

## SAFETY DATA SHEET

### 1. Product Identification

Manufacturer or supplier's detail:

ASTM Test Monitoring Center (TMC)

6555 Penn Avenue

Pittsburgh, PA 15206 USA

412-365-1000

Email address for further information: GHS-sds@astmtmc.cmu.edu

USA emergency telephone number: 1-800-424-9300 Ext. 3905

International emergency telephone number: +1 202-366-4488

CHEMTREC Customer Number CCN3905

### EMERGENCY OVERVIEW:

**Product Description:** This product is a fluorescent green liquid with no odor.

**Health Hazards:** Product may cause irritation to eyes, respiratory tract and skin. Harmful if swallowed.

**Flammability Hazards:** Non-Flammable liquid with a flash point greater than >232°F (>111°C).

**Reactivity Hazards:** Non-reactive

**Environmental Hazards:** The environmental effects of this product have not been investigated, however release of a significant amount may have adverse environmental effects.

**Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

### GHS LABELING AND CLASSIFICATION:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 AND the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

### EU HAZARD CLASSIFICATION PER DIRECTIVE 1272/2008/EC:

**Index Number:**

**EC# 203-473-3 Annex VI Index# 603-027-00-1**

**EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC**

**Substances not listed either individually or in group entries must be self classified.**

**Component(s) Determining Hazards:**

Ethylene Glycol

### GHS Classifications:

Acute Oral Toxicity Category 4

Eye Irritation Category 2

Single Target Organ Toxicity Category, single exposure, Category 2

Single Target Organ Toxicity Category, repeated exposure, Category 2

**Signal Word:** Warning!

**Hazard Symbol:**



### Hazard Statement:

H302: Harmful if swallowed

H319: Causes serious eye irritation

H371: May cause damage to organs

H373: May cause damage to organs through prolonged or repeated exposure (Kidneys)

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**Prevention Statement:**

P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
 P264: Wash hands thoroughly after handling.  
 P270: Do not eat, drink or smoke when using this product.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Response Statement:**

P301+P312: IF SWALLOWED: Call a POISON CENTER/Doctor if you feel unwell.  
 P330: Rinse mouth.  
 P305+P305+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.  
 P308+P311: IF exposed or concerned: Call a POISON CENTER/Doctor.  
 P314: Get medical advice/attention if you feel unwell.

**Storage Statement:**

P405: Store locked up.

**Disposal Statement:**

P501: Dispose of contents / containers in accordance with local / regional / national / international regulations.

**HEALTH HAZARDS OR RISKS FROM EXPOSURE:**

**Primary Route(s) Of Entry:** Skin Contact, Eye Contact, Inhalation, Ingestion

**EYE HAZARDS:** Contact may cause irritation to eyes.

**SKIN HAZARDS:** Prolonged or repeated exposure to this product may be irritating to the skin.

**INGESTION HAZARDS:** Contains ethylene glycol, which is toxic when swallowed. A lethal dose is 1-2 ml per kilogram. Symptoms include headache, weakness, confusion, dizziness, staggering, slurred speech, loss of coordination, faintness, nausea and vomiting, increased heart rate, decreased blood pressure, difficulty breathing and seeing, pulmonary edema, unconsciousness, convulsions, collapse, and coma. Symptoms may be delayed.

**INHALATION HAZARDS:** Exposure to vapors or mists may be irritating to the respiratory system.

### 3. COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	AMOUNT	HAZARD SYMBOLS	GHS HAZARD CLASSIFICATION
Ethylene Glycol	107-21-1	203-473-3	90 - 100%		ACUTE TOXICITY CAT 4 (ORAL) STOT RE CAT 2 STOT SE CAT 2 EYE IRRITANT CAT 2
Water	7732-18-5	231-791-2	3 - 7%	None	HAZARD CLASSIFICATION: NONE RISK PHRASES: NONE
Each of the other components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens)					

NOTE: This product has been classified in accordance with the hazard criteria of 29CFR1910.1200 and the CPR and this SDS contains all the information required by the CPR, EU Regulation 1272/2008 and the Japanese Industrial Standard JIS Z 7250: 2000.

### 4. FIRST-AID MEASURES

**EYE CONTACT:** If chemical contacts the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Remove contact lenses, if worn. Seek medical attention if irritation persists.

**SKIN CONTACT:** Wash contacted area with soap and water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if irritation develops and persists.

**INHALATION:** If chemical is inhaled, or breathing is difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.



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**INGESTION:** If chemical is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of the label and SDS with the victim to the health professional.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Persons with pre-existing skin disorders, impaired respiratory function may be more susceptible to the effects of the substance.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate overexposure.

### 5. FIRE-FIGHTING MEASURES

**FLASH POINT:** > 232°F (>111°C)

**AUTOIGNITION TEMPERATURE:** Not Established

**FLAMMABLE LIMITS (in air by volume, %):** Lower NE% Upper NE%

**FIRE EXTINGUISHING MATERIALS:** Foam, water spray (fog), carbon dioxide can be used as extinguishing media.

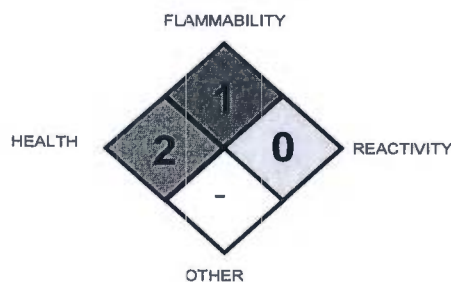
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None known

**Explosion Sensitivity to Mechanical Impact:** Not Sensitive

**Explosion Sensitivity to Static Discharge:** Not Sensitive

**SPECIAL FIRE-FIGHTING PROCEDURES:** Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

#### NFPA RATING



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

### 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Proper protective equipment should be used. Personnel should be trained for spill response operations.

**SPILLS:** Contain spill if safe to do so. Soak up with a non-combustible absorbent material, pickup and place in an appropriate container for disposal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations)

### 7. HANDLING and STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product.

**STORAGE AND HANDLING PRACTICES:** Store containers in a cool, dry location, away from sources of intense heat. Store in conditions below 120°F. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Keep containers closed when not in use.

### 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

#### EXPOSURE LIMITS/GUIDELINES:

Component Name	CAS#	ACGIH-TLV's	OSHA PEL's	NIOSH-TLV's	Other
Ethylene Glycol	107-21-1	100 mg/m <sup>3</sup> Aerosol	Not Listed	Not Listed	Not Listed
Water	7732-18-5	Not listed	Not Listed	Not Listed	Not Listed

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the established limits.



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Currently, International exposure limits are not established for all the components of this product. Please check with competent authority in each country for the most recent limits in place.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

**RESPIRATORY PROTECTION:** Not normally required with this product. If exposure limits are exceeded, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**EYE PROTECTION:** Splash goggles or safety glasses with side shields recommended. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

**HAND PROTECTION:** Compatible protective gloves recommended. Wash hands after removing gloves. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

**BODY PROTECTION:** Use body protection appropriate for task. Coveralls, rubber aprons, or chemical protective clothing made from natural rubber are generally acceptable, depending upon the task. If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

### **9. PHYSICAL and CHEMICAL PROPERTIES**

VAPOR DENSITY: 2.1

SPECIFIC GRAVITY @ 20°C: 1.1

VAPOR PRESSURE: 0.1 mmHg @ 68°F

BOILING POINT: >380°F (>193°C)

APPEARANCE, ODOR and COLOR: Fluorescent green liquid with no odor.

Lbs/Gallon: 9.3

EVAPORATION RATE (n-BuAc=1): Not Established

SOLUBILITY IN WATER: Miscible in water

pH: 10 - 11

FREEZING POINT: Not Established

### **10. STABILITY and REACTIVITY**

**STABILITY:** Stable under ordinary conditions of use and storage

**DECOMPOSITION PRODUCTS:** When heated to decomposition this product produces carbon dioxide and other organic compounds.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Strong oxidizing agents, strong bases, strong acids.

**HAZARDOUS DEPOLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Incompatible materials.

### **11. TOXICOLOGICAL INFORMATION**

**TOXICITY DATA:**

CAS# 107-21-1:

Draize test, rabbit, eye: 500 mg/24H Mild;

Draize test, rabbit, eye: 100 mg/1H Mild;

Draize test, rabbit, eye: 0.012 ppm/3D;

Draize test, rabbit, eye: 1440 mg/6H Moderate;

Oral, mouse: LD50 = 5500 mg/kg;

Oral, rat: LD50 = 4700 mg/kg;

Skin, rabbit: LD50 = 9530 uL/kg;

**SUSPECTED CANCER AGENT:** The components of this product are not listed by agencies tracking the carcinogenic potential of chemical compounds as follows:

**Carcinogeny**

NTP Regulated No

IARC Regulated No

OSHA Regulated No

**IRRITANCY OF PRODUCT:** Eye irritation.

**SENSITIZATION TO THE PRODUCT:** This product is not known to cause human skin or respiratory sensitization.

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**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

**Mutagenicity:** The components of this product are not reported to produce mutagenic effects in humans.

**Embryotoxicity:** The components of this product are not reported to produce embryotoxic effects in humans.

**Teratogenicity:** The components of this product are not reported to produce teratogenic effects in humans.

**Reproductive Toxicity:** The components of this product are not reported to produce reproductive effects in humans.

### **12. ECOLOGICAL INFORMATION**

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

**TOXICITY:** No specific data is available for this product.

**MOBILITY IN SOIL:** No Data

**PERSISTENCE/DEGRADABILITY:** No specific data is available for this product.

**ENVIRONMENTAL STABILITY:** No specific data is available for this product, however this product is not expected to be readily biodegradable.

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** No specific data is available for this product.

**BIOACCUMULATION/ACCUMULATION:** These products have not been tested for bio-accumulation potential.

**WATER ENDANGERMENT CLASS:** Not Established

### **13. DISPOSAL CONSIDERATIONS**

**PREPARING WASTES FOR DISPOSAL:** Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**EU Waste Code:** To be determined based on usage and contamination.

### **14. TRANSPORTATION INFORMATION**

**US DOT, IATA, IMO, ADR:**

**U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:** This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

**PROPER SHIPPING NAME:** NON-REGULATED MATERIAL

**HAZARD CLASS NUMBER and DESCRIPTION:** None

**UN IDENTIFICATION NUMBER:** None

**PACKING GROUP:** None

**DOT LABEL(S) REQUIRED:** None

**NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER:** None

**RQ QUANTITY:** None

**MARINE POLLUTANT:** None of the components of this product are designated by the Department of Transportation to be a Marine Pollutant (49 CFR 172.101, Appendix B).

**INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA):** This product is not considered as dangerous goods.

**INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO):** This product is not considered as dangerous goods.

**EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):** This product is not considered by the United Nations Economic Commission for Europe to be dangerous goods



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### **15. REGULATORY INFORMATION**

#### **UNITED STATES REGULATIONS:**

##### **SARA REPORTING REQUIREMENTS**

The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows:

This material contains Ethylene glycol (CAS# 107-21-1, >95%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

##### **TSCA**

All components in this product mixture are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

**SARA 311/312:** Acute Health: Yes; Chronic Health: No; Fire: No; Reactivity: No

**U.S. CERCLA REPORTABLE QUANTITY (RQ):** CAS# 107-21-1: 5000 lb final RQ; 2270 kg final RQ

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):** This product does not contain a component above the 0.1% level which is listed as a California Proposition 65 chemical.

#### **CANADIAN REGULATIONS:**

**CANADIAN DSL/NDL INVENTORY STATUS:** All of the components of this product are on the DSL Inventory.

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** No component of this product is on the CEPA First Priorities Substance Lists.

**CANADIAN WHMIS CLASSIFICATION and SYMBOLS:** Complies with WHMIS 2015

#### **EU HAZARD INFORMATION:**

See section 2 for details

#### **AUSTRALIAN INFORMATION FOR PRODUCT:**

**AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS:** All components of this product are listed on the AICS or exempt.

**STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS:** Not applicable.

#### **JAPANESE INFORMATION FOR PRODUCT:**

**JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS:** The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

#### **INTERNATIONAL CHEMICAL INVENTORIES:**

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac: Listed

Australian Inventory of Chemical Substances (AICS): Listed

Korean Existing Chemicals List (ECL): Listed

Japanese Existing National Inventory of Chemical Substances (ENCS): Listed

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed

Swiss Giftlist List of Toxic Substances: Listed

U.S. TSCA: Listed

EC1704  
ASTM PTP Coolant

## SAFETY DATA SHEET

### 16. OTHER INFORMATION

PREPARED BY: Chris Eigbrett

MSDS to GHS Compliance  
www.msdstoghs.com

All chemicals may pose unknown hazards and should be used with cautions. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Modine Manufacturing Co. assumes no responsibility for the completeness or accuracy of the information contained herein. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and protection of the environment

End of SDS Sheet

#### REVISION LOG:

<u>Date of Revision:</u>	<u>Reason for Current Revision:</u>
10-June-2014	Transitioned to GHS format
20-July-2015	Established revision log in Section 16. Regulatory information updated, complies with WHMIS 2015. Revised boiling point and flash point.
27-March-2016	Updated Annex, GHS Elements, and removed DIRECTIVE 1999/45/EC information from Section 2. Composition information and current GHS Classifications in Section 3. Composition information in Section 8. Prepared By information in Section 16.