

Material Safety Data Sheet

PRO MICRO FLO

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

1. Product and Company Identification

Material name PRO MICRO FLO
Version # 05
Issue date January-22-2013
Revision date January-22-2013
Supersedes date March-26-2011
CAS # Mixture
Manufacturer information Clearwater™ International L.L.C.
100 Leetsdale Industrial Drive
Suite A
Leetsdale, PA 15056 United States
CHEMTREC 1-800-424-9300/703-527-3887

Supplier information Producers Service Corp.
109 South Graham St.
Zanesville, OH 43701 US
Supplier emergency telephone number(s) 24hr customer Service 740-454-6253

2. Hazards Identification

Emergency overview WARNING
FLAMMABLE LIQUID AND VAPOR.
Harmful in contact with eyes. Cancer hazard. May cause eye and skin irritation. Prolonged exposure may cause chronic effects. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Eyes Eye contact may result in corneal injury. Contact may irritate or burn eyes. Do not get this material in contact with eyes.

Skin Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Do not get this material in contact with skin.

Inhalation Prolonged inhalation may be harmful. May cause cancer by inhalation. Do not breathe dust/fume/gas/mist/vapors/spray.

Ingestion May cause delayed lung damage. Do not ingest. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Components of the product may be absorbed into the body by ingestion.



Target organs	Central nervous system. Eyes. Lungs. Respiratory system. Skin.
Chronic effects	Shortness of breath. Conjunctiva. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. May cause delayed lung damage. Prolonged skin contact may defat the skin and produce dermatitis.
Signs and symptoms	Discomfort in the chest. Shortness of breath. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Cough. Conjunctivitis. Defatting of the skin. Rash. Irritation.
Potential environmental effects	May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Alcohol C6-C12, Ethoxylated	68439-45-2	5 - 15
Ethylene Glycol	107-21-1	5 - 15
Isopropyl alcohol	67-63-0	5 - 15
D-Limonene	5989-27-5	1 - 5
1-Octanol	111-87-5	1 - 2.5

4. First Aid Measures

First aid procedures

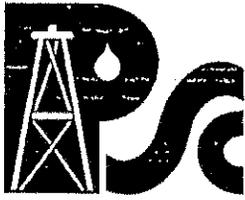
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops or persists.
Skin contact	Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists. Remove and isolate contaminated clothing and shoes. For minor skin contact, avoid spreading material on unaffected skin.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.
Ingestion	Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Notes to physician In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General advice If exposed or concerned: get medical attention/advice. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties Flammable by OSHA criteria. Containers may explode when heated. Runoff to sewer may cause fire or explosion hazard.



Extinguishing media

Suitable extinguishing media Water. Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Protection of firefighters

Protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions

In the event of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Move containers from fire area if you can do it without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

Specific methods

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers. In the event of fire, cool tanks with water spray.

6. Accidental Release Measures

Personal precautions

Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away. Stay upwind. Keep out of low areas.

Methods for containment

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Should not be released into the environment.

Methods for cleaning up

Should not be released into the environment.

Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

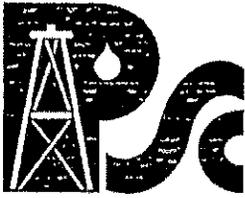
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

7. Handling and Storage

Handling

Do not handle or store near an open flame, heat or other sources of ignition. Do not breathe vapors or spray mist. Avoid prolonged exposure. Use only with adequate ventilation. All equipment used when handling the product must be grounded. Wear personal protective equipment. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid release to the environment. Wash thoroughly after handling.



Storage

Refrigeration recommended. Keep away from heat and flame. Keep tightly closed in a dry, cool and well-ventilated place. Store in accordance with local/regional/national/international regulation. The pressure in sealed containers can increase under the influence of heat. Keep this materia away from food, drink and animal feed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ethylene Glycol (107-21-1)	Ceiling	100 mg/m3	Aerosol.
Isopropyl alcohol (67-63-0)	STEL	400 ppm	
	TWA	200 ppm	

US. ACGIH. BEIs. Biological Exposure Indices

Components	Type	Value
Isopropyl alcohol (67-63-0)	BEI	40 mg/l

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Isopropyl alcohol (67-63-0)	PEL	980 mg/m3 400 ppm

Engineering controls

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection

Do not get this material in contact with eyes. Wear chemical goggles.

Skin protection

Do not get this material in contact with skin. Protective gloves. Impervious gloves.

Respiratory protection

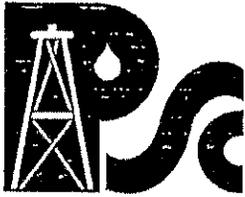
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations

Do not get this material in contact with eyes. Do not get this material in contact with skin. When using do not eat or drink. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Clear water-white to light yellow liquid.
Physical state	Liquid.
Form	Liquid.
Color	Colorless
Odor	Mild. Alcoholic.
Odor threshold	Not available.
pH	5.5 - 7.5
Vapor pressure	6.93 hPa estimated
Vapor density	Not available.
Boiling point	185 °F (85 °C) 345 °F (173.89 °C) estimated
Melting point/Freezing point	-57.61 °F (-49.78 °C) estimated
Solubility (water)	Not available.



Specific gravity	0.97 - 1.03 0.86 estimated
Relative density	Not available.
Flash point	104.00 °F (40.00 °C) 211.98 °F (99.99 °C) estimated
Flammability limits in air, upper, % by volume	12 % estimated
Flammability limits in air, lower, % by volume	2.5 % estimated
Auto-ignition temperature	749.07 °F (398.37 °C) estimated
VOC	21.3 % estimated
Percent volatile	75.27 % estimated
Other data	
Density	8.07 7.21 lbs/gal estimated
Flammability class	Combustible IIIA estimated
Flash point class	Combustible II

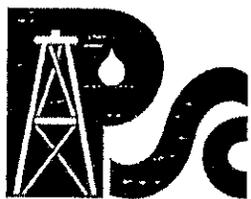
10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Caustics.
Hazardous decomposition products	Not available.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

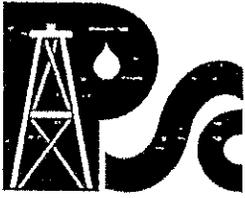
11. Toxicological Information

Toxicological data

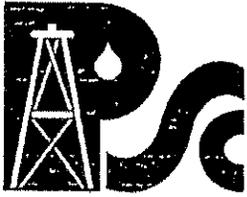
Product	Species	Test Results
PRO MICRO FLO (Mixture)		
Acute		
<i>Dermal</i>		
LD50	Guinea pig	27932.9609 mg/kg, estimated
	Rabbit	23859.4902 mg/kg, estimated
		279.3297 g/kg, estimated
	Rat	29864 mg/kg
<i>Inhalation</i>		
LC50	Rat	955 mg/l/4h
<i>Oral</i>		
LD50	Cat	20625 mg/kg, estimated
	Dog	32906.9805 mg/kg, estimated



Product	Species	Test Results
<i>Other</i> LD50	Guinea pig	110.125 g/kg, estimated
	Mouse	102.5 g/kg, estimated
		14571.5273 mg/kg, estimated
	Rabbit	44.706 g/kg, estimated
		84342.1016 mg/kg, estimated
	Rat	66.1842 g/kg, estimated
		10251 mg/kg
		30.0007 g/kg, estimated
	Mouse	3228.0476 mg/kg, estimated
	Rat	19.7176 g/kg, estimated
	10232.7744 mg/kg, estimated	
	2.2917 g/kg, estimated	
Components	Species	Test Results
1-Octanol (111-87-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5 g/kg
<i>Oral</i>		
LD50	Mouse	1800 mg/kg
D-Limonene (5989-27-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2000.0001 mg/kg
<i>Oral</i>		
LD50	Mouse	5600 - 6600 mg/kg
	Rat	4400 mg/kg
<i>Other</i>		
LD50	Mouse	1.3 g/kg
	Rat	0.11 g/kg
Ethylene Glycol (107-21-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	9530 mg/kg
<i>Oral</i>		
LD50	Mouse	14.6 g/kg



Components	Species	Test Results
	Rat	4000 mg/kg
Isopropyl alcohol (67-63-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	12870 mg/kg
		12800 mg/kg
	Rat	12870 mg/kg
<i>Inhalation</i>		
LC50	Rat	72.6 mg/l/4h
<i>Oral</i>		
LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
		4.5 g/kg
	Rabbit	6410 mg/kg
		5.03 g/kg
	Rat	4396 mg/kg
		4.7 g/kg
<i>Other</i>		
LD50	Mouse	1509 mg/kg
	Rat	1099 mg/kg
Sensitization	Not expected to be hazardous by OSHA criteria.	
Acute effects	Acute LD50: 10251 mg/kg, Rat, Oral Acute LD50: 29864 mg/kg, Rat, Dermal Acute LC50: 955 mg/l/4h, Rat, Inhalation	
Local effects	Contact may irritate or burn eyes. Components of the product may be absorbed into the body through the skin.	
Chronic effects	Hazardous by OSHA criteria. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.	
Carcinogenicity	Hazardous by OSHA criteria.	
ACGIH Carcinogens		
Ethylene Glycol (CAS 107-21-1)	A4 Not classifiable as a human carcinogen.	
Isopropyl alcohol (CAS 67-63-0)	A4 Not classifiable as a human carcinogen.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
D-Limonene (CAS 5989-27-5)	3 Not classifiable as to carcinogenicity to humans.	
Skin corrosion/irritation	Not expected to be hazardous by OSHA criteria.	
Epidemiology	Hazardous by OSHA criteria.	
Neurological effects	Hazardous by OSHA criteria.	



Further information

Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Product		Species	Test Results
PRO MICRO FLO (Mixture)	Algae	IC50	Algae
	Crustacea	EC50	Daphnia
	Fish	LC50	Fish

Components		Species	Test Results
1-Octanol (111-87-5)	Fish	LC50	Fish
	Aquatic		
	Fish	LC50	Fathead minnow (Pimephales promelas)
D-Limonene (5989-27-5)	Fish	LC50	Fish
	Aquatic		
	Crustacea	EC50	Water flea (Daphnia pulex)
	Fish	LC50	Fathead minnow (Pimephales promelas)
Ethylene Glycol (107-21-1)	Aquatic		
	Fish	LC50	Fathead minnow (Pimephales promelas)
Isopropyl alcohol (67-63-0)	Algae	IC50	Algae
	Crustacea	EC50	Daphnia
	Fish	LC50	Fish
	Aquatic		
	Fish	LC50	Bluegill (Lepomis macrochirus)

Ecotoxicity LC50: 581 mg/L, Fish, 96.00 Hours
 IC50: 13158 mg/L, Algae, 72.00 Hours

Persistence and degradability Not available.

Bioaccumulation / Accumulation

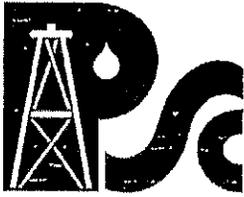
Bioaccumulative potential

Octanol/water partition coefficient log Kow

Isopropyl alcohol	0.05
Ethylene Glycol	-1.36
1-Octanol	3
D-Limonene	4.232

Partition coefficient

Isopropyl alcohol	0.05
Ethylene Glycol	-1.36



1-Octanol	3
D-Limonene	4.232

13. Disposal Considerations

Waste codes D001: Waste Flammable material with a flash point <140 F

Disposal instructions Dispose of this material and its container at hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose in accordance with all applicable regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

DOT

BULK

Basic shipping requirements:

UN number	NA1993
Proper shipping name	Combustible liquid, n.o.s. (Isopropyl alcohol)
Hazard class	Comb liq
Subsidiary hazard class	None
Packing group	III

Additional information:

Special provisions	IB3, T1, T4, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	241

TDG

Proper shipping name	FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol)
Hazard class	3
UN number	UN1993
Packing group	III
Marine pollutant	•
Special provisions	16

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Isopropyl alcohol)
Transport hazard class(es)	3
Packing group	III
ERG code	3L

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol)
Transport hazard class(es)	3
Subsidiary class(es)	•
Packing group	III
EmS No.	F-E, S-E*



IATA; TDG



15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)

Not regulated.

DEA Essential Chemical Code Number

Not regulated.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Ethylene Glycol (CAS 107-21-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethylene Glycol (CAS 107-21-1) Listed.

CERCLA (Superfund) reportable quantity

Ethylene Glycol: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No



Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - New Jersey RTK - Substances: Listed substance

Ethylene Glycol (CAS 107-21-1) Listed.
Isopropyl alcohol (CAS 67-63-0) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

1-Octanol (CAS 111-87-5) Listed.
Ethylene Glycol (CAS 107-21-1) Listed.
Isopropyl alcohol (CAS 67-63-0) Listed.

16. Other Information

HMIS® ratings Health: 2
Flammability: 2
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 2
Instability: 0

Disclaimer THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.

This data sheet contains changes from the previous version in section(s): Product and Company Identification: Alternate Trade Names
Accidental Release Measures: Methods for containment