



Dynaflux SDS 927B 04/11/2014

Safety Data Sheet

Product: 927 Defense™ Coolant Anti-Freeze with Ethylene Glycol

Part 1: Identification of the Substance/Mixture and of the Company/Undertaking.

Identification 927B

Product Use Description: Anti-Freeze and Pump Lubricant for closed loop heat exchanger.

Trade Name: 927 Defense™ Coolant Anti-Freeze with Ethylene Glycol

Manufacturers Name: Dynaflux, Inc.

241 Brown Farm Rd.

Cartersville, GA 30120 U.S.A.

Emergency Telephone Number: For U.S.: 800-255-3924 International: 813-248-0585

Part 2: Hazards Identification

Signal word: Warning

Hazard statement(s)

H302 Harmful if swallowed.

Emergency Overview

Appearance: liquid, green translucent

WARNING! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. HARMFUL IF SWALLOWED. MAY CAUSE EYE IRRITATION.

Potential Health Effects**Exposure routes**

Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness and swelling of eyes.

Skin contact

May cause mild skin irritation. Symptoms may include redness and burning of skin.

Ingestion

Swallowing this material may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions), Liver, Kidney, Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemia.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), cough, central nervous system excitation (giddiness, liveliness, lightheaded feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, involuntary eye movement, lung edema (fluid buildup in the lung tissue), acute kidney failure (sudden slowing or stopping of urine production), liver damage, convulsions, coma.

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: reproductive effects, kidney damage, and liver damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: kidney damage, liver damage.

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the national Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

Ethylene glycol has caused birth defects in animal studies at high oral doses. However, it did not cause harm to the pregnant animal or to the fetus when applied to the skin of the pregnant animal.

Part 3: Composition / Information on Ingredients

Hazardous Components	CAS No.	Concentration
ETHYLENE GLYCOL	107-21-1	<=100%

Part 4: First Aid Measures**Eyes**

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention. **GHS Category 2B**

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse. **GHS Category 3**

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended. **GHS Category 4**

Notes to physician

Hazards: Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnea, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final state occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

Treatment: This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

Part 5: Fire Fighting Measures

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO₂), Water spray

Hazardous combustion products

Alcohols, Aldehydes, carbon dioxide and carbon monoxide, ethers, toxic fumes

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class III B

Part 6: Accidental Release Measures

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other Information

Comply with all applicable federal, state and local regulations.

Part 7: Handling and Storage

Handling

Conditions of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Warning: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignitions without the presence of obvious ignition sources. Published "auto ignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Storage

Store in a cool, dry, ventilated area.

Part 8: Exposure Controls / Personal Protection

Exposure Guidelines

ETHYLENE GLYCOL 107-21-1

ACGIH Ceiling Limit Value: 100 mg/m³

General Advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye Protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection

Wear appropriate chemical impervious clothing and boots whenever there is potential for skin contact with product. Launder clothing before reuse. Maintain safety shower at all locations where skin contact could occur. Wear resistant gloves such as: Natural Rubber, Neoprene, polyethylene, polyvinyl alcohol, Polyvinyl chloride. Discard gloves that show tears, pinholes or signs of wear.

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Part 9: Physical and Chemical Properties

Melting Point/range	9°F / - 13°C
Sublimation point	no data available
pH	no data available
Flash point	232 °F / 111 °C Closed cup
Evaporate rate	(<) 1.00 n-Butyl Acetate
Lower explosion limit/Upper explosion limit	3.2%(V) / 15.3%(V)
Particle size	no data available
Vapor pressure	0.012 kPa @ 77°F / 25°C
Relative vapor density	2.14 AIR=1
Density	1.114g/cm ³ @ 68.00°F / 20.00 °C
	9.28 lb/gal @ 68°F / 20°C
Bulk density	no data available
Water solubility	completely soluble
Solubility's	no data available
Partition coefficient: n-octanol/water	no data available
Auto ignition temperature	748°F / 398°C

Viscosity, dynamic	17.3 mPa.s @ 25°C
Viscosity, kinematic	no data available
Solids in Solution	no data available
Decomposition temperature	no data available

Part 10: Stability and Reactivity

Stability

Stable

Conditions to avoid

Excessive heat, exposure to moisture.

Incompatible products

Alkali metals, alkaline earth metals, aluminum, strong acids, strong alkalis, strong oxidizing agents sulphur compounds.

Hazardous decomposition products

Carbon dioxide and carbon monoxide, aldehydes, ketones, organic acids.

Hazardous Reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

Part 11. Toxicological Information

Acute oral toxicity LD 50 Rat: 6,140 mg/kg

Acute inhalation toxicity no data available
ETHYLENE GLYCOL

Acute dermal toxicity LD 50 Rabbit: 9,530 mg/kg

Part 12. Ecological Information

Elimination information (persistence and degradability)

Biodegradability Result: Readily biodegradable

Bioaccumulation Species: Crayfish (Procambarus)
ETHYLENE GLYCOL Exposure time: 61 d
Dose: 1,000 mg/l
Bioconcentration factor (BCF): 0.27
Method: Flow through

Ecotoxicity effects

Toxicity to fish

ETHYLENE GLYCOL 96 H lc 50 Bluegill (*Lepomis macrochirus*): 27,540.00 mg/l Method: Static; Mortality
96 h LC 50 Fathead minnow (*Pimephales promelas*): 8,050.00 mg/l; Mortality

Toxicity to daphnia and other aquatic invertebrates

ETHYLENE GLYCOL 48 h LC 50 Water flea (Daphnia magna): > 10,000.00 mg/l Method: Static Mortality

Part 13. Disposal Considerations**Waste disposal methods**

Destroy by liquid incineration in accordance with applicable regulations.

Part 14. Transport Information**Regulation**

ID NUMBER	PROPER SHIPPING NAME	HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD QTY
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U.S. DOT-ROAD

Not dangerous goods

U.S. DOT-RAIL

Not dangerous goods

U.S. DOT-INLAND WATERWAYS

Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

TRANSPORT CANADA- RAIL

Not dangerous goods

TRANSPORT CANADA-INLAND WATERWAYS

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION-CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION-PASSENGER

Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

**ORM=ORM-D, CBL=COMBUSTIBLE
LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment

Part 15. Regulatory Information

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SARA Hazard Classification

Acute Health Hazard

Chronic Health Hazard

SARA 313 Component(s)

ETHYLENE GLYCOL 100%

New Jersey RTK Label Information

ETHYLENE GLYCOL 107-21-1

Pennsylvania RTK Label Information

ETHYLENE GLYCOL 107-21-1

Reportable quantity-Components

ETHYLENE GLYCOL 107-21-1 5000 lbs

	HMIS	NFPA
Health	2	1
Flammability	1	1
Physical Hazards	0	
Instability		0
Specific Hazard	--	--

Part 16. Other Information

Dynaflux, Inc.

241 Brown Farm Rd.

Cartersville, GA 30120

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Disclaimer of Expressed and implied Warranties:

The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date of the Safety Data Sheet was prepared. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices as specified on the label copy.