

ANTIFROGEN N

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Revision Date: 11/28/2014

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Section 01 - Product and company identification

Identification of the company:

Clariant Produkte (Deutschland) GmbH
Frankfurt am Main, 65926
Telephone No.: +49 69 305 18000

Information of the substance/preparation:

Product Safety 1-704-331-7710

Emergency tel. number: +1 800-424-9300 CHEMTREC

Trade name: ANTIFROGEN N
Material number: 107601
Synonyms: Product Has No Synonyms
Primary product use: Brine for refrigeration
Chemical family: Monoethylene glycol (1,2-ethane diol) with corrosion inhibitors

Section 02 - Hazards identification

Emergency overview: Yellow liquid.
Causes respiratory tract irritation.
Harmful if swallowed.

Expected Route of entry:**Inhalation:**

Vapors and/or mists are probably irritating to respiratory passages, nose, and throat.

Skin contact:

Not expected to be irritating to skin.

Eye contact:

Not expected to be irritating to the eyes.

Ingestion:

Harmful if swallowed.

Health effects of exposure:

Ethylene Glycol (107-21-1)

Ingestion may cause abdominal discomfort or pain, dizziness, malaise, lumbar pain, oliguria, uremia and central nervous system depression. Severe kidney damage follows the ingestion of large volumes. May be fatal. No evidence of adverse health effects from skin absorption or contact from available literature. Inhalation may cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating in an enclosed and poorly ventilated workplace may produce nausea, vomiting, headache and dizziness. No evidence of adverse health effects from skin contact from available information. Liquid, vapor and mist may cause eye discomfort with transient conjunctivitis. Serious corneal injury is not anticipated. Repeated inhalation of mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus. Has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations. There is, however, no currently available information to suggest birth defects have been caused in humans; considered, therefore, an animal teratogen. Two chronic feeding studies, using rats and mice, have not produced evidence of dose-related increases in tumor incidence, or a different pattern of tumors compared with untreated controls. The

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absence of a carcinogenic potential has been supported by in-vitro genotoxicity studies. These studies show no mutagenic or clastogenic effects. Repeated or high exposures may cause kidney damage or stones. Brain damage may also occur. Skin allergy can develop. If this happens, even small future exposures can cause a rash.

Known effects on other illnesses:

No known effects on other illnesses for this product.

Listed carcinogen:

OSHA Specifically Regulated
Chemicals/Carcinogens: Not listed

NTP - National Toxicology Program Report: Not listed

International Agency for Research on Cancer (IARC) - Overall Evaluations of Carcinogenicity to Humans.: Not listed

Other: No

HMIS:

Health: 1

Flammability: 1

Reactivity: 0

Personal protection: D

Section 03 - Composition/information on ingredients

Hazardous ingredients:

| Component | CAS-no. (Trade secret no.) | Concentration |
|-----------------|----------------------------|---------------|
| Ethylene glycol | 107-21-1 | 90 - 95 % |

Section 04 - First aid measures

After inhalation:

Move the victim to fresh air.
Give oxygen or artificial respiration if needed.
Get immediate medical advice/ attention.
Never give anything by mouth to an unconscious person.

After contact with skin:

Immediately flush skin with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. If redness or irritation occurs, seek medical attention.

After contact with eyes:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get medical attention immediately if irritation develops and persists.

After ingestion:

Get medical attention immediately.

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Advice to doctor / Treatment:

The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and its early administration may block the formation of Nephrotoxic Metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in Sodium Bicarbonate, at a rate of about 10 ml ethanol per hour. A desired therapeutic level of Ethanol in blood is 100 mg/dl. Hemodialysis may be required. Pulmonary Edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. the mechanism of production has not been elucidated, but it appears to be noncardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end-expiratory pressure may be required.

Section 05 - Fire fighting measures

| | |
|-------------------------------|---|
| Flashpoint: | 246 °F Method: ASTM D6450 (closed cup) |
| Lower explosion limit: | 3 %(V) Data relate to solvent |
| Upper explosion limit: | not tested. |
| Self ignition: | Not applicable |
| Ignition temperature: | > 752 °F Method: DIN 51794 |

Hazardous combustion products:

In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO)
Nitrogen oxides (NOx)
None known.

| | |
|-----------------------------|---|
| Extinguishing media: | Water spray jet Alcohol-resistant foam Carbon dioxide (CO2) Dry powder |
|-----------------------------|---|

Special fire fighting procedure:

Wear positive pressure self-contained breathing apparatus (SCBA) and full protective equipment.

Section 06 - Accidental release measures**Steps to be taken in case of spill or leak:**

Contain spill. Ensure adequate ventilation and wear appropriate personal protective equipment. Collect onto inert absorbent. Place in sealable container. Do not allow to contaminate water sources or sewers.

Section 07 - Handling and storage**Advice on safe handling:**

Avoid contact with skin and eyes.

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Further info on storage conditions:

Keep container closed.

Section 08 - Exposure controls / personal protection**Occupational exposure limits:**

| Component | CAS number: | Regulatory list | Type of value | Values / Remarks |
|---------------------------|-------------|---|---------------|-------------------------------|
| Ethylene glycol | 107-21-1 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 | Ceiling limit | 50 ppm; 125 mg/m ³ |
| Ethylene glycol (Aerosol) | 107-21-1 | USA. ACGIH Threshold Limit Values (TLV) | Ceiling limit | 100 mg/m ³ |
| Ethylene glycol | 107-21-1 | USA. ACGIH Threshold Limit Values (TLV) | Ceiling limit | 100 mg/m ³ |

Respiratory protection:

If airborne concentrations pose a health hazard, become irritating or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29 CFR 1910.134

Hand protection:

Butyl rubber or nitrile.

Eye protection:

Tightly fitting safety goggles

Other protective equipment:

Wear suitable protective equipment.

Advice on system design:

Local ventilation recommended - mechanical ventilation may be used.

IDLH:

not determined

Section 09 - Physical and chemical properties

| | |
|-----------------------------|---|
| Form: | Liquid |
| Color: | yellow |
| Odor: | slightly perceptible |
| Odor limit: | not tested. |
| pH: | approx. 8 (20 °C, 100 g/l) Method: DIN 19268 |
| Solubility in water: | (20 °C) completely miscible |

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| | |
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| Soluble in ... : | fat not tested. |
| Density: | 1.1138 g/cm ³ (20 °C) Method: DIN 51757 |
| Melting point : | -25 °F Method: DIN 51583 |
| Boiling point : | approx. 329 °F (1,013 mbar) Method: ASTM D 1120 |
| Boiling point : | 330 °F (1,013 mbar) Method: ASTM D 1120 |
| Evaporation number: | not tested. |
| Vapor pressure: | < 0.08 Torr (20 °C) Method: Calculated by Syracuse. |
| Bulk density: | Not applicable |
| Relative vapor density: | not tested. |
| Partitioning coef. octanol/water: | Not applicable |
| Viscosity / (dynamic): | 20.3 mPa.s (20 °C) |
| Viscosity / (kinematic): | 20.3 mm ² /s (20 °C) Method: DIN 51562 |
| Further information: | hygroscopic |

Section 10 - Stability and reactivity

| | |
|----------------------------------|--|
| Thermal decomposition: | > 300 °C Method: DSC Measurement under nitrogen, No decomposition upto 300 °C. |
| Chemical stability: | Stable under normal conditions. |
| Hazardous Polymerization: | Hazardous polymerisation does not occur. |
| Conditions to avoid: | None known. |

Section 11 - Toxicological information

| | |
|-----------------------------------|---|
| Product information: | |
| Acute oral toxicity: | Acute toxicity estimate 3,841 mg/kg Method: Calculation method Source: EHS-Expert |
| Acute inhalation toxicity: | LC50 > 2.5 mg/l (6 h, Rat) Information refers to the main component. |

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| Acute dermal toxicity: | LD50 > 3,500 mg/kg (Mouse) Information refers to the main component. |
| Skin irritation: | No skin irritation (Rabbit) Information refers to the main component. |
| Eye irritation: | not tested. |
| Sensitization: | non-sensitizing (Guinea pig) Method: Magnusson/Kligman Information refers to the main component. |

Other relevant toxicity information:

Kidney injury may occur.

Poisoning affects the central nervous system

The classification was made by the conventional (calculation) method of the Dangerous Preparations Directive (1999/45/EC)

Section 12 - Ecological information**Product information:**

| | |
|---------------------------|--|
| Biodegradation: | 90 - 100 % (10 d) Method: OECD Test Guideline 301A Readily biodegradable, according to appropriate OECD test, Information refers to the main component. |
| Fish toxicity: | LC0 1,000 mg/l (Leuciscus idus (Golden orfe)) LL50 > 100 mg/l (96 h, Danio rerio (zebra fish)) Method: OECD Test Guideline 203 By analogy with a product of similar composition |
| Daphnia toxicity: | EC50 > 100 mg/l (48 h, Daphnia magna (Water flea)) Method: OECD Test Guideline 202 Information refers to the main component. |
| Algae toxicity: | EC50 6,500 - 13,000 mg/l (96 h, Selenastrum capricornutum (green algae)) Information refers to the main component. |
| Bacteria toxicity: | EC20 > 1,995 mg/l (30 min, activated sludge) Method: ISO 8192 Information refers to the main component. |

Remarks:

If handled correctly it causes no disturbance in treatment plants.

The classification was made by the conventional (calculation) method of the Dangerous Preparations Directive (1999/45/EC)

Section 13 - Disposal considerations

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Waste disposal information:

Consult local, state, and federal regulations.

RCRA hazardous waste:

No -- Not as sold.

RCRA number: NONE

Section 14 - Transport information

DOT not restricted

IATA not restricted

IMDG not restricted

Section 15 - Regulatory information

TSCA Status:

All components of this product are listed on the TSCA Inventory.

SARA (section 311/312):

Acute Health Hazard

Chronic Health Hazard

SARA 302 information:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 information:

This product contains toxic chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372. Any such toxic chemical(s) are shown below. This information must be included in all MSDS's that are copied and distributed for this material.

| Component | CAS-no. (Trade secret no.) | Concentration |
|-----------------|----------------------------|---------------|
| Ethylene glycol | 107-21-1 | 90 - 95 % |

Clean Water Act:

Contains no known priority pollutants at concentrations greater than 0.1%.

Volatile organic compounds VOC:

Remarks: not available

CERCLA information:

| Component | CAS no. | Percentage | RQ |
|-----------------|----------|------------|----------|
| Ethylene glycol | 107-21-1 | 90 - 95 % | 5000 lbs |

FDA:

Permitted for Use per Section: NONE

This product is not registered with the FDA.

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Section 16 - Other information**Other precautions:**

Observe national and local legal requirements

None known.

Label information:

CAUTION!

May cause irritation of respiratory tract. Harmful if swallowed. REPEATED EXPOSURES MAY RESULT IN LIVER OR KIDNEY DAMAGE.

Avoid breathing fumes, vapors, mists or spray. Avoid contact with skin and eyes. Use with adequate ventilation and/or respiratory protection. Wash thoroughly after handling. Keep container closed when not in use.

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Skin contact: immediately remove contaminated clothing and shoes. Flush area thoroughly with plenty of water for at least 15 minutes. If irritation continues, seek medical attention. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice. IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable to the material. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate for that use. No warranty, express or implied, is made regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product specifications.