Safety Data Sheet

Material Name: Flo-Perm Magnum Global 50/50 Pre-mix Antifreeze/Coolant **SDS ID: 87008**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Flo-Perm Magnum Global 50/50 Pre-mix Antifreeze/Coolant

Product Code

FP95XMG5X

Synonyms

None available.

Product Use

Antifreeze, coolant. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known.

MANUFACTURER

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Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with Schedule 1 of Canada's Hazardous Products Regulations (HPR) (SOR/2015-17) and paragraph (d) of 29 CFR 1910.1200 in the United States

Acute Toxicity - Oral - Category 4
Reproductive Toxicity - Category 2
Specific Target Organ Toxicity - Repeated Exposure - Category 2 (kidneys , liver)

GHS Label Elements

Symbol(s)

Signal Word

Warning

Hazard Statement(s)

Harmful if swallowed.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response

IF exposed or concerned: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
107-21-1	Ethylene glycol	50
7732-18-5	Water	<50
Mixture	Hydrated inorganic acid, organic acid salts	<5
111-46-6	Diethylene glycol	1-3

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

IF ON SKIN: Wash with plenty of soap and water. Get medical attention, if needed. Take off contaminated clothing and wash it before reuse.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Rinse mouth.

Most Important Symptoms/Effects

Acute

Harmful if swallowed.

Delayed

Causes reproductive effects, kidney damage, liver damage.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Ethylene glycol is metabolized by alcohol dehydrogenase to various metabolites including glycoaldehyde, glycolic acid, and oxalic acid. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, central nervous system depression, and kidney damage. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis, and prevention of kidney injury. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal when given in the early stages of intoxication because it blocks the formation of nephrotoxic metabolites. A more effective intravenous antidote is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenase, which effectively blocks the formation of toxic metabolites. Pulmonary edema with hypoxia has been described in a number of patients following ethylene glycol poisoning. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the later stages of toxicity from swallowing ethylene glycol. Effects have been reported presenting bilateral facial paralysis, diminished hearing, and dysphagia.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, alcohol-resistant foam, dry chemical, water spray, water fog. Water or foam may cause frothing.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Special Hazards Arising from the Chemical

Slight fire hazard. Avoid friction, static electricity and sparks.

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide, carbon dioxide, ketones, aldehydes.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Keep storage containers cool with water spray. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous.

Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin and clothing. Do not smoke while using this product.

Conditions for Safe Storage, Including any Incompatibilities

Store locked up.

Keep container tightly closed when not in use and during transport. Store in a cool, dry, well-ventilated area. Do not pressurize, cut, heat or weld containers. Empty product containers may contain product residue. Do not reuse empty containers.

Incompatible Materials

Acids, bases, oxidizing materials.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Ethylene glycol	**107-21-1**
Alberta	100 mg/m3 Ceiling
British Columbia	10 mg/m3 TWA particulate; 100 mg/m3 Ceiling aerosol ; 50 ppm Ceiling vapor 20 mg/m3 STEL particulate
Manitoba	25 ppm TWA vapor fraction
New Brunswick; Northwest Territories; Nunavut; Ontario; Saskatchewan	100 mg/m3 Ceiling aerosol
Nova Scotia; Prince Edward Island	25 ppm TWA vapor fraction; 50 ppm STEL vapor fraction ; 10 mg/m3 STEL inhalable particulate matter, aerosol only
Quebec	50 ppm Ceiling mist and vapor ; 127 mg/m3 Ceiling mist and vapor
Yukon	10 mg/m3 TWA particulate ; 100 ppm TWA vapor ; 250 mg/m3 TWA vapor 10 ppm STEL particulate ; 20 mg/m3 STEL particulate ; 125 ppm STEL vapor ; 325 mg/m3 STEL vapor
ACGIH:	25 ppm TWA vapor fraction; 50 ppm STEL vapor fraction ; 10 mg/m3 STEL inhalable particulate matter, aerosol only

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

Respiratory Protection

Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Glove Recommendations

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, gloves, and/or lab coat or apron.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to light yellow slightly viscous liquid	**Physical State**	Liquid
Odor	No characteristic odor	**Color**	Clear to light yellow
Odor Threshold	Not available	**pH**	7 - 9
Melting Point	Not available	**Boiling Point**	107 °C
Boiling Point Range	Not available	**Freezing point**	-37 °C
Evaporation Rate	Not available	**Flammability (solid, gas)**	Not available
Autoignition Temperature	Not available	**Flash Point**	111 °C (232 °F Ethylene glycol)
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	Not available
Vapor Density (air=1)	Not available	**Specific Gravity (water=1)**	Not available
Water Solubility	100 %	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not available	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	1.05 - 1.1

Physical Form	Liquid	**Molecular Weight**	Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability
Stable under normal temperatures and pressures.
Possibility of Hazardous Reactions
Will not polymerize.
Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
Incompatible Materials
Acids, bases, oxidizing materials.
Hazardous decomposition products
Carbon monoxide, carbon dioxide, ketones, aldehydes.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
May cause kidney damage, liver damage.
Skin Contact
May cause skin irritation.
Eye Contact
May cause eye irritation.
Ingestion
Harmful if swallowed. May cause vomiting and nausea.
Acute and Chronic Toxicity
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Ethylene glycol (107-21-1)
Oral LD50 Rat 4700 mg/kg; Dermal LD50 Rat 10600 mg/kg
Water (7732-18-5)
Oral LD50 Rat >90 mL/kg
Diethylene glycol (111-46-6)
Oral LD50 Rat 12565 mg/kg; Dermal LD50 Rabbit 11890 mg/kg; Inhalation LC50 Rat >4600 mg/m3 4 h
Product Toxicity Data
Acute Toxicity Estimate

Dermal	> 2000 mg/kg
Inhalation - Vapor	> 20 mg/L
Oral	> 2000 mg/kg

Immediate Effects
Harmful if swallowed.
Delayed Effects
Causes Reproductive Effects, kidney damage, liver damage.

Irritation/Corrosivity Data
May cause skin irritation. May cause eye irritation.

Respiratory Sensitization
No information available for the product.

Dermal Sensitization
No information available for the product.

Component Carcinogenicity

Ethylene glycol	**107-21-1**
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

Germ Cell Mutagenicity
No information available for the product.

Tumorigenic Data
No information available for the product.

Reproductive Toxicity
Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure
Kidneys, liver.

Aspiration hazard
No information available for the product.

Medical Conditions Aggravated by Exposure
No information available for the product.

Additional Data
No additional information is available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Ethylene glycol	**107-21-1**
Fish:	LC50 96 h Oncorhynchus mykiss 41000 mg/L; LC50 96 h Oncorhynchus mykiss 14 - 18 mL/L [static]; LC50 96 h Lepomis macrochirus 27540 mg/L [static]; LC50 96 h Oncorhynchus mykiss 40761 mg/L [static]; LC50 96 h Pimephales promelas 40000 - 60000 mg/L [static]; LC50 96 h Poecilia reticulata 16000 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata 6500 - 13000 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 46300 mg/L IUCLID
Diethylene glycol	**111-46-6**
Fish:	LC50 96 h Pimephales promelas 75200 mg/L [flow-through]
Invertebrate:	EC50 48 h Daphnia magna 84000 mg/L IUCLID

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Vulsay regarding proper recycling or disposal.

Section 14 - TRANSPORT INFORMATION

US DOT Information: Not regulated for transport.
IATA Information: Not regulated for transport.
IMDG Information: Not regulated for transport.
TDG Information: Not regulated for transport.

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Ethylene glycol	**107-21-1**
IBC Code:	Category Y

Section 15 - REGULATORY INFORMATION

Canada Regulations

CEPA - Priority Substances List

Ethylene glycol	**107-21-1**
	Priority Substance List 2 (substance not considered toxic)

Ozone Depleting Substances

None of this product's components are on the list.

Council of Ministers of the Environment - Soil Quality Guidelines

Ethylene glycol	**107-21-1**
Residential and Parkland	960 mg/kg (dry weight)

Council of Ministers of the Environment - Water Quality Guidelines

None of this product's components are on the list.

Further information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR. D2A, D2B.

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Ethylene glycol	**107-21-1**

SARA 313:	1 % de minimis concentration
CERCLA:	5000 lb final RQ ; 2270 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C) 2016 reporting categories
Acute Health: Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactivity:** No

Component Analysis - Inventory

Ethylene glycol (107-21-1); Diethylene glycol (111-46-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Water (7732-18-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Hydrated inorganic acid, organic acid salts (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and

New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Vulsay assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.