

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

1. Identification

Product name: YANMAR ROYAL FREEZE
 Recommended use and restrictions on use: General industrial application
 Manufacturer/Supplier: JX Nippon Oil & Energy USA, Inc.
 Address: 20 N. Martingale Road Suite 325 Schaumburg IL 60173
 Emergency telephone number: 847-413-2188

2. Hazards identification

Hazard category	Category
Acute toxicity (oral)	Category 5
Skin corrosion/irritation	Category 3
Serious eye damage/eye irritation	Category 2B
Specific target organ systemic toxicity following single exposure	Category 1
Specific target organ systemic toxicity following repeated exposure	Category 1
Acute hazards to the aquatic environment	Category 3

2.2. Label elements

Hazard pictograms:



Signal word: Danger
 Hazard statement: May be harmful if swallowed
 Causes mild skin irritation
 Causes eye irritation
 Causes damage to organs (central nerve system, kidney, heart, respiratory apparatus).
 Causes damage to organs (central nerve system, heart, respiratory apparatus) through prolonged or repeated exposure.
 Harmful to aquatic life

Precautionary statements:

Prevention Do not handle until all safety precautions have been read and understood. (P202)
 Wear protective gloves/protective clothing/eye protection/face protection. (P280)
 Do not allow the eyes to become exposed to the product. Do not swallow the product.
 Avoid release to the environment. (P273)
 Do not breathe dust/fume/gas/mist/vapours/spray. (P260)
 Wash hands thoroughly after handling.

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Do no eat, drink or smoke when using this product. (P270)

Response IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. (P301+P310)

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. (P301+P330+P331)

If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.

IF ON SKIN: Wash with plenty of soap and water. (P302+P352)

IF exposed or concerned: Call a POISON CENTER or doctor/physician. (P308+P311)

Get medical advice/attention if you feel unwell. (P314)

If skin irritation occurs: Get medical advice/attention. (P332+P313)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)

If eye irritation persists: Get medical advice/attention. (P337+P313)

Storage The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.

Containers that have been opened must be tightly sealed.

Store locked up. (P405)

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

If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.

3. Composition/information on ingredients

Substance/Mixture: Mixture

Ingredients and Concentration

Chemical Name	Concentration wt. %	CAS#
Ethylene Glycol	90-92	107-21-1
Water	2-4	7732-18-5
Molybdenum Compound	0-1	10102-40-6 (7631-95-0)
Others	<7	Trade Secret

4. First-aid measures

Inhalation:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Skin contact:	Cover the body with blankets to keep warm and quiet. If you feel unwell, seek medical advice. Immediately flush skin with large amounts of water. Wash contaminated clothing before reuse.
Eye contact:	If skin irritation occurs: Get medical advice/attention. Rinse with clean water carefully for several minutes. Remove contact lenses if present and if removal is easy, then continue rinsing. Rinse for 15 minutes at a minimum and seek medical attention.
Ingestion:	Do not induce vomiting. Drink [one glass] [two glasses] of water. Call a physician [or poison control center] immediately.
Most important symptoms/effects, acute and delayed.	No information available

5. Fire-fighting measures

Suitable extinguishing media:	Mist of loaded liquid, dry chemicals, carbon dioxide, fire foam, and dry sand are effective.
Unsuitable extinguishing media:	Use of straight stream of water can cause a risk of spreading fire.
Specific hazards arising from the chemical:	In some cases of fire, may release irritant gases. When burnt, may generate carbon monoxide and other toxic gases.
Specific extinguishing methods:	Spray water to the surrounding facilities for cooling. Keep unauthorized persons off the site of occurrence of fire and the surroundings. Even after extinction, cool containers thoroughly with plenty of water.
Special protective equipment and precautions for fire fighters:	Wear fire/flare resistant/retardant clothing. Fight fire from windward direction while wearing protective equipment. If contact with skin is expected, wear impervious protective equipment and gloves. Use air-breathing apparatus and protective clothing whenever necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Wear protective equipment when working. Remove nearby potential ignition sources immediately. When mist is generated, use respiratory equipment to prevent inhalation of mist. Do not touch or walk through spillage. Pay attention to the site of spillage, which is slippery.
--	---

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Environmental precautions:	Prevent spreading of oil spill with earth and sand, sandbags, or other proper materials and use care not to allow the oil spill to flow to street drains, sewer systems, and rivers. At sea, install oil spill containment booms to prevent spreading of spills and absorb with absorption mat or other proper materials.
Methods and materials for containment and cleaning up:	In case of spillage in small quantity, collect spillage by absorbing with earth, sand, sawdust, waste, or other proper materials. In case of spillage in large quantity, enclose with embankment to prevent spreading of spillage and collect spillage in empty containers to the extent possible.
Prevention of second accident:	In case of spillage, immediately inform the organizations concerned of the spillage to prevent possible accidents and spreading of spillage. Remove nearby potential ignition sources immediately and make fire-extinguishing agents available. Remove spillage completely, and ventilate and clean the site and the surroundings.

7. Handling and storage

Handling

Technical measures:	Keep away from any possible contact with sparks, open flames, and high-temperature materials, and do not allow release of vapor without justification. Use pumps or other proper equipment for taking out from containers. Do not siphon with your mouth using a tube. Do not drink. When mist is generated, use respiratory equipment to prevent inhalation of mist. In case of vapor/mist dispersion, install a closed system, local ventilation system, and/or other proper equipment for the sources of vapor/mist generation. Avoid rough handling of containers such as falling, dropping, exposing to shock, and dragging.
Ventilation requirements:	Maintain adequate ventilation when handling indoors.
Precautions:	Wash hands and face thoroughly after handling. Be careful with fire.
Precautions for safe handling:	Avoid falling, dropping, exposing to shock, or dragging of containers. Wear protective gloves when opening containers to eliminate a risk of hand injury. No Incompatible materials.

Storage

Storage conditions:	Store in a well ventilated, cool, dry, dark place, protecting from direct sunlight and keeping away from any potential ignition sources and high-temperature materials.
---------------------	---

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Store tightly stopped after use to prevent possible contamination with dust and moisture.

Preferably store locked up in a proper storage area.

Safety adequate container materials: Use spill-proof containers that are free of damage/corrosion.

8. Exposure controls/personal protection

Appropriate engineering controls: In case of mist generation, enclose the source of mist generation, or install a ventilation system.
Install eye cleaning and body cleaning equipment near the handling site.

Control parameters

Chemical Name	U. S. - OSHA			ACGIH	
	Ceiling	STEL	TWA	TLV-STEL	TLV-TWA
Ethylene Glycol	-ppm -mg/m3	-ppm -mg/m3	-ppm -mg/m3	50ppm 10mg/m3	25ppm -mg/m3
Molybdenum Compound	-ppm -mg/m3	-ppm -mg/m3	-ppm -mg/m3	-ppm -mg/m3	-ppm -mg/m3

Personal protective equipment

Respiratory protection: Not needed under normal conditions, but wear a gas mask (against organic gases) whenever required.

Hand protection: In case of prolonged or repeated exposure, wear oil-resistant hand protection.

Eye/face protection: In case of exposure to splashes, wear ordinary type goggles.

Skin protection: In case of handling over a prolonged period of time or in case of exposure to oil, wear oil-resistant, long-sleeved work clothing.

Hygiene measures: Take off contaminated clothing and wash thoroughly before reuse.
Wash hands thoroughly after handling.

9. Physical and chemical properties

Product

Appearance: Liquid

pH: 7.5-8.5

Melting point/freezing point: Pour Point No data.

Initial boiling point and boiling range: 170(°C)

Flash point: 130(°C)

Evaporation rate: No data.

Flammability (solid, gas): Not applicable

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Auto-ignition temperature: No data.

Upper/lower flammability or explosive limits: No data.

Vapor pressure: No data.

Vapour density: No data.

Density(g/cm³): 1.131–1.141 (20°C)

Solubility: water : Completely soluble.

Partition coefficient: n-octanol/water: No data.

Decomposition temperature: No data.

Kinematic viscosity: No data.

10. Stability and reactivity

Chemical stability: Stable when stored or preserved in a dark place at room temperature.

Possibility of hazardous reactions: Keep away from any possible contact with strong oxidizing agents.

Conditions to avoid: Contact with incompatible hazard substances
Prolonged heating, open flames, and ignition sources

Incompatible materials: Use care to keep away from any possible contact with halogens, strong acids, alkalis, and acidifying substances.

Hazardous decomposition products: When burnt, may release carbon monoxide and other gases.

11. Toxicological information

Product

Acute toxicity (oral): For mixtures, hazard category was identified based on the classification criteria for mixtures.

Acute toxicity (dermal): For mixtures, hazard category was identified based on the classification criteria for mixtures.

Acute toxicity (inhalation): For mixtures, hazard category was identified based on the classification criteria for mixtures.

Skin corrosion/irritation: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Serious eye damage/irritation: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Respiratory sensitization: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Skin sensitization: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Mutagenicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Carcinogenicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Reproductive toxicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Target organ effect/Single exposure: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Target organ effect/Multi exposure: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Respiratory toxic: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Other information:

Ingredient

Ethylene Glycol

Acute toxicity (oral): LD50: 4000~13400 mg/kg[rat], LD50: 4700 mg/kg[rat]

Acute toxicity (dermal): LD50: 2800 mg/kg[rat], LD50: 9530~10612 mg/kg[rabbit], LD50: 10600 mg/kg[rat]

Acute toxicity (inhalation): LC50: 2.7 mg/L[rat]

Skin corrosion/irritation: Mild, Effect on person: No relevant information found, Effect on animals: No relevant information found

Serious eye damage/irritation: Mild, Effect on person: No relevant information found, Effect on animals: No relevant information found

Respiratory sensitization: Effect on person: No relevant information found

Skin sensitization: Effect on person: No relevant information found, Effect on animals: No relevant information found

Carcinogenicity: ACGIH:A4

Respiratory toxic: Effect on person: No relevant information found

Molybdenum Compound

Carcinogenicity: ACGIH:A3

12. Ecological information

Product

Ecotoxicity

Fish acute toxicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Algae acute toxicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Fish chronic toxicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Algae chronic toxicity: For mixtures, hazard category was identified based on the classification criteria for mixtures.

Other impact :

Persistence and degradability: No data.

Bioaccumulative potential: No data.

Mobility in soil: No data.

Ingredient

Ethylene Glycol

Ecotoxicity

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

Algae acute toxicity: 72hrErC50: > 1000 mg/L[Pseudokirchneriella subcapitata],
96hEC50: 6500~13000 mg/L[Pseudokirchneriella subcapitata]

Persistence and degradability: Readily biodegradable

Other impact:

Persistence and degradability: No data.

Bioaccumulative potential: No data.

Mobility in soil: No data.

Molybdenum Compound

No Data

Other impact:

Persistence and degradability: No data.

Bioaccumulative potential: No data.

Mobility in soil: No data.

13. Disposal considerations

Disposal methods: Dispose of contents/container in accordance with local/regional/national/international regulations.

Every customer/user of the product should dispose of industrial waste on its own responsibility, otherwise it must rely on a company authorized by prefectural governor for treating industrial waste or a local public body involved in the disposal of industrial waste for proper disposal.

Before disposal of used container, remove contents completely.

14. Transport information

IATA UN number: Not applicable

Proper shipping name: Not applicable

Packing group: Not applicable

IMDG UN number: Not applicable

Proper shipping name: Not applicable

Packing group: Not applicable

Transport in bulk (according to Annex II of MARPOL73/78 and the IBC Code): Not applicable

Specific security precaution and condition of transportation:

Transport containers without causing any significant friction or shaking.

15. Regulatory information

SAFETY DATA SHEET

MSDS: 48140_E71USCA

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Product Name: YANMAR ROYAL FREEZE

US California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

A part of the ingredients is listed. (Ethylene glycol)

Superfund Amendments and Reauthorization Act of 1986 (SARA Title III)

Section 313: Ethylene glycol

Australia (AICS) :	All components are listed or exempted.
Canada (DSL) :	All components are listed or exempted.
China (IECSC) :	All components are listed or exempted.
EU (REACH) :	In the case where one or more components are not listed or, even if listed, in the case of importing to the country or area concerned, an application or notification is required.
New Zealand (NZIoC) :	All components are listed or exempted.
Philippines (PICCS) :	All components are listed or exempted.
Taiwan :	All components are listed or exempted.
USA (TSCA) :	All components are listed or exempted.

16. Other information

NFPA Health hazard rating blue:0, Flammability hazard rating:0

HMIS Health Ratings:1, Flammability Ratings:0

Date Prepared: 9/20/2017

Date Revised: 9/6/2018

Disclaimer: We at JXTG Nippon Oil & Energy Corporation have prepared the copyrighted Safety Data Sheet to provide reference information on the hazardous chemical product of interest for our customers/users to ensure secure and safe handling. We would like every customer/user of the product to refer to the information and understand the necessity of taking appropriate measures for the actual handling conditions on their own responsibilities for optimum practical application of the product of interest. Consequently, the Safety Data Sheet is not intended to guarantee the safety of the product referenced to herein.

1. IDENTIFICATION**Product identifier****Product Name** Yanmar YG30R**Other means of identification****Recommended use of the chemical and restrictions on use****Recommended Use** Industrial, manufacturing, or laboratory use**Uses advised against** No information available**Details of the supplier of the safety data sheet****Supplier Identification** RILCO, Inc**Address** 1320 1st Street
Rock Island, IL 61201
USA**Telephone** Phone: 309-788-5631**Emergency telephone number****Emergency Telephone Number** CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)**2. HAZARDS IDENTIFICATION****Classification**

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (repeated exposure)	Category 2

GHS Label elements, including precautionary statements**Warning****Hazard statements**Causes skin and eye irritation
May cause damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of soap and water
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash it before reuse

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other information

Not applicable

Unknown acute toxicity No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

Mixture

Chemical name	CAS-No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Ethylene glycol	107-21-1	40-50	-	-
Water	7732-18-5	Balance	-	-
Tolyltriazole, sodium salt	64665-57-2	<1	-	-

4. FIRST AID MEASURES

First aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get immediate medical advice/attention.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Irritating.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Combustion Products	Potassium oxides. Sodium oxides.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	
Ethylene glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³		
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Ethylene glycol 107-21-1	Ceiling: 100 mg/m ³	Ceiling: 100 mg/m ³ aerosol only	Ceiling: 100 mg/m ³ aerosol only	

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state Liquid
Appearance Clear
Odor Mild
Color Yellow
Odor Threshold Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	8		
Melting / freezing point	-37 °C (-34 °F)	None known	
Boiling point / boiling range	107 °C (224 °F)	None known	
Flash Point	116 °C (241 °F)	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air		None known	
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	<0.1 mmHg at 20°C (68°F)	None known	
Vapor density	No data available	None known	
Relative density	1.07 kg/L (8.9 lbs/gal)		
Water Solubility	Completely soluble		
Solubility(ies)	No data available	None known	
Partition coefficient: n-octanol/water	Not applicable		
Autoignition temperature	400 °C (752 °F)	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No information available		
Oxidizing properties	No information available		

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	1.07 kg/L (8.9 lbs/gal)
Bulk Density	1.07 kg/L (8.9 lbs/gal)
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods.
Incompatible materials	Acids. Oxidizing agent.
Hazardous Decomposition Products	Potassium oxides. Sodium oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available. May cause irritation. May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

Symptoms	Irritating. Redness. Coughing and/ or wheezing. May cause redness and tearing of the eyes.
-----------------	--

Numerical measures of toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

Unknown acute toxicity No information available

Component Information

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
Ethylene glycol	= 4700 mg/kg (Rat)	= 9530 µL/kg (Rabbit) = 10600 mg/kg (Rat)	= 2.5 mg/L (Rat)
Tolyltriazole, sodium salt	1980 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients. May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Irritating to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity Legend	Based on available data, the classification criteria are not met.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Ethylene glycol	96h EC50: 6500 - 13000 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 41000 mg/L (Oncorhynchus mykiss) 96h LC50: 14 - 18 mL/L (Oncorhynchus mykiss) 96h LC50: = 40761 mg/L (Oncorhynchus mykiss) 96h LC50: 40000 - 60000 mg/L (Pimephales promelas) 96h LC50: = 27540 mg/L (Lepomis macrochirus) 96h LC50: = 16000 mg/L (Poecilia reticulata)	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	48h EC50: = 46300 mg/L

Persistence and Degradability No information available.

Bioaccumulation No information available.

Chemical name	Log Pow
Ethylene glycol	-1.93

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Legend

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS-No	Weight-%	SARA 313 - Threshold Values %
Ethylene glycol - 107-21-1	107-21-1	40-50	1.0

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ethylene glycol 107-21-1	5000 lb	Not Applicable	RQ 5000 lb final RQ(RQ 2270 kg final RQ)

US State Regulations

California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Chemical name	Prop 65 Listing
Ethylene glycol 107-21-1	Reproductive Toxicant (Ingested)

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Ethylene glycol 107-21-1	X	X	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 0	Physical hazards 0	Personal Protection X

Issuing Date	16-May-2018
Revision Date	16-Oct-2018
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet