



MERCOFrames OPTICAL CORP

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1. Product and Company Identification

Material name OPTIFOG ACTIVATOR
Revision date 04-11-2011
Version # 01
Product use Coating application.

2. Hazards Identification

Physical state Liquid.
Appearance Liquid.
Emergency overview WARNING

Causes eye irritation.

OSHA regulatory status This product is hazardous according to OSHA 29 CFR 1910.1200.

Potential health effects

Routes of exposure Eyes.

Eyes Causes eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin May cause skin irritation.

Inhalation In high concentrations, vapors may be irritating to the respiratory system.

Ingestion May cause discomfort if swallowed.

Signs and symptoms Prolonged or repeated contact may dry skin and cause irritation.

Potential environmental effects Harmful to aquatic organisms. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Fluoroalkyl alcohol substituted polyethylene glycol	65545-80-4	5 - 10
2-Propanol	67-63-0	1 - 3
Dipropylene glycol monomethyl ether	34590-94-8	1 - 3

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact Flush eyes thoroughly with water for at least 15 minutes. Remove any contact lenses. Get medical attention if any discomfort continues.

Skin contact Flush skin thoroughly with water. Get medical attention if any discomfort continues.

Inhalation Move into fresh air and keep at rest. Get medical attention if any discomfort continues.

Ingestion Rinse mouth thoroughly. Drink a few glasses of water or milk. Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.

Notes to physician Provide general supportive measures and treat symptomatically.

General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	The product is not flammable.
Extinguishing media	
Suitable extinguishing media	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Protection of firefighters	
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed.
Protective equipment and precautions for firefighters	Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
Hazardous combustion products	Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions	Avoid contact with skin and eyes. Wear suitable protective clothing. For personal protection, see section 8 of the MSDS.
Environmental precautions	Do not discharge into drains, water courses or onto the ground.
Methods for containment	Dike the spilled material, where this is possible. Collect and dispose of spillage as indicated in Section 13 of the MSDS.
Methods for cleaning up	Absorb spillage with non-combustible, absorbent material.

7. Handling and Storage

Handling	All handling to take place in well-ventilated area. Avoid inhalation of vapors and contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
Storage	Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Propanol (67-63-0)	STEL	400 ppm
	TWA	200 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	150 ppm
	TWA	100 ppm

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

Components	Type	Value
2-Propanol (67-63-0)	PEL	980 mg/m3
		400 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	PEL	600 mg/m3
		100 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
2-Propanol (67-63-0)	STEL	984 mg/m3
		400 ppm
	TWA	200 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	492 mg/m ³ 150 ppm
	TWA	909 mg/m ³ 606 mg/m ³ 100 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
2-Propanol (67-63-0)	STEL	400 ppm
	TWA	200 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	150 ppm
	TWA	100 ppm

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
2-Propanol (67-63-0)	STEL	400 ppm
	TWA	200 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	910 mg/m ³
	TWA	150 ppm
		100 ppm
		605 mg/m ³

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
2-Propanol (67-63-0)	STEL	1,230 mg/m ³ 500 ppm
	TWA	400 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	983 mg/m ³ 150 ppm
	TWA	909 mg/m ³ 606 mg/m ³
		100 ppm

Mexico. Occupational Exposure Limit Values

Components	Type	Value
2-Propanol (67-63-0)	STEL	1,225 mg/m ³ 500 ppm
	TWA	400 ppm
Dipropylene glycol monomethyl ether (34590-94-8)	STEL	980 mg/m ³ 150 ppm
	TWA	900 mg/m ³ 600 mg/m ³
		100 ppm

Engineering controls Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors.

Personal protective equipment

Eye / face protection Wear approved safety glasses or goggles.

Skin protection Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Liquid.
Color	Yellowish green.
Odor	Bitter.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	7
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1 at 4°C
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 cP

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions.
Conditions to avoid	Heat, sparks, flames.
Incompatible materials	Strong oxidizers, strong acids, and strong bases.
Hazardous decomposition products	Carbon Dioxide. Carbon monoxide.
Possibility of hazardous reactions	Hazardous reactions do not occur.

11. Toxicological Information

Toxicological data

Components	Test Results
Dipropylene glycol monomethyl ether (34590-94-8)	Acute Dermal LD50 Rabbit: 9.5 g/kg
2-Propanol (67-63-0)	Acute Oral LD50 Rat: 5.35 g/kg Acute Dermal LD50 Rabbit: 12,800 mg/kg Acute Oral LD50 Rat: 4.7 g/kg
Acute effects	May cause discomfort if swallowed.

Local effects	Causes eye irritation.
US ACGIH Threshold Limit Values: Skin designation	
	Dipropylene glycol monomethyl ether (CAS 34590-94-8) Can be absorbed through the skin.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
ACGIH Carcinogens	
2-Propanol (CAS 67-63-0)	A4 Not classifiable as a human carcinogen.
Mutagenicity	Not classified.
Reproductive effects	Not classified.
Symptoms and target organs	Prolonged or repeated contact may dry skin and cause irritation.
Further information	No other specific acute or chronic health impact noted.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Fluoroalkyl alcohol substituted polyethylene glycol (65545-80-4)	EC50 Daphnia: 8.3 mg/l 48 hours EC50 Pimephales promelas: 19 mg/l 96 hours
2-Propanol (67-63-0)	LC50 Bluegill (Lepomis macrochirus): > 1,400 mg/l 96 hours
Ecotoxicity	Harmful to aquatic life with long lasting effects.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The product is not readily biodegradable.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.
Mobility in environmental media	The product is soluble in water.

13. Disposal Considerations

Disposal instructions	Do not discharge into drains, water courses or onto the ground. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Waste from residues / unused products	Do not discharge into rivers, lakes, mountains, etc. because the product may affect the environment.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

DIPROPYLENE GLYCOL METHYL ETHER (CAS 34590-94-8) 1.0 % One-Time Export Notification only.

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

2-Propanol (CAS 67-63-0) 1.0 %

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

2-Propanol (CAS 67-63-0)

Listed.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

2-Propanol: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

Section 302 extremely hazardous substance (40 CFR 355, Appendix A)
 No

Section 311/312 (40 CFR 370)
 No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)
 Not controlled

WHMIS status
 Controlled

WHMIS classification
 D2B - Other Toxic Effects-TOXIC

WHMIS labeling**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
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)	Yes
New Zealand	New Zealand Inventory	Yes
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**US - California Hazardous Substances (Director's): Listed substance**

2-Propanol (CAS 67-63-0) Listed.

Dipropylene glycol monomethyl ether (CAS 34590-94-8) Listed.

US - Massachusetts RTK - Substance: Listed substance

2-Propanol (CAS 67-63-0) Listed.

Dipropylene glycol monomethyl ether (CAS 34590-94-8) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

2-Propanol (CAS 67-63-0) 500 LBS

US - New Jersey RTK - Substances: Listed substance

Dipropylene glycol monomethyl ether (CAS 34590-94-8) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

2-Propanol (CAS 67-63-0) Listed.

16. Other Information

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

Issue date

04-11-2011