

#### **9.2. Other information**

##### **Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive. none

Oxidizing properties

The product is not: oxidising.

##### **Other safety characteristics**

Evaporation rate:

not determined

Solid content:

not determined

### **SECTION 10: Stability and reactivity**

#### **10.1. Reactivity**

Information is given in subsection 10.3.

#### **10.2. Chemical stability**

This product is hygroscopic.

#### **10.3. Possibility of hazardous reactions**

Reaction with: Alkalis (alkalis). Oxidizing agents, strong.

#### **10.4. Conditions to avoid**

No information available.

#### **10.5. Incompatible materials**

Unsuitable materials for Container: Aluminium. Galvanized material.

#### **10.6. Hazardous decomposition products**

Stable under normal storage and handling conditions.

### **SECTION 11: Toxicological information**

#### **11.1. Information on hazard classes as defined in GB CLP Regulation**

##### **Acute toxicity**

Harmful if swallowed.

##### **ATEmix calculated**

ATE (oral) 1000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-21-1	ethanediol				
	oral	LD50 mg/kg	7712	Rat	ECHA
	dermal	LD50 mg/kg	>3500	Mouse	ECHA

**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**
**Endocrine disrupting properties**

This product does not contain any substance that has endocrine disrupting properties in humans as no ingredient meets the criteria.

**Other information**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**SECTION 12: Ecological information**
**12.1. Toxicity**

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

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
107-21-1	ethanediol					
	Acute fish toxicity	LC50 mg/l	>17000	96 h Oncorhynchus mykiss (Rainbow trout)	ECHA	
	Acute algae toxicity	ErC50 mg/l	>6500	96 h Selenastrum capricornutum	ECHA	
	Acute crustacea toxicity	EC50 mg/l	>100	48 h Daphnia magna (Big water flea)	ECHA	
	Fish toxicity	NOEC mg/l	>1500	28 d Oncorhynchus mykiss (Rainbow trout)	ECHA	
	Crustacea toxicity	NOEC mg/l	>15000	21 d Daphnia magna (Big water flea)	ECHA	

**12.2. Persistence and degradability**

The product has not been tested.

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
107-21-1	ethanediol			
	Biodegradability	83-96%	14	
	Readily biodegradable (according to OECD criteria).			

**12.3. Bioaccumulative potential**

The product has not been tested.

**Partition coefficient n-octanol/water**

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

**12.4. Mobility in soil**

The product has not been tested.

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

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations**
**13.1. Waste treatment methods**
**Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal.

**List of Wastes Code - residues/unused products**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

**List of Wastes Code - used product**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

**List of Wastes Code - contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

**Contaminated packaging**

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**
**Land transport (ADR/RID)**
**14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.



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**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.

**Inland waterways transport (ADN)**

**14.1. UN number or ID 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 or ID 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.

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID 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 dangerous good in sense of this transport regulation.

**14.7. Maritime transport in bulk according to IMO instruments**

No dangerous good in sense of this transport regulation.

**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

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

**Additional information**

This preparation is hazardous in the sense of regulation (EC) No 1272/2008 [GHS].

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

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

**15.2. Chemical safety assessment**

For the following substances of this mixture a chemical safety assessment has been carried out:  
ethanediol

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,8,9,10,11,12,13,15,16.

Rev. 1,0; 04.12.2020; Initial release

Rev. 1,1; 07.02.2024; general adjustment(s)

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**Abbreviations and acronyms**

Acute Tox: Acute toxicity  
 STOT RE: Specific target organ toxicity - repeated exposure  
 CLP: Classification, labelling and Packaging  
 REACH: Registration, Evaluation and Authorization of Chemicals  
 GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
 UN: United Nations  
 CAS: Chemical Abstracts Service  
 DNEL: Derived No Effect Level  
 DMEL: Derived Minimal Effect Level  
 PNEC: Predicted No Effect Concentration  
 ATE: Acute toxicity estimate  
 LC50: Lethal concentration, 50%  
 LD50: Lethal dose, 50%  
 LL50: Lethal loading, 50%  
 EL50: Effect loading, 50%  
 EC50: Effective Concentration 50%  
 ErC50: Effective Concentration 50%, growth rate  
 NOEC: No Observed Effect Concentration  
 BCF: Bio-concentration factor  
 PBT: persistent, bioaccumulative, toxic  
 vPvB: very persistent, very bioaccumulative  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 RID: Regulations concerning the international carriage of dangerous goods by rail  
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
 intérieures)  
 IMDG: International Maritime Code for Dangerous Goods  
 EmS: Emergency Schedules  
 MFAG: Medical First Aid Guide  
 IATA: International Air Transport Association  
 ICAO: International Civil Aviation Organization  
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
 IBC: Intermediate Bulk Container  
 VOC: Volatile Organic Compounds  
 SVHC: Substance of Very High Concern  
 For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>  
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety  
 assessment, chapter R.20 (Table of terms and abbreviations).  
 EC/EEC: European Community/European Economic Community  
 EU: European Union  
 M-factor: Multiplying factor  
 IATA: International Air Transport Association  
 DGR: Dangerous Goods Regulations  
 ICAO: International Civil Aviation Organization  
 TI: Technical Instructions  
 VOC: volatile organic compound

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
STOT RE 2; H373	Calculation method

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

H302 Harmful if swallowed.

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

#### Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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