

Flo-Perm Magnum Global Concentrate Antifreeze/Coolant

SAFETY DATA SHEET

SECTION 1: Identification

Product identifier

Product name	Flo-Perm Magnum Global Concentrate Antifreeze/Coolant
Part No.	92270, 92271
Recommended Use	Antifreeze/Coolant
Restrictions on Use	None known

Supplier's details

Name Vulsay Industries Ltd.
Address 35 Regan Road
Brampton, Ontario L7A 1B2
Canada

Telephone 905 846 2200
Fax 905 846 2249

Emergency phone number(s) 24 hours EMERGENCY Phone # - 1-800-468-1760

SECTION 2: Hazard identification

Classification of the substance or mixture

- Acute toxicity, oral (chapter 3.1), Cat. 4
- Specific target organ toxicity, single exposure (chapter 3.8), Cat. 2
- Toxic to reproduction (chapter 3.7), Cat. 2
- Eye damage/irritation (chapter 3.3), Cat. 2B

GHS label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed
H373 May cause damage to organs (kidneys) through prolonged or repeated exposure
H360 May damage fertility or the unborn child

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H320 Causes eye irritation

Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P201	Obtain special instructions before use.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection.
P270	Do not eat, drink or smoke when using this product.
P260	Do not breathe mist, vapours, spray.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P301+P330+P331	IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P362+P364	Take off contaminated clothing and wash it before reuse.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P501	Dispose of contents/container in accordance with local regulations

SECTION 3: Composition/information on ingredients

Component	Concentration (volume)
ETHYLENE GLYCOL (CAS no.: 107-21-1; EC no.: 203-473-3; Index no.: 603-027-00-1)	90 - 97 %
DIETHYLENE GLYCOL (CAS no.: 111-46-6; EC no.: 203-872-2; Index no.: 603-140-00-6)	<=5%
Hydrated inorganic acid, organic acid salts (CAS no.: Mixture)	< 6 %
Water (CAS no.: 7732-18-5)	<5%

SECTION 4: First-aid measures

Description of necessary first-aid measures

If inhaled	IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.
In case of skin contact	IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, get medical attention.
In case of eye contact	First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any

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ointments, oils, or medication in the victim's eyes without specific instructions from a physician. Get medical attention immediately.

If swallowed

DO NOT INDUCE VOMITING. IMMEDIATELY call a hospital or poison control center. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. IMMEDIATELY transport the victim to a hospital.

Personal protective equipment for first-aid responders

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Most important symptoms/effects, acute and delayed

Ethylene glycol may be acutely toxic following ingestion. Due to its low volatility and low dermal absorption rate, acute toxicity is unlikely following exposure to ethylene glycol by the inhalation or dermal routes.

Acute toxicity following ingestion of ethylene glycol manifests in three phases. The first is characterized by central nervous system (CNS) depression much like in ethanol intoxication, with features including dizziness, agitation, nystagmus, nausea, tachycardia, elevated blood pressure and vomiting between 0.5 and 12 hours. The second phase at around 12 hours after ingestion is characterized by cardiorespiratory effects, with the development of hyperpnoea, metabolic acidosis, dyspnoea, hyperventilation, tachycardia, cyanosis and elevated blood pressure. A third phase, involving renal toxicity may present 24–36 hours after ingestion with flank pain, renal angle tenderness, acute tubular necrosis, hypercalcaemia, hyperkalaemia and hypomagnesaemia. Oliguria or anuria may occur. Some investigators report a fourth stage characterized by delayed neurological dysfunction.

Death may occur after substantial exposures due to cardiopulmonary failure or CNS damage in later stages. Severe intoxication, if survived, may lead to neurological effects including facial paralysis, slurred speech, loss of motor skills and impaired vision.

Indication of immediate medical attention and special treatment needed, if necessary

If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient

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SECTION 5: Fire-fighting measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water spray may be used to flush spills away from fire and diluted spills to noncombustible proportions(see warning on water spray on hot glycol below.)

Specific hazards arising from the chemical

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Nitrogen oxides.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Special protective actions for fire-fighters

Water spray may cause foaming of hot glycol so indirect application of water spray or use of other extinguishing media should be used on hot glycol.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. In case of spills, beware of slippery floors and surfaces.

Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up

Contain spilled material if possible. Collect in suitable and properly labeled containers. Small spills: Absorb with inert absorbing material. Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information

SECTION 7: Handling and storage

Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Hygiene measures : Do not eat, drink or smoke when using this product. Wash affected areas thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -18 °C (0 °F). Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty. Do not store near food, foodstuffs, drugs or potable water supplies.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

SECTION 8: Exposure controls/personal protection

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Control parameters

CAS: 107-21-1 (EC: 203-473-3)

ETHYLENE GLYCOL

ACGIH: 10 mg/m³ TWA inhalation

CAS: 111-46-6 (EC: 203-872-2)

DIETHYLENE GLYCOL

ACGIH: 10 mg/m³ TWA inhalation

Appropriate engineering controls

General ventilation is sufficient in most cases. If general ventilation is not sufficient, use local exhaust ventilation.

Individual protection measures, such as personal protective equipment (PPE)

Pictograms



Eye/face protection

Wear safety glasses or chemical goggles

Skin protection

Wear protective gloves

Body protection

Wear protective clothing such as apron is necessary

Respiratory protection

Not normally required if product is used as directed. : If exposed to levels above exposure limits wear appropriate respiratory protection.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Clear, slightly viscous, light yellow colour liquid
Odor	No characteristic odor
Odor threshold	No data available.
pH	9 - 11
Melting point/freezing point	Lower then -15deg C (Ethylene Glycol)
Initial boiling point and boiling range	197 °C (Ethylene Glycol)
Flash point	111 °C TCC (Ethylene Glycol)
Evaporation rate	<0.01
Flammability (solid, gas)	Not applicable
Upper/lower flammability limits	Data not available
Vapor pressure	0.06 mm Hg (Ethylene Glycol)
Vapor density	2.1 (Ethylene Glycol)
Relative density (water =1)	1.1 -1.15 @20° C]
Solubility	100% soluble in water

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Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	400 °C (Ethylene Glycol)
Decomposition temperature	No data available.
Viscosity	16.9 cP @ 25°C (Ethylene Glycol)
Explosive properties	No data available.
Oxidizing properties	No data available.

SECTION 10: Stability and reactivity

Reactivity

Not reactive under normal conditions

Chemical stability

Stable

Possibility of hazardous reactions

Hazardous polymerization will not occur

Conditions to avoid

Extremely high or low temperatures. Open flames, sparks, heat and ignition sources

Incompatible materials

Keep away from strong acids, strong bases and oxidizing materials

Hazardous decomposition products

Carbon dioxide, carbon monoxide, fume, aldehydes, ketones

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

ETHYLENE GLYCOL

Acute oral LD50's = 4,700 mg/kg (rats)
5,500 mg/kg (mouse)

LD50 Skin - Rabbit - 9,530 mg/kg

DIETHYLENE GLYCOL

LD50 Oral - Rat - 12,565 mg/kg

Citation: Sigma Aldrich SDS

LD50 Skin - Rabbit - 11,890 mg/kg

Skin corrosion/irritation

Not classified - Based on the pH and the irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation of the skin.

Serious eye damage/irritation

Not classified - Based on the pH and irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation or inflammation of the eyes

Respiratory or skin sensitization

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Not classified

Germ cell mutagenicity

No data available. Not known to be a mutagen

Carcinogenicity

Not classified

Reproductive toxicity

Ethylene glycol is not classified as a human reproductive or developmental toxicant. However, fetal toxicity may arise secondary to maternal toxicity. It is unlikely that exposure to low concentrations of ethylene glycol would result in adverse effects in the fetus, though exposure should be minimized

STOT-single exposure

If vaporized or sprayed: upper respiratory irritation and systemic effects.
Ingestion: moderately toxic, may cause central nervous system effects, cardio pulmonary effects (metabolic acidosis) and kidney failure. Large amounts ingested may cause serious injury and death.
Skin: Slight irritation but injury unlikely.

STOT-repeated exposure

May cause damage to organs (kidneys) through repeated or prolonged exposure
May cause dry skin on repeated exposure

Aspiration hazard

Not classified

Additional information

ETHYLENE GLYCOL: *TOXICITY:

STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89)

Final Limit: Ceiling Limit 50 ppm [015,545,610]

ACGIH: Ceiling Limit 50 ppm (vapor) [015,415,421,610]

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): 1

Flammability (F): 1

Reactivity (R): 0

H1: Materials only slightly hazardous to health (see NFPA for details).

F1: Materials that must be preheated before ignition can occur (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

DIETHYLENE GLYCOL: *TOXICITY:

STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: None

ACGIH: None

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NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): 1
Flammability (F): 1
Reactivity (R): 0

H1: Materials only slightly hazardous to health (see NFPA for details).

F1: Materials that must be preheated before ignition can occur (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

SECTION 12: Ecological information

Toxicity

Ecological information of the product : Data not available

Ethylene Glycol (107-21-1)

EC50 Daphnia 1 > 10,000.00 mg/l (EC50; 24 h)

LC50 fish 2 40,761.00 mg/l (LC50; 96 h; Salmo gairdneri)

Diethylene Glycol (111-46-6)

LC50 fish 1 > 5,000.00 mg/l (LC50; 24 h)

EC50 Daphnia 1 > 10,000.00 mg/l (EC50; 24 h)

denatonium benzoate (3734-33-6)

LC50 fish 1 > 1,000.00 mg/l (LC50; 96 h; Salmo gairdneri)

EC50 Daphnia 1 13.00 mg/l (EC50; 48 h; Daphnia magna)

Persistence and degradability

Ethylene Glycol (107-21-1)

Persistence and degradability Readily biodegradable in water. Biodegradable in the soil.

Biochemical oxygen demand (BOD) 0.47 g O₂/g substance

Chemical oxygen demand (COD) 1.24 g O₂/g substance

ThOD 1.29 g O₂/g substance

BOD (% of ThOD) 0.36

Diethylene Glycol (111-46-6)

Persistence and degradability Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.

Photolysis in the air.

Biochemical oxygen demand (BOD) 0.02 g O₂/g substance

Chemical oxygen demand (COD) 1.51 g O₂/g substance

ThOD 1.51 g O₂/g substance

BOD (% of ThOD) 0.02

Bioaccumulative potential

Ethylene Glycol (107-21-1)

BCF fish 1 10.00 (BCF; 72 h)

BCF other aquatic organisms 1 0.21 - 0.6 (BCF)

BCF other aquatic organisms 2 190.00 (BCF; 24 h)

Log Pow -1.34 (Experimental value)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

Diethylene Glycol (111-46-6)

BCF fish 1 100.00 (BCF; Other; 3 days; Leuciscus melanotus; Static system; Fresh water; Experimental value)

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Log Pow -1.98 (Calculated; Other)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

Mobility in soil

Mobility: The product is miscible with water. May spread in water systems.

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal of the product

DISPOSAL AND WASTE TREATMENT: Avoid release to the environment. Provincial and/or federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition, or to the satisfaction of authorities. Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Canadian TDG (Transportation of Dangerous Goods):.NOT REGULATED

DOT (US)

UN Number: 3082

Class: 9

Packing Group: III

Proper Shipping Name: Environmentally hazardous substances, liquid, n.o.s.

Non Bulk: Not regulated by the US DOT in quantities under 5,000 lbs in any one inner package

IMDG: NOT REGULATED

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Product Name: ETHYLENE GLYCOL

Ship Type: 3

Pollution Category: Y

IATA: NOT REGULATED

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Massachusetts Right To Know Components

Chemical name: Ethylene glycol

CAS number: 107-21-1

New Jersey Right To Know Components

Common name: ETHYLENE GLYCOL

CAS number: 107-21-1



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Pennsylvania Right To Know Components

Chemical name: 1,2-Ethanediol

CAS number: 107-21-1

Canadian Domestic Substances List (DSL)

All ingredients are listed on the DSL/NDSL

Toxic Substances Control Act (TSCA) Inventory

All ingredients are listed on the TSCA inventory

California Prop. 65 Components

Known to the state to cause reproductive toxicity

SECTION 16: Other information

SDS Prepared By: Quality Assurance Department

Phone #: 905 846 2200

Preparation date: March 06, 2016

Revision #: First Issue

Disclaimer

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