

G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME ----> G.J. THERM HEAT TRANSFER FLUID

PRODUCT NUMBER(S)--> 166800

TRADE NAMES AND SYNONYMS ----> Heat Transfer Fluid, HTF

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Heat Transfer Fluid for use in closed heating and air conditioning systems.

USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: G.J. CHEMICAL CO., INC.

**Address: 40 VERONICA AVENUE
SOMERSET, NJ 08873**

Telephone: 1-973-589-1450

Fax: 1-973-589-3072

1.4 Emergency Telephone Number

Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Acute Toxicity Oral (Category 4), H302

Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS07 GHS08

Signal word: **WARNING**

Hazard statement(s)

H302 Harmful if swallowed.

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P314 Get medical advice/ attention if you feel unwell.

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. INGREDIENTS

3.2 Mixture

Ingredient	CAS No.	% by WT.	CLASSIFICATION
Ethylene Glycol EC-No.203-473-3 Index No.603-027-00-1 Reg.-No.01-2119456816-28-XXXX	107-21-1	92-94	Acute Toxicity Oral (Category 4), H304 STOT-RE Oral (Category 2), Kidney, H373
Diethylene Glycol EC-No.203-872-2 Index No. 603-140-00-6 Reg. No. 01-2119457857-21-XXXX	111-46-6	2-4	Acute toxicity, Oral (Category 4), H304 STOT-RE, Oral (Category 2), Kidney, H373
Dipotassium Phosphate EC-No.231-834-5 Reg.-No. 01-2119493919-15-XXXX	7758-11-4	1.5-3	Not a hazardous substance or mixture.
Water EC-No.231-791-2	7732-18-5	2-4	Not a hazardous substance or mixture.

Sodium 2-mercaptobenzothiazole	2492-26-4	0.2-0.4	Corrosive to Metals, (Category 1), H290 Skin Corrosion, (Category 1B), H314 Skin Sensitizer, (Category 1), H317
Reg.-No. 01-2119493018-35-XXXX	EC-No.219-660-8		

4. FIRST-AID PROCEDURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: G.J. Therm

****FIRST AID- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.**

SKIN CONTACT: G.J. Therm

****FIRST AID- Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.**

EYE CONTACT: G.J. Therm

****FIRST AID- Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Remove contact lenses, if worn, after initial flush. Consult a physician if irritation persists.**

INGESTION: G.J. Therm

****FIRST AID- Do not induce vomiting. Never give anything by mouth to an unconscious person. Have patient drink several glasses of water. Consult a physician or poison control center, treat symptomatically.**

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Eye: Vapors and mists are mildly irritating; Splashes may cause irritation, pain and eye damage.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Inhalation: If heated or sprayed concentrations may be attained that are sufficient to cause irritation to the upper respiratory tract. May cause nausea, vomiting, dizziness and drowsiness. 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 100ml (3-4 ounces)

Chronic Exposure: Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur.

Medical Conditions Aggravated by Exposure: Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Notes to Physician: For Ethylene Glycol, 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.

5. FIRE FIGHTING MEASURES

Flash Point: 111°C (232°F)

LEL %:3.2 (V)

Auto-ignition Temp. in air 400°C (752°F)

UEL %:15.3 (V)

UNIFORM FIRE CODE: Combustible Liquid: III-B

5.1 SUITABLE EXTINGUISHING MEDIA: Foam--> x CO2--> x Dry Chemical-->
x Water-fog--> x Other-->

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Keep containers tightly closed. Isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat.

Sensitivity to Mechanical Impact: No

Sensitivity to Static Discharge: No

CONDITIONS OF FLAMMABILITY: Combustible in the presence of a source of ignition when the temperature is above the flash point.

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides

5.3 ADVICE FOR FIREFIGHTERS: Shut off source. Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind Do not spray pool fires directly. A solid stream of water or foam directed into hot burning liquid can cause frothing. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Cool containers with flooding amounts of water from as far a distance as possible. Wear NIOSH/MSHA approved self-contained positive pressure breathing apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations.

6.2 ENVIRONMENTAL PRECAUTIONS:

Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Methods for cleanup and containment:

Use explosion proof equipment. Shut off valves, contain spill, for small spills add non-flammable absorbent in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.

Methods for disposal:

Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations. Keep all nonessential people away.

REPORTABLE QUANTITY (RQ): 5000lbs. – Ethylene Glycol; Blend – 5376lbs.

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not take internally. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Recommended storage temperature: 15 - 25°C. Store large quantities only in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not store with incompatible materials. Keep containers closed when not in use. Storage class (TRGS 510): 10: Combustible liquids

CONTAINER WARNINGS: Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT.	CLASSIFICATION
Ethylene Glycol	107-21-1	92-94	25ppm TWA (ACGIH)
	EC-No.203-473-3		50ppm STEL (ACGIH)
	Index No.603-027-00-1		50ppm TWA (OSHA)
	Reg.-No.01-2119456816-28-XXXX		(Ceiling)

Diethylene Glycol EC-No.203-872-2 Index No. 603-140-00-6 Reg. No. 01-2119457857-21-XXXX	111-46-6	2-4	10ppm TWA (WEEL)
Dipotassium Phosphate EC-No.231-834-5 Reg.-No. 01-2119493919-15-XXXX	7758-11-4	1.5-3	Contains no substances with occupational exposure limits.
Water EC-No.231-791-2	7732-18-5	2-4	Contains no substances with occupational exposure limits.
Sodium 2-mercaptobenzothiazole EC-No.219-660-8 Reg.-No. 01-2119493018-35-XXXX	2492-26-4	0.2-0.4	N.E.

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

Atmospheric levels should be maintained below the exposure limit. For vapor concentrations 1 to 10 times ACGIH TWA use an air purifying NIOSH/MSHA Approved respirator with full face-piece and organic vapor cartridges. For concentrations over 10 times ACGIH TWA, in confined areas, and/or where vapor concentrations are unknown use a NIOSH/MSHA approved positive pressure full face-piece supplied air respirator (SCBA).

BODY CLOTHING: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance. Use chemical resistant apron or other impervious clothing. Remove

and wash contaminated clothing before reuse.

SKIN PROTECTION: Employee must wear appropriate protective gloves to prevent contact with this substance.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION: Use safety eyewear with splash guards or face shield. Emergency shower and eyewash should be easily accessible to the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

G.J. Therm HTF

APPEARANCE:

Clear oily liquid

COLOR:

Colorless, may be tinted to a color

ODOR:

No distinct odor.

ODOR THRESHOLD:

No data available

pH:

No data available

MOLECULAR WEIGHT:

No data available

MELTING POINT:

-13°C (9°F)

BOILING POINT:

196 - 198°C (385 - 388°F)

SPECIFIC GRAVITY:

1.129@20°C

DENSITY (25°C):

1.113 g/ml @25°C

VAPOR PRESSURE:

0.06 mm Hg @ 20°C (68.0°F)

VAPOR DENSITY:

2.14

WATER SOLUBILITY:

Complete

PARTITION COEFFICIENT N-

No data available

OCTANOL/WATER

FLASH POINT:

111°C (232°F) - closed cup

EVAPORATION RATE (BUTYL ACETATE=1): 1

UPPER FLAMMABILITY LIMIT:

15.3% (V)

LOWER FLAMMABILITY LIMIT:

3.2% (V)

AUTO IGNITION TEMPERATURE:

400°C (752°F) in air

DECOMPOSITION TEMPERATURE:

No data available

VISCOSITY:

No data available

EXPLOSIVE PROPERTIES:

No data available

OXIDIZING PROPERTIES:

No data available

9.2 OTHER INFORMATION:

No data available

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: Vapors may form flammable mixtures with air.

HAZARDOUS POLYMERIZATION: May occur () Will not occur (X)

10.4 CONDITIONS TO AVOID: Heat, Sparks, and Open Flame.

10.5 INCOMPATIBLE MATERIALS: Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. hydrochloric acid hydrogen peroxide.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: From fire: Fumes, Smoke, Carbon Monoxide and Carbon Dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x Eye--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Vapors and mists are mildly irritating; Splashes may cause irritation, pain and eye damage.

Skin> May be harmful if absorbed through skin. Causes skin irritation.

Inhalation> If heated or sprayed concentrations may be attained that are sufficient to cause irritation to the upper respiratory tract. May cause nausea, vomiting, dizziness and drowsiness. 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
100ml (3-4 ounces)

Chronic Exposure: Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur.

Medical Conditions Aggravated by Exposure> Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

ACUTE TOXICITY:

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50 (Rat)	Skin LD50 (Rabbit)	Inhalation LC50
Ethylene Glycol	4700mg/kg	10626mg/kg	1460ppm/4hr
Diethylene Glycol	12500mg/kg	12000mg/kg	
Dipotassium Phosphate	No data available		
Water	No data available		
Sodium Mercapto benzothiazole	5200mg/kg	>5010mg/kg	>6.5mg/L/6hr

ETHYLENE GLYCOL

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: No skin irritation

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Mild eye irritation - 24 h

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No information available.

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ethylene Glycol did not cause cancer in long-term animal studies.

REPRODUCTIVE TOXICITY: Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: Oral - May cause damage to organs through prolonged or repeated exposure. - Kidney

11.2 ADDITIONAL DATA: Observations in animals include kidney and liver effects and deposition of calcium salts in various tissues after long-term dietary intake of ethylene glycol.

DIETHYLENE GLYCOL

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: No skin irritation

Remarks: (IUCLID)

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: No eye irritation
Remarks: (IUCLID)
RESPIRATORY OR SKIN SENSITIZATION: Maximization Test - Guinea pig Result:
negative (OECD Test Guideline 406)
MUTAGENIC EFFECTS:
Ames test Escherichia coli/Salmonella typhimurium Result: negative OECD Test
Guideline 474
Mouse - male - Bone marrow Result: negative OECD Test Guideline 474
Mouse - male - Bone marrow Result: negative

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to
0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to
0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to
0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Based on long-term animal studies, diethylene glycol, is not believed to pose a
carcinogenic risk to man.

REPRODUCTIVE TOXICITY: No data available.

**Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized
System)** no data available

**Specific target organ toxicity (STOT-RE) - repeated exposure (Globally
Harmonized System)** May cause damage to organs through prolonged or
repeated exposure. Oral - Kidney

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL DATA: No data available

DIPOTASSIUM PHOSPHATE

SKIN CORROSION/IRRITATION: No data available.

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available.

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No data available

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to
0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to
0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to
0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

**Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized
System):** no data available

**Specific target organ toxicity (STOT-RE) - repeated exposure (Globally
Harmonized System):** no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL DATA: No data available

WATER

SKIN CORROSION/IRRITATION: No data available.

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available.

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No data available

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL DATA: No data available

SODIUM 2-MERCAPTOBENZOTHIAZOLE

SKIN CORROSION/IRRITATION: Rabbit patch tests showed visible tissue destruction 4, 24 and 48 hours after application. The material was considered corrosive to the skin under the conditions of the test.

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available.

RESPIRATORY OR SKIN SENSITIZATION: No data available

MUTAGENIC EFFECTS: Ames test; Result: Negative

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL DATA: No data available

12. ECOLOGICAL INFORMATION

There is no information available on this blend.

ETHYLENE GLYCOL

12.1 AQUATIC TOXICITY (Acute):

Toxicity to fish:

LC50 - *Oncorhynchus mykiss* (rainbow trout) - 18,500 mg/l - 96 h

LC50 - *Leuciscus idus* (Golden orfe) - > 10,000 mg/l - 48 h

LC50 96-hour fish are over 100mg/L.

NOEC - *Pimephales promelas* (fathead minnow) - 32,000 mg/l - 7 d

NOEC - *Pimephales promelas* (fathead minnow) - 39,140 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 74,000 mg/l - 24 h

NOEC - Daphnia - 24,000 mg/l - 48 h

LC50 - Daphnia magna (Water flea) - 41,000 mg/l - 48 h

12.2 PERSISTANCE AND DEGRADABILITY:

For Ethylene Glycol when released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into ground water. When released into the water, this material is expected to readily biodegrade. When released into the water this material is expected to have a half-life between 1 and 10 days.

12.3 BIOACCUMULATIVE POTENTIAL: This material is not expected to bioaccumulate. Ethylene Glycol has a log octanol water partition coefficient of log Pow -1.36. When release into the air, this material, is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.

Bioconcentration Factor (BCF): 0.6

12.4 MOBILITY IN SOIL: No data available

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available

DIETHYLENE GLYCOL

12.1 ACUTE AQUATIC TOXICITY:

Toxicity to Fish:

LC50 Gambusia affinis (Mosquitofish) >32,000 mg/L 96 h

Toxicity to aquatic invertebrates:

LC50 Daphnia Magna (Water flea) >10,000 mg/L 24 h

Toxicity to algae:

EC50 Scenedesmus quadricauda (Green algae) 2700 mg/L 7 d

Toxicity to bacteria:

EC20 Activated sludge >1995mg/L – 0.5 h static test

12.2 PERSISTANCE AND DEGRADABILITY:

anaerobic - Exposure time 28 d

Result: >90% - Readily biodegradable.

(OECD Test Guideline 301A)

Biological Oxygen Demand (BOD): BOD 28-day 50-60% theoretical BOD

12.3 BIOACCUMULATIVE POTENTIAL:

Octanol/Water Partition Coefficient: log Pow: -2.0

Bio-concentration Factor (BCF): 100

Does not significantly accumulate in organisms.

12.4 MOBILITY IN SOIL: No data available

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Slightly hazardous to water.

DIPOTASSIUM PHOSPHATE

12.1 AQUATIC TOXICITY (Acute):

DIPOTASSIUM PHOSPHATE

No data available

12.2 PERSISTENCE AND DEGRADABILITY: No data available

12.3 BIOLOGICAL OXYGEN DEMAND (BOD): No data available

12.3 BIOACCUMULATIVE POTENTIAL: Octanol/Water Partition Coefficient: No data available

Bio-concentration Factor (BCF): No data available

12.4 MOBILITY IN SOIL:

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available

SODIUM 2-MERCAPTOBENZOTHAZOLE

12.1 AQUATIC TOXICITY:

Toxicity to Fish:

LC50 *Oncorhynchus mykiss* (rainbow trout) - 0.73ppm 96 h flow through test

Toxicity to daphnia and other aquatic invertebrates:

EC50 - *Daphnia magna* (Water flea) – 2.9ppm - 48 h Immobilization

Toxicity to algae:

EC50 - *Selenastrum capricornutum* (green algae) - 0.4 mg/l - 72 h Growth inhibition

12.2 PERSISTENCE AND DEGRADABILITY: Biotic/Aerobic - Exposure time 28 d
Result: < 1 % - Not readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL: *Cyprinus carpio* (Carp) - 42 d at 25 °C - 0.1 mg/l; log Pow -0.46 The potential is low for bio-accumulation.

Bio-concentration Factor (BCF): No data available

12.4 MOBILITY IN SOIL: No data available.

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate under controlled conditions in a permitted facility.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or

alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

Land Transport (DOT)

- 14.1 USDOT ID Number-----> UN 3082
- 14.2 USDOT Shipping Name-----> Environmentally hazardous substances,
liquid, n.o.s. (Ethylene glycol)
- 14.3 USDOT Hazard Classification-----> 9
USDOT Label Codes-----> 9
- 14.4 USDOT Package Code-----> III
- 14.5 Environmental hazard-----> None
- 14.6 Special precautions for user-----> No
Emergency Response Guide-----> 171
Reportable Quantity-----> 5376lbs – Blend (calculated)

Sea Transport (IMDG)

- 14.1 ID Number----->
- 14.2 Proper shipping name-----> Not dangerous goods
- 14.3 Hazard Classification----->
Label Codes----->
- 14.4 Package Code----->
- 14.5 Marine Pollutant----->
- 14.6 Special precautions for user----->
EMS-Number----->

Air Transport (IATA)

- 14.1 ID Number-----> Not dangerous goods
- 14.2 Proper shipping name----->
- 14.3 Hazard Classification----->
Label Codes----->
- 14.4 Package Code----->
- 14.5 Environmental hazard----->

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed Ethylene Glycol CAS 107-21-1

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed

Ethylene glycol CAS-No.107-21-1; Reportable Quantity – 5000lbs; Blend 5376lbs. (calculated)

SECTION 101(14) Reportable Quantity: Ethylene Glycol CAS-No.107-21-1- 5000lbs. Blend – 5376lbs. (calculated)

Massachusetts Right to Know Components

Ethylene glycol CAS-No.107-21-1

Pennsylvania Right to Know Components

Ethylene glycol CAS-No.107-21-1

Diethylene glycol CAS-No.111-46-6

Dipotassium hydrogen orthophosphate CAS-No. 7758-11-4

Water CAS 7732-18-5

New Jersey Right to Know Components

Ethylene glycol CAS-No.107-21-1

Diethylene glycol CAS-No.111-46-6

Dipotassium hydrogen orthophosphate CAS-No. 7758-11-4

Water CAS 7732-18-5

California Prop. 65 Components

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

TSCA (Toxic Substance Control Act)

Ethylene Glycol CAS 107-21-1, Diethylene glycol CAS-No.111-46-6, Dipotassium Phosphate CAS 7758-11-4, Water CAS 7732-18-5 and Sodium 2-Mercaptobenzothiazole CAS 2492-26-4 are listed on the TSCA Inventory.

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has not been carried out for this mixture.

16. OTHER INFORMATION:

HMIS (Hazardous Materials Identification System)

Hazard Rating:

4-Extreme

3-High

2-Moderate

1-Slight

0-Insignificant

NFPA RATINGS (SCALE 0-4): Health=2 Fire=1 Reactivity=0

HMIS RATINGS (SCALE 0-4) Health=2 Fire=1 Reactivity=0

Hazard statement(s) from Section 2 and 3:

H302 Harmful if swallowed.

H316 Causes mild skin irritation.

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Date of preparation-----> February 24, 2005

Revision Number-----> 1.6

Revision Content-----> General update all sections

Revision Date-----> February 13, 2019

Prepared by-----> T.G. Fenstermaker Jr.

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygienists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American Nation Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System

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