

MSDS - Material Safety Data Sheet**Product Name: DFO Spray****MSDS No.: DFS200****I. Basic Information:****Manufacturer:** Sirchie Finger Print Laboratories**Address:** 100 Hunter Place**City, ST Zip:** Youngsville, NC 27596**Emergency Contact:** CHEMTREC**Emergency Telephone Number:** 800-424-9300**Contact:** Tech Support**Information Telephone Number:** 919-554-2244**Last Update:** 01-28-2008**Expiration Date:****Chemical State:** Liquid Gas Solid**Chemical Type:** Pure Mixture

2	Health
4	Flammability
1	Reactivity
H	Pers. Protection

II. Ingredients: Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB	Z	313				
0	1,8-Diazafluorene-9-one	<1							NE	NE	230 C
64197	Acetic acid	>5							10 ppm	10 ppm	103 F
106978	Butane	<1.125							800 ppm	800 ppm	
75081	Ethanthiol	0-50 ppm							0.5 ppm	0.5 ppm	
141786	Ethyl acetate	25							400 ppm	400 ppm	24 F
67561	Methanol	25					X		200 ppm	200 ppm	53.6 F
74986	Propane	>40.5							1,000 ppm	1,000 ppm	-156 F
115071	Propylene	<2.25					X		NE	NE	

III. Hazardous Identification:**Hazard Category:**
 Acute

 Chronic

 Fire

 Pressure

 Reactive
Hazardous Identification Information:

Flammable! May be fatal or cause blindness if ingested. May be harmful if inhaled. May be absorbed through the skin. Respiratory and digestive tract irritant. May cause skin and eye irritation. May cause freeze-burns to the skin and eyes. May cause central nervous system depression. May cause kidney and liver damage. May cause adverse reproductive and fetal effects based on animal testing.

This material is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

IV. First Aid Measures:**Route(s) of Entry:**

Inhalation, ingestion, skin, eyes

Health Hazards (Acute and Chronic):

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Acute: Freeze burns to the skin and eyes

Chronic: Dermatitis

Signs and Symptoms:

Inhalation: Dizziness, headache, disorientation, excitation, fatigue, inability to concentrate, vomiting, coughing, anesthesia, convulsions, unconsciousness, death

Ingestion: Excitement, headache, dizziness, drowsiness, nausea, collapse, unconsciousness, coma, death due to respiratory failure

Medical Conditions Generally Aggravated by Exposure:

Skin, eye, respiratory, liver, kidney, central nervous system diseases

Emergency and First Aid Procedures:

Inhalation: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen (To be administered by qualified medical personnel only!) Get medical attention.

Ingestion: If victim is conscious and alert, give 2 cups of water. (Never give anything by mouth to an unconscious person!) Induce vomiting. Get medical attention immediately.

Skin: Flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing. Seek medical attention if condition warrants.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Seek medical attention if condition warrants.

Notes to physician: Effects may be delayed. Ethanol may inhibit metabolism.

Other Health Warnings:

V. Fire Fighting Measures:

Flash Point: -156 F

Lower Explosive Limit: 2.1

Upper Explosive Limit: 9.0

F.P. Method:

Fire Extinguishing Media: Dry chemical, foam, carbon dioxide

Special Fire Fighting Procedures:

Wear self-contained breathing apparatus and protective clothing. Shut off source, if possible. Water fog or spray may be used to cool fire-exposed containers. Cool containers until well after fire is out. Allow fire to burn until gas flow is shut off, if possible.

Unusual Fire and Explosion:

Vapors from this product may travel some distance from original point to an ignition source and flash back. Heated containers may rupture violently and suddenly without warning due to vessel over-pressure (BLEVE). Fragmentation of the container should be anticipated. If flame is against the container, withdraw immediately on hearing a rising sound, if venting increases in volume or intensity, or if there is discoloration of the container due to fire.

"Empty" containers may contain product residue and may be dangerous. Empty containers should be completely drained and bunged and then disposed of according to local, state, and federal regulations.

VI. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:

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Shut off source, if possible. Wear vapor respirator, safety goggles, and rubber gloves. Remove sources of ignition (i.e. open flames, sparks). Contain spill. Soak up with dry, inert absorbent material (dry soda ash, calcium carbonate, sand, clay, earth, or vermiculite recommended; do not use flammable substances such as sawdust). Scoop up with non-sparking equipment. Dispose according to local, state, and federal regulations.

VII. Handling and Storage:

Precautions to be Taken:

Keep in tightly closed container. Secure container to prevent damage. Do not puncture or incinerate container. Protect from freezing. Avoid incompatible materials. Avoid all ignition sources (heat, open flame, spark). Bond and ground during transfer. Use only in well-ventilated areas. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor. Avoid ingestion. Wash thoroughly after handling.

Other Precautions:

Store in containers that have been properly purged and passified. (Oxidation of ethanethiol may occur in the presence of rust, air, or water.)

"Empty" containers may contain product residue and may be dangerous. Empty containers should be completely drained and banded and then disposed of according to local, state, and federal regulations.

VIII. Exposure Controls/Personal Protection:

Ventilation Requirements:

Use only in well-ventilated areas.

Personal Protective Equipment:

Safety goggles, gloves, vapor respirator, protective clothing

IX. Physical and Chemical Properties:

Boiling Point: -44 F

Melting Point: NE

Evaporation Rate (Butyl Acetate = 1): >1

Vapor Pressure (mm Hg.): 5,585

Specific Gravity (H₂O = 1): 0.50800

Vapor Density (AIR = 1): 1.5

Solubility In Water: Negligible

Appearance and Odor: Colorless liquefied petroleum gas

Other Information: Odor: Odorless, but repulsive if odorant (ethanethiol) has been added

X. Stability and Reactivity:

Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Incompatibility (Materials to Avoid):

Ignition sources (heat, open flame, spark), oxygen, strong oxidizing agents, rust, moisture, strong acids, lithium aluminum hydride + 2-chloromethylfuran, lithium tetrahydroaluminate, oleum, potassium t-butoxide, nitrates, strong alkalies, active metals, acetyl bromide, alkyl aluminum salts, beryllium dihydride, carbon tetrachloride + metals, chloroform + heat, chloroform + sodium hydroxide, cyanuric chloride, diethyl zinc, acetaldehyde, 2-aminoethanol, bromine pentafluoride, chlorine trifluoride, chromic anhydride + acetic anhydride, diallyl methyl carbinol + ozone, ethylene diamine, ethyleneimine, peroxides, permanganates, phosphorus isocyanate, phosphorus trichloride, hydroxides, xylene. See the NFPA Fire Protection Guide for all methanol and ethyl acetate incompatibility specifics.

Decomposition/By Products:

Carbon and sulfur dioxides, flammable hydrogen gas, nitrogen oxides, formaldehyde (carcinogen)

Hazardous Polymerization:

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Does not occur.

XI. Toxicological Information:

May be fatal or cause blindness if ingested. May be harmful if inhaled. May be absorbed through the skin. May cause central nervous system depression. May cause kidney and liver damage. May cause adverse reproductive and fetal effects based on animal testing.

XII. Ecological Information:

Prevent from entering sewers or waterways. May be toxic to some aquatic life.

XIII. Disposal Considerations:

Dispose according to local, state, and federal regulations.

Propane

RCRA classification: Ignitable (D001)

Ethyl acetate

RCRA U-Series: Waste no. U112 (Ignitable waste)

Methanol

RCRA U-Series: Waste no. U154 (Ignitable waste)

This material is banned from land disposal according to RCRA.

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

XIV. Transport Information:

Keep in tightly closed container. Secure container to prevent damage. Do not puncture or incinerate container. Protect from freezing. Avoid incompatible materials. Avoid all ignition sources (heat, open flame, spark). Bond and ground during transfer. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor. Avoid ingestion. Wash thoroughly after handling.

IATA

Shipping name: Aerosols, flammable

Hazard class: 2.1

UN no.: 1950

Flammable gas!

XV. Regulatory Information:

This product meets the following hazard definitions as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200): compressed gas, flammable gas, health hazard.

All ingredients, except for 1,8-diazafluorene-9-one, are listed on the TSCA inventory.

Methanol is listed as a hazardous air pollutant (HAP) under the Clean Air Act.

Acetic acid is listed as a Hazardous Substance under the Clean Water Act.

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XVI. Other Information:

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Be aware that with odorized product, the intensity of ethanethiol stench (its odor) may fade due to chemical oxidation (in the presence of rust, air, or moisture), adsorption, or absorption. Some people have nasal perception problems and may not be able to smell the ethanethiol stench. Other odors may mask or hide the ethanethiol stench. While ethanethiol may not impart the warning of the presence of propane in every instance, it is generally effective in a majority of situations. Familiarize yourself with this warning, and other facts associated with the so-called "odor-fade phenomenon."

Using this product under normal, properly instructed procedures should not be hazardous.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.