

MATERIAL SAFETY DATA SHEET: EG400**1. PRODUCT INFORMATION:**

PRODUCT NAME: EG400	PRODUCT USE: Heat Transfer Fluid. Ethylene Glycol, uninhibited.
MANUFACTURER/SUPPLIER: Vedra Industries, 6295 Northam Dr., Unit 16, Mississauga, Ontario, Canada L4V-1W8	EMERGENCY TELEPHONE NUMBER: 877-211-6727 or CANUTEC 613-996-6666.

2. PREPARATION INFORMATION:

MSDS PREPARED BY: Vedra Industries	DATE PREPARED: Oct. 25, 2005 (M/D/Y)
TELEPHONE: 877-211-6727	SUPERSEDES:

3. HAZARDOUS INGREDIENTS

INGREDIENT	CHEMICAL NAME	CAS REGISTRY NO.	% BY WT.
1	Ethylene Glycol	107-21-1	99 – 100%

INGREDIENT	ACUTE ORAL LD50 (mg/kg)	ACUTE DERMAL LD50 (mg/kg)	ACUTE INHALATION LC50 (ppm)	TLV
1	4700 (rat)	9530 (rabbit)	Not available	No data

The balance of the components are not hazardous according to WHMIS classifications and are not listed on the Ingredient Disclosure List.

4. PHYSICAL DATA:

APPEARANCE: Clear, colorless, oily liquid	PHYSICAL STATE: Liquid	ODOUR: None	ODOUR THRESHOLD: None, odourless
DENSITY (g/ml @ 25°C): 1.1	EVAPORATION RATE: No data	VAPOUR DENSITY: 2.14 (air=1)	VAPOUR PRESSURE @ 20 °C: 0.06 mmHg
pH (neat): Not tested	pH (1000 ppm in water) Not tested	BOILING POINT: 176°C	FREEZING /MELTING POINT: -13 °C
OIL/WATER PARTITION COEFFICIENT: Not tested		SOLUBILITY: Completely soluble in water.	

5. FIRE AND EXPLOSION HAZARDS:

FLASH POINT & METHOD: 111°C (closed cup)	AUTO-IGNITION TEMPERATURE: 398°C
UPPER FLAMMABLE LIMIT (% vol. in air): 15.3%	LOWER FLAMMABLE LIMIT (% vol. in air): 3.2
FLAMMABILITY CONDITIONS: Slight to moderate fire hazard when exposed to heat or flame.	HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, Oxides of nitrogen
EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.	SPECIAL FIRE FIGHTING PROCEDURES: Firefighters must wear SCBA. Wear NIOSH approved self-contained breathing apparatus (such as "Scott Air-Pak"), and full protective gear. Isolate "fuel" supply from fire.
EXPLOSION (Sensitivity to Mechanical Impact): Not sensitive	EXPLOSION (Sensitivity to Static Discharge): Not sensitive

6. REACTIVITY:

CHEMICAL STABILITY: Stable, will not polymerize	CONDITIONS OF UNSTABILITY: Extreme temperatures
INCOMPATIBILITY WITH OTHER SUBSTANCES: Strong acids	HAZARDOUS DECOMPOSITION PRODUCTS: None known.

7. TOXICOLOGICAL DATA:
PRIMARY ROUTES OF EXPOSURE:

EYES: Yes	SKIN: Yes	INHALATION: Yes	INGESTION: Yes
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EFFECTS FROM ACUTE EXPOSURE:

Eye exposure:	Splashes may cause irritation, pain, eye damage.
Skin exposure:	Minor skin irritation and penetration may occur.
Inhalation:	Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.
Ingestion:	Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).

Note to Physician:

Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxalate, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

EFFECTS FROM CHRONIC EXPOSURE:

The effects from chronic exposure to this product have not been fully evaluated.

ACUTE EFFECTS (Exposure Limits):

Acute Oral LD50:	18,300 mg/kg (oral, guinea pig)
Acute Dermal LD50:	21,000 mg/kg (skin, rabbit)
Acute Inhalation LC50:	No data available.
IRRITANT EFFECTS:	Concentrated water solutions, held against the skin, are reported to irritate
SENSITIZATION EFFECTS:	None known.
CARCINOGENIC POTENTIAL:	Not listed in any of OSHA Standards Section 1910.1200 sources as carcinogenic.
REPRODUCTIVE TOXICITY:	None known.
TERATOGENICITY:	Has shown teratogenic effects in laboratory animals.
MUTAGENICITY:	None known.
SYNERGISTIC EFFECTS:	None known.

8. PERSONAL PROTECTION EQUIPMENT:

Hands: Chemical resistant gloves recommended.

Eyes: Chemical-proof goggles or face shield recommended.

Respiratory: If misting can occur, a NIOSH approved respirator is recommended.

Body Protective Clothing: None required

Footwear: Steel-toed chemical resistant boots recommended.

Other: An emergency shower complete with eyewash fountain is recommended.

ENGINEERING CONTROLS:

General mechanical ventilation system is adequate. However, local exhaust system is preferred to maintain airborne concentrations below the recommended occupational exposure limits, whenever misting conditions are present or the material is used in a confined space.

LEAK AND SPILL PROCEDURES:

Before responding to a spill or leak of this product, review each section of this MSDS. Follow the recommendations given in the "Handling Procedures and Equipment" section. Check the "Fire and Explosion Hazards" section to determine if the use of non-sparking tools is merited. Insure that spilled or leaked product does not come into contact with materials listed as incompatible. If irritating fumes are present, consider evacuation of affected areas. Initially minimize area affected by the spill or leak. Block any potential routes to water systems. Place in a properly labeled container for later disposal. Larger spills may require a vacuum.

WASTE DISPOSAL METHODS:

Disposal shall be in accordance with all applicable federal, provincial and municipal waste regulations.

HANDLING PROCEDURES AND EQUIPMENT:

Do not handle unless the safety precautions have been read and understood. Avoid skin and eye contact. Avoid inhalation of dust or vapours. Do not puncture, drag or slide containers. Do not smoke in any chemical handling or storage area. Wash hands before eating.

STORAGE REQUIREMENTS:

Store in a dry well-ventilated location. Protect from freezing. Keep containers tightly closed. Store away from incompatible materials and ignition sources

SPECIAL SHIPPING INFORMATION:

Refer to Section 10: T.D.G. Classification

9. FIRST AID MEASURES:**EYE EXPOSURE:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

SKIN EXPOSURE:

Wash with soap and plenty of water for 15 minutes. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

INGESTION:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

10. REGULATORY CLASSIFICATIONS:

TDG CLASSIFICATION: Not Regulated

Pest Control Products Act: REGISTRATION NUMBER: Not applicable.

U.S. FDA REGULATIONS: FDA (21 CFR) Section(s):

Not determined

WHMIS CLASSIFICATION: D-2A: Material causing other toxic effects (very toxic).

DOMESTIC SUBSTANCES LIST (DSL):

All Components are listed on the DSL or otherwise comply with the Canadian Environmental Protection Act (CEPA) new substance notification requirements.

HAZARD RATING:

RATING	HEALTH	FLAMMABILITY	REACTIVITY
WHMIS	1	1	0
NFPA	1	1	0

While the information and recommendations set forth are believed to be accurate as of the date of the Material Safety Data Sheet, Vedra Industries makes no warranty with respect thereto and disclaims all liability from reliance thereon. Vedra Industries urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. To promote the safe use and handling of this product, each customer or recipient should distribute this MSDS to the product users.

Issued by Laboratory Services, Vedra Industries, 6295 Northam Dr., Unit 16,
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