

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name : Microlon Cooling System Treatment

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Coolant fluid

#### 1.3 Details of the supplier of the safety data sheet

Company : Microlon Inc.  
PO Box 80341  
Austin, Texas 78708-0341  
USA

Telephone : (512) 490-6460 (09:00 - 17:00)

Email address : [info@microlon.com](mailto:info@microlon.com)

#### 1.4 Emergency telephone number

<http://www.pers-er.com/>

Emergency phone # : Domestic Shipments: 800-633-8253  
International Shipments: 801-629-0667

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Target organ toxicant (repeated exposure): Category 2. Reproductive toxicant (developmental): Category 2.  
Acute oral toxicant: Category 4.



Signal Word: Warning

#### 2.2 Health Hazards

Suspected of damaging the unborn child. Harmful if swallowed.

##### Target Organs

May cause damage to organs (Kidney) through prolonged or repeated exposure

#### 2.3 PRECAUTIONARY STATEMENTS

##### Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

##### Response

IF SWALLOWED: Rinse mouth. Call a poison center or doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention.

##### Storage

Store locked up.

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## Disposal

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

**HAZARDS NOT OTHERWISE CLASSIFIED:** Not Applicable

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Mixtures

Components	Amount	CAS Number
Ethylene Glycol	60 - 98 %wt/wt	107-21-1
Sodium 2-ethylhexanoate	1 - 5 %wt/wt	19766-89-3
Molybdic acid, disodium salt, dihydrate	0.1 - 1 %wt/wt	10102-40-6

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

### 4.2 Most important symptoms and effects, both acute and delayed

#### IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

**Ingestion:** Toxic; may be harmful or fatal if swallowed. May be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

### 4.3 DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

#### Reproduction and Birth Defects:

Contains material that may cause adverse reproductive effects if swallowed based on animal data. Contains material that may cause harm to the unborn child if swallowed based on animal data.

#### Target Organs

Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Kidney Risk depends on duration and level of exposure. See Section 11 for additional information

**Indication of any immediate medical attention and special treatment needed:** Not Applicable

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## 5. FIRE FIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA:

Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames. Dry Chemical, CO<sub>2</sub>, AFFF Foam or alcohol resistant foam.

### 5.2 PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Protective Measures:

Eliminate all sources of ignition in vicinity of spilled material.

### 6.2 Spill Management:

Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

### 6.3 Reporting:

Report spills to local authorities as appropriate or required.

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 General Handling Information:

Do not taste or swallow antifreeze or solution. Keep out of the reach of children and animals.

### 7.2 Precautionary Measures:

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.

### 7.3 Conditions for safe storage

Do not store in open or unlabeled containers.

### 7.4 General Handling Information:

Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Exposure Controls

#### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), 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. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

#### ENGINEERING CONTROLS:

Use in a well-ventilated area.

#### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

**Respiratory Protection:** No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

### 8.2 Control parameters

#### Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH			100 mg/m <sup>3</sup>	
Sodium 2-ethylhexanoate	Not Applicable				
Molybdic acid, disodium salt, dihydrate	ACGIH	5 mg/m <sup>3</sup>			A3 A3

Consult local authorities for appropriate values.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

**Attention: the data below are typical values and do not constitute a specification.**

Physical State:	Red liquid
Odor:	Faint or Mild
Odor Threshold:	No data available
pH	8.1 - 8.5
Vapor Pressure:	No data available
Vapor Density (Air= 1)	No data available
Boiling Point:	No data available
Freezing Point:	-37°C (-34.6°F)

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Melting Point:	No data available
Solubility:	Miscible
Specific Gravity:	1.13 @ 15.6°C (60.1°F)
Density:	No data available
Evaporation Rate:	No data available
Percent Volatile (VOL):	No data available
Viscosity	7 mm <sup>2</sup> /s @ 100°C (212°F) (Typical)
Decomposition temperature	No Data Available
Octanol/Water Partition Coefficient:	No Data Available

## 9.2 FLAMMABLE PROPERTIES:

Flammability (solid, gas)	No Data Available
Flashpoint	115 °C (239 °F)
Autoignition	No data available
Flammability (Explosive) Limits (% by volume in air)	Lower: Not Applicable Upper: Not Applicable

## 9.3 Other safety data

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

### 10.2 Chemical Stability

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Incompatibility With Other Materials:

Not applicable

### 10.4 Hazardous Decomposition Products:

Aldehydes (Elevated temperatures), Ketones (Elevated temperatures)

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute Toxicity

No data available on mixture. Not expected to have any acute toxic effects.

#### Skin corrosion/irritation

No data available on mixture. Not expected to cause any acute skin corrosion/irritation.

#### Serious eye damage/eye irritation

No data available on mixture. Not expected to cause any acute serious eye damage or primary irritation; mild reversible eye irritation may be possible following exposure.

#### Respiratory or skin sensitization

No data available on mixture. Not expected to have sensitization potential.

#### Germ Cell Mutagenicity

No data available.

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## **Carcinogenicity**

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.

## **Reproductive toxicity**

No data available.

## **Specific Target Organ Toxicity - Single Exposure**

No data available on mixture. Inhalation of significant vapors or mists may cause transient respiratory irritation.

## **Specific Target Organ Toxicity - Repeated Exposure**

No data available.

## **Aspiration hazard**

No data available on mixture. Not expected to pose an aspiration hazard.

## **ADDITIONAL TOXICOLOGY INFORMATION**

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Ecotoxicity**

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

### **12.2 Mobility**

No data available.

### **12.3 Persistence and degradability**

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

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## 12.4 Potential to bioaccumulate

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

## 13. DISPOSAL CONSIDERATIONS

- 13.1 Use material for its intended purpose or recycle if possible. Use of oil collection services available for used regular oil is acceptable for recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## 14. TRANSPORT INFORMATION

- 14.1 The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING;  
NOT REGULATED FOR TRANSPORT UNDER 49 CFR

**Additional Information:** Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

**IMO/IMDG Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** Anti-freeze Preparations, Proprietary; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:**  
Not applicable

## 15. REGULATORY INFORMATION

- |                                |                                       |     |
|--------------------------------|---------------------------------------|-----|
| 15.1 EPCRA 311/312 CATEGORIES: | 1. Immediate (Acute) Health Effects:  | YES |
|                                | 2. Delayed (Chronic) Health Effects:  | YES |
|                                | 3. Fire Hazard:                       | NO  |
|                                | 4. Sudden Release of Pressure Hazard: | NO  |
|                                | 5. Reactivity Hazard:                 | NO  |

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.  
Ethylene Glycol 03, 05, 06, 07

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## CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Ethylene Glycol	5000 lbs	None	5446 lbs

### 15.2 Safety, health and environmental regulations/legislation specific of the substance or mixture

Health & Safety at Work etc. Act 1974  
 Control of substances hazardous to Health Regulations 2002 (as amended)  
 Chemicals (Hazard Information and Packaging for Supply) Regulations 2009  
 Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended)  
 EH40/2005 Workplace Exposure Limits (as amended)  
 Environmental Protection Act 1990  
 Hazardous Waste Regulations 2005 (as amended)

## 16. OTHER INFORMATION

**16.1 NFPA RATINGS:** Health: 2 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 2 Flammability: 1 Reactivity: 0  
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

### 16.2 ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

### 16.3 Recommended restrictions on use

Use in accordance with manufacturer's technical instructions.  
 The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for people working with or handling these products. This information is believed to be reliable and updated at Revision Date, and represents the best information currently available and known by Microlon Inc. However, Microlon Inc makes no guarantee or warranty, express or implied, with respect to such information and we assume no liability resulting from its use. The information related herein is based on proper handling and anticipated uses and is for the material without chemical additions or alterations. Users should make their own investigations to determine the suitability of the information for their particular purposes. It is the responsibility of the user to undertake a suitable risk assessment/COSHH assessment prior to using this material.