

**Safety data sheet in accordance with 2001/58/EC**  
**ANTIFROGEN N**

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Substance key: SXR024717  
Version : 1 - 33 / EURevision Date: 25.03.2004  
Date of printing : 23.08.2004**1. Identification of the substance/preparation and company****Trade name****ANTIFROGEN N****Use of the substance/preparation.**Industry sector : Functional Fluids  
Type of use : Brine for refrigeration**Identification of the company**

Clariant GmbH

65926 Frankfurt am Main  
Telephone no. : +49 69 305 18000**Information about the substance/preparation**Division Functional Chemicals  
++49(0)69-305-2092/15315/32251**Emergency telephone number : +49 69 305 6418****2. Composition/information on ingredients****Chemical characterization**

Monoethylene glycol (1,2-ethane diol) with inhibitors

**Hazardous ingredients**

Ethanediol			
Concentration :	90 - 95 %		
CAS number :	107-21-1		
EINECS number :	203-473-3		
Hazard symbols	Xn		
R phrases	22		
Sodium nitrite			
Concentration :	< 0,5 %		
CAS number :	7632-00-0		
EINECS number :	231-555-9		
Hazard symbols	O	T	N
R phrases	8	25	50
Potassium nitrite			
Concentration :	< 0,2 %		
CAS number :	7758-09-0		
EINECS number :	231-832-4		
Hazard symbols	O	T	N
R phrases	8	25	50

**3. Hazards identification**

Harmful if swallowed.

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Remove soiled or soaked clothing immediately

**After inhalation**

In the event of symptoms seek medical advice.

**After contact with skin**

In case of contact with skin wash off immediately with plenty of water

**After contact with eyes**

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice

**After ingestion**

Summon a doctor immediately.

**5. Fire-fighting measures****Suitable extinguishing media**water spray jet  
alcohol-resistant foam  
carbon dioxide  
dry powder**Special hazards from the substance itself, its combustion products or from its vapours**In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO)  
Nitrous gases (NO<sub>x</sub>)**Special protective equipment for firefighting**

Use self-contained breathing apparatus

**6. Accidental release measures****Personal precautions**Ensure adequate ventilation.  
Wear suitable personal protective equipment.**Environmental precautions**

Do not allow to enter drains or waterways

**Methods for cleaning up/taking up**Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust).  
Dispose of as prescribed**7. Handling and storage****Advice on safe handling**Open and handle container with care.  
Provide good ventilation of working area (local exhaust ventilation if necessary).**Advice on protection against fire and explosion**

Observe the general rules of industrial fire protection

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Do not store with alkalies

**8. Exposure controls/personal protection****Ingredients with occupational exposure limits to be monitored****ETHYLENE GLYCOL**

CAS number : 107-21-1

EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents.

EU Exposure Limit Values Data

Revision : 07 2000

Time Weighted Average (TWA):

Values: 52 mg/m<sup>3</sup> 20 ppm**ETHYLENE GLYCOL**

CAS number : 107-21-1

EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents.

EU Exposure Limit Values Data

Revision : 07 2000

Skin designation:

Can be absorbed through the skin.

**ETHYLENE GLYCOL**

CAS number : 107-21-1

EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents.

EU Exposure Limit Values Data

Revision : 07 2000

Short Term Exposure Limit (STEL):

Values: 104 mg/m<sup>3</sup> 40 ppm**General protective measures**

Do not inhale vapours

Avoid contact with eyes and skin

**Hygiene measures**

Keep away from foodstuffs and beverages.

**Respiratory protection :**

Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure

Full mask to standard DIN EN 136

Filter A (organic gases and vapours) to standard DIN EN 141

The use of filter apparatus presupposes that the environment atmosphere contains at least 17% oxygen by volume, and does not exceed the maximum gas concentration, usually 0.5% by volume. Relevant guidelines to be considered include EN 136/141/143/371/372 as well as other national regulations.

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**Hand protection :**

For long-term exposure:  
Butyl rubber gloves  
Minimum breakthrough time / gloves : 480 min  
Minimum thickness / gloves 0,7 mm

For short-term exposure (splash protection):  
Nitrile rubber gloves.  
Minimum breakthrough time / gloves : 30 min  
Minimum thickness / gloves 0,4 mm

These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

**Eye protection :** safety glasses

**9. Physical and chemical properties**

**Form :** Liquid

**Colour :** light yellow

**Odour :** perceptible

**Pourpoint :** approx. -70 °C  
Method : DIN 51583

**Boiling temperature :** approx. 170 °C ( 1.013 mbar)  
Method : ASTM D 1120

**Flash point :** approx. 120 °C  
Method : DIN 51758 (closed cup)

**Ignition temperature :** approx. 410 °C  
Method : DIN 51794

**Oxidizing properties :** Not applicable

**Self-ignition temperature :** not determined

**Lower explosion limit :** 3 %(V)

**Upper explosion limit :** not determined

**Evaporation rate :** not determined

**Vapour pressure :** < 0,1 mbar (20 °C)  
Method : Calculated by Syracuse.

**Density :** approx. 1,14 g/cm<sup>3</sup> (20 °C)  
Method : DIN 51757

**Bulk density :** Not applicable

**Vapour density in relation to air :** not determined

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<b>Solubility in water :</b>	(20 °C) miscible in all proportions
<b>Soluble in ... :</b>	fat not determined
<b>pH value :</b>	8 - 9 (20 °C, 300 g/l) Method : DIN EN 1262
<b>Octanol/water partition coefficient (log Pow) :</b>	Not applicable
<b>Viscosity (kinematic) :</b>	26 - 29 mm <sup>2</sup> /s ( 20 °C) Method : DIN 51562
<b>Combustion number :</b>	Not applicable

**10. Stability and reactivity**

**Thermal decomposition :** approx. 260 °C  
Method : DSC

**Hazardous reactions**  
Reactions with alkalis.

**11. Toxicological information**

<b>Acute oral toxicity :</b>	LD50 4.000 mg/kg (rat) Source : IUCLID Information based on the main component.
<b>Acute inhalation toxicity :</b>	not determined
<b>Acute dermal toxicity :</b>	not determined
<b>Irritant effect on skin :</b>	non-irritant
<b>Irritant effect on eyes :</b>	slightly irritant
<b>Sensitization :</b>	not determined
<b>Mutagenicity :</b>	not determined

**Remarks**

Vapours and mists cause irritation/burns to eyes and the respiratory tract  
There is a possibility of kidney damage  
Poisoning affects the central nervous system

**12. Ecological information**

<b>Biodegradability :</b>	90 % good degradability Method : Zahn-Wellens test
<b>Fish toxicity :</b>	LC50 1.500 mg/l (golden orfe)

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If handled correctly it causes no disturbance in treatment plants.

**13. Disposal considerations****Product**

In accordance with local authority regulations, take to special waste incineration plant

**14. Transport information**

<b>ADR</b>	not restricted
<b>ADNR</b>	not restricted
<b>RID</b>	not restricted
<b>IATA</b>	not restricted
<b>IMDG</b>	not restricted

**15. Regulatory information****Labelling in accordance with EC-Directives**hazard warning labelling compulsory  
Classification according to the calculation procedure of the Dangerous Preparations Directive (1999/45/EC).**Hazard symbols**

Xn Harmful

**Hazardous component(s) to be indicated on label**

Ethanediol

**R phrases**

22 Harmful if swallowed.

**S phrases**2 Keep out of the reach of children.  
24/25 Avoid contact with skin and eyes.**16. Other information****Text of the R-phrases which are allocated to the ingredients/components mentioned in section 2 of this Safety Data Sheet.**

22	Harmful if swallowed.
25	Toxic if swallowed.
50	Very toxic to aquatic organisms.
8	Contact with combustible material may cause fire.

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The data are based on the current state of our knowledge, and are intended to describe the product with regard to the requirements of safety. The data should not be taken to imply any guarantee of a particular or general specification. It is the responsibility of the user of the product to ensure to his satisfaction that the product is suitable for the intended purpose and method of use. We do not accept responsibility for any harm caused by the use of this information. In all cases, our general conditions of sale apply.