


1. Identification

| | |
|---|---|
| Product identifier | Freez-Therm (4189-07, 4189-05, 4189-01) |
| Other means of identification | Not available. |
| Recommended use | Closed system anti-freeze agent |
| Recommended restrictions | None known. |
| Manufacturer/Importer/Supplier/Distributor information | |
| Manufacturer | |
| Company name | Nu-Calgon |
| Address | 2611 Schuetz Road St. Louis, MO 63043 United States |
| Telephone | 314-469-7000 / 800-554-5499 |
| E-mail | Not available. |
| Emergency phone number | 1-800-424-9300 (CHEMTREC) |
| Supplier | See above. |

2. Hazard identification

| | | |
|--|---|------------|
| Physical hazards | Not classified. | |
| Health hazards | Acute toxicity, oral | Category 4 |
| | Specific target organ toxicity, repeated exposure | Category 2 |
| Environmental hazards | Not classified. | |
| WHMIS 2015 defined hazards | Not classified | |
| Label elements |  | |
| Signal word | Warning | |
| Hazard statement | Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. | |
| Precautionary statement | | |
| Prevention | Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe the mist or vapor. | |
| Response | IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. Get medical attention if you feel unwell. | |
| Storage | Store locked up. | |
| Disposal | Dispose of container in accordance with local, regional, national and international regulations. | |
| WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC) | None known | |
| WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC) | None known | |
| Hazard(s) not otherwise classified (HNOC) | None known. | |
| Supplemental information | None. | |

3. Composition/Information on ingredients

Mixture

| Chemical name | Common name and synonyms | CAS number | % |
|-----------------|--------------------------|------------|---------|
| Ethylene glycol | | 107-21-1 | 80-100* |

Composition comments

US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.
*CANADA GHS: The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

| | |
|---|---|
| Inhalation | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| Skin contact | Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists. |
| Eye contact | Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists. |
| Ingestion | IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. |
| Most important symptoms/effects, acute and delayed | Prolonged exposure may cause chronic effects. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Symptoms may be delayed. |
| General information | Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. IF exposed or concerned: Get medical attention. Avoid contact with eyes and skin. Wear suitable protective clothing. Keep out of reach of children. |

5. Fire-fighting measures

| | |
|--|---|
| Suitable extinguishing media | Dry chemical powder. Alcohol resistant foam. Carbon dioxide. |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire-fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |
| Hazardous combustion products | May include and are not limited to: Oxides of carbon. |

6. Accidental release measures

| | |
|--|---|
| Personal precautions, protective equipment and emergency procedures | Keep out of low areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Stop the flow of material, if this is without risk. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. |
| Environmental precautions | Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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|---|--|
| Precautions for safe handling | Do not breathe mist or vapor. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use personal protective equipment as required. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. |
| Conditions for safe storage, including any incompatibilities | Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/Personal protection

Occupational exposure limits

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

| Components | Type | Value |
|--------------------------------|---------|-----------------------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m ³ |

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

| Components | Type | Value | Form |
|--------------------------------|---------|-----------------------|--------------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m ³ | Aerosol. |
| | | 50 ppm | Vapor. |
| | STEL | 20 mg/m ³ | Particulate. |
| | TWA | 10 mg/m ³ | Particulate. |

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

| Components | Type | Value | Form |
|--------------------------------|------|----------------------|---------------------|
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m ³ | Aerosol, inhalable. |
| | | 50 ppm | Vapor fraction |
| | TWA | 25 ppm | Vapor fraction |

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

| Components | Type | Value | Form |
|--------------------------------|------|----------------------|---------------------|
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m ³ | Aerosol, inhalable. |

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

| Components | Type | Value | Form |
|--------------------------------|---------|-----------------------|-----------------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 127 mg/m ³ | Vapor and mist. |
| | | 50 ppm | Vapor and mist. |

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

| Components | Type | Value | Form |
|--------------------------------|---------|-----------------------|----------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m ³ | Aerosol. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|--------------------------------|------|----------------------|---------------------|
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m ³ | Aerosol, inhalable. |
| | | 50 ppm | Vapor fraction |
| | TWA | 25 ppm | Vapor fraction |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical goggles are recommended.

Skin protection

Hand protection

Impervious gloves. Confirm with reputable supplier first.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Not applicable.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Wash hands after handling and before eating.

9. Physical and chemical properties

| | |
|---|-----------------|
| Appearance | Liquid |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Clear Blue |
| Odor | Mild |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Pour point | Not available. |
| Specific gravity | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |

10. Stability and reactivity

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|---|--|
| Reactivity | This product may react with oxidizing agents. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Chemical stability | Material is stable under normal conditions. |
| Conditions to avoid | Keep away from open flames, hot surfaces and sources of ignition. Avoid temperatures exceeding the flash point. Strong sunlight for prolonged periods. |
| Incompatible materials | Strong oxidizing agents. Strong acids. Strong bases. |
| Hazardous decomposition products | May include and are not limited to: Oxides of carbon. |

11. Toxicological information

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|---|--|
| Routes of exposure | Inhalation. Ingestion. Skin contact. Eye contact. |
| Information on likely routes of exposure | |
| Ingestion | Harmful if swallowed. |
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | No adverse effects due to eye contact are expected. |
| Symptoms related to the physical, chemical and toxicological characteristics | Direct contact with eyes may cause temporary irritation. |
| Information on toxicological effects | |

Acute toxicity Harmful if swallowed.
Although animal toxicity values do not meet criteria, ethylene glycol is toxic to humans. There are numerous human case reports of toxicity and death published in the literature.

| Components | Species | Test Results |
|---|--|--------------------------------|
| Ethylene glycol (CAS 107-21-1) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Mouse | > 3500 mg/kg, ECHA |
| <i>Inhalation</i> | | |
| LC50 | Rat | > 2.5 mg/L, 6 Hours, ECHA |
| <i>Oral</i> | | |
| LD50 | Cat | 1670 mg/kg, CCID - New Zealand |
| | Human | 1110 - 1665 mg/kg, HSDB |
| | Rat | 7712 mg/kg, ECHA |
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. | |
| Exposure minutes | Not available. | |
| Erythema value | Not available. | |
| Oedema value | Not available. | |
| Serious eye damage/eye irritation | No adverse effects due to eye contact are expected. | |
| Corneal opacity value | Not available. | |
| Iris lesion value | Not available. | |
| Conjunctival reddening value | Not available. | |
| Conjunctival oedema value | Not available. | |
| Recover days | Not available. | |
| Respiratory or skin sensitization | | |
| Canada - Alberta OELs: Irritant | | |
| Ethylene glycol (CAS 107-21-1) | Irritant | |
| Respiratory sensitization | Not available. | |
| Skin sensitization | This product is not expected to cause skin sensitization. | |
| Mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. | |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA. | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052) | | |
| Not listed. | | |
| Reproductive toxicity | Not classified. | |
| Teratogenicity | Not available. | |
| Specific target organ toxicity - single exposure | Not classified. | |
| Specific target organ toxicity - repeated exposure | May cause damage to organs (kidneys) through prolonged or repeated exposure. | |
| Aspiration hazard | Not available. | |
| Chronic effects | Prolonged or repeated exposure can cause kidney damage. | |

12. Ecological information

| Ecotoxicity | See below | | |
|--------------------------------------|--|---|----------------------|
| Ecotoxicological data | | | |
| Components | | Species | Test Results |
| Ethylene glycol (CAS 107-21-1) | | | |
| Crustacea | EC50 | Daphnia | 46300 mg/L, 48 Hours |
| Aquatic | | | |
| Fish | LC50 | Fathead minnow (<i>Pimephales promelas</i>) | 8050 mg/L, 96 hours |
| Persistence and degradability | No data is available on the degradability of this product. | | |
| Bioaccumulative potential | No data available. | | |

| | |
|------------------------------|---|
| Mobility in soil | No data available. |
| Mobility in general | Not available. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

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|--|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

14. Transport information

| | |
|---|--|
| Transport of Dangerous Goods (TDG) Proof of Classification | Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below. |
| General | DOT: Ethylene glycol: Reportable quantity - 5000 pounds (2270 kilograms) This material is not regulated for transport unless the quantity in one package equals or exceeds the reportable quantity. |

U.S. Department of Transportation (DOT)

Basic shipping requirements:

| | |
|-----------------------------|--|
| UN number | UN3082 |
| Proper shipping name | Environmentally hazardous substances, liquid, n.o.s. |
| Technical name | Ethylene glycol |
| Hazard class | 9 |
| Packing group | III |

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

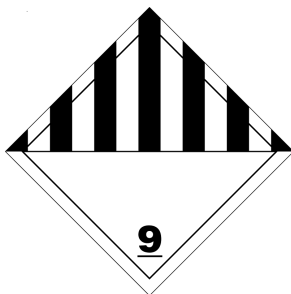
IATA/ICAO (Air)

Not regulated as dangerous goods.

IMDG (Marine Transport)

Not regulated as dangerous goods.

DOT



15. Regulatory information

| | |
|--|--|
| Canadian federal regulations | This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR. |
| Canada Priority Substances List (Second List): Listed substance | |
| Ethylene glycol (CAS 107-21-1) | Listed. |
| Export Control List (CEPA 1999, Schedule 3) | |
| Not listed. | |
| Greenhouse Gases | |
| Not listed. | |

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions

Not applicable

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethylene glycol (CAS 107-21-1) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

No

SARA 311/312 Hazardous chemical

Yes

Classified hazard categoriesAcute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|-----------------|------------|----------|
| Ethylene glycol | 107-21-1 | 80-100* |

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Ethylene glycol (CAS 107-21-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

US state regulations**US - California Hazardous Substances (Director's): Listed substance**

Ethylene glycol (CAS 107-21-1) Listed.

US - Illinois Chemical Safety Act: Listed substance

Ethylene glycol (CAS 107-21-1)

US - Louisiana Spill Reporting: Listed substance

Ethylene glycol (CAS 107-21-1) Listed.

US - Minnesota Haz Subs: Listed substance

Ethylene glycol (CAS 107-21-1) Listed.

US - Texas Effects Screening Levels: Listed substance

Ethylene glycol (CAS 107-21-1) Listed.

US - Washington Chemical of High Concern to Children: Listed substance

Ethylene glycol (CAS 107-21-1)

US. Massachusetts RTK - Substance List

Ethylene glycol (CAS 107-21-1)

US. New Jersey Worker and Community Right-to-Know Act

Ethylene glycol (CAS 107-21-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Ethylene glycol (CAS 107-21-1)

US. Rhode Island RTK

Ethylene glycol (CAS 107-21-1)

US. California Proposition 65**WARNING:** This product can expose you to Ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.**California Proposition 65 - CRT: Listed date/Developmental toxin**

Ethylene glycol (CAS 107-21-1) Listed: June 19, 2015

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|-------------------------------------|------------------------|
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |

Country(s) or region

United States & Puerto Rico

Inventory name

Toxic Substances Control Act (TSCA) Inventory

On inventory (yes/no)*

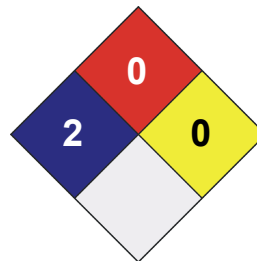
Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information

| LEGEND | |
|----------|---|
| Severe | 4 |
| Serious | 3 |
| Moderate | 2 |
| Slight | 1 |
| Minimal | 0 |

| | | |
|----------------------------|---|---|
| HEALTH | * | 2 |
| FLAMMABILITY | | 0 |
| PHYSICAL HAZARD | | 0 |
| PERSONAL PROTECTION | | X |

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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01

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Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000

Further information

Not available.

Other information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.