

MATERIAL SAFETY DATA SHEET



Conforms to 93/112/EC and ISO 11014-1

1. Chemical Product and Company Identification

Product Name: Monofluor**Product Number:** LS-191

**Chemical Names/
Description:**

Aromatic hydrocarbons and nonionic surfactants with scintillation phosphors

ManufacturerNational Diagnostics
305 Patton Drive
Atlanta, GA 30336**Telephone Numbers**(800) 526-3867
(404) 699-2121**Emergency Numbers****Chemtrec****(800) 424-9300 (U.S. & Canada)**
01-703-527-3887 (outside U.S. & Canada)

2. Composition/Information on Ingredients

Component	% Comp.	CAS #	EINECS #	TLV (Units)
Solvent Naphtha, Light Aromatic	60-70	64742-95-6	265-199-0	50 ppm
Linear alkyl phenyl ethoxylates	30 - 40	26027-38-3		N.A.
Butoxy Ethanol	1 - 5	111-76-2	203-805-0	25 ppm (skin)
Alcohol ethoxylate phosphate ester	1 - 5	51811-79-1		none established

EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

R: 10-22**Flammable. Harmful if swallowed.****S: (2-) 23-24-62****Keep out of reach of children. Do not breathe fumes.****Avoid contact with the skin. If swallowed, do not induce vomiting. Seek medical advice immediately and show this container or label.**

3. Hazards Identification

Appearance and Odor

Clear, colorless liquid; slight aromatic odor.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

Solvent Naphtha, Light Aromatic

POISON! DANGER! UNDILUTED COMPONENTS CAUSE BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE.

Linear alkyl phenyl ethoxylates

CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.

Butoxy Ethanol

CAUTION! SEVERELY IRRITATING TO THE EYES. IRRITATING TO THE SKIN, NOSE THROAT AND RESPIRATORY TRACT. TOXIC IF INHALED, INGESTED OR ABSORBED THROUGH SKIN.

Alcohol ethoxylate phosphate ester

CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:

Solvent Naphtha, Light Aromatic

CHRONIC EXPOSURE TO ORGANIC SOLVENTS HAS BEEN ASSOCIATED WITH VARIOUS NEUROTOXIC EFFECTS INCLUDING PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. SYMPTOMS INCLUDE: LOSS OF MEMORY, LOSS OF INTELLECTUAL ABILITY, AND LOSS OF COORDINATION.

Linear alkyl phenyl ethoxylates

NO ADVERSE EFFECTS HAVE BEEN DOCUMENTED IN HUMANS AS A RESULT OF CHRONIC EXPOSURE.

Butoxy Ethanol

NO INFORMATION FOUND.

Alcohol ethoxylate phosphate ester

NO ADVERSE EFFECTS HAVE BEEN DOCUMENTED IN HUMANS AS A RESULT OF CHRONIC EXPOSURE.

Potential Health Effects

Inhalation

Solvent Naphtha, Light Aromatic:

SLIGHTLY TOXIC. Breathing of the mists, vapors or fumes may irritate the nose, throat, and lungs. May cause central nervous system depression or effects. May cause cardiac sensitization, including arrhythmias (irregular heart beats) and death due to cardiac arrest. Chronic exposure to high doses may damage the peripheral nerves, resulting in numbness or tingling in the extremities. See also Reproductive Toxicity and Target Organ Statement for further special toxic effects.

Linear alkyl phenyl ethoxylates:

Vapors or mist, especially as generated from heating the material or as from exposure in poorly ventilated areas or confined spaces, may be irritating and cause discomfort in nose and throat. Prolonged exposure may cause difficulty breathing.

Butoxy Ethanol:

Vapors may cause irritation to the nose, throat, and respiratory tract and are toxic if inhaled.

Alcohol ethoxylate phosphate ester:

Vapors or mist, especially as generated from heating the material or as from exposure in poorly ventilated areas or confined spaces, may be irritating and cause discomfort in nose and throat. Prolonged exposure may cause difficulty breathing.

Ingestion

Solvent Naphtha, Light Aromatic:

MODERATELY TOXIC. May cause irritation of the mouth, throat, and gastrointestinal tract. Aspiration into lungs may cause chemical pneumonia and lung damage. Aspiration symptoms may be delayed in

onset by up to 24 hours. Exposure may also cause central nervous system symptoms similar to those listed under Signs and Symptoms of Overexposure - Inhalation. See also Reproductive Toxicity and Target Organ Statement for further special toxic effects.

Linear alkyl phenyl ethoxylates:

May be harmful by ingestion.

Butoxy Ethanol:

Moderately toxic if ingested.

Alcohol ethoxylate phosphate ester:

May be harmful by ingestion.

Skin

Solvent Naphtha, Light Aromatic:

SLIGHTLY IRRITATING. Contact may cause reddening, itching and inflammation. Repeated or prolonged skin contact may cause reddening, itching and inflammation. Defatting agent.

Linear alkyl phenyl ethoxylates:

Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort.

Butoxy Ethanol:

Product is mildly irritating to the skin and toxic if absorbed through the skin.

Alcohol ethoxylate phosphate ester:

Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort.

Eyes

Solvent Naphtha, Light Aromatic:

SLIGHTLY IRRITATING. Exposure to vapors, fumes or mists may cause irritation. Direct contact may cause irritation, redness, tearing, and blurred vision. Prolonged or repeated exposure may cause irritation and conjunctivitis.

Linear alkyl phenyl ethoxylates:

Causes irritation and possible injury to the cornea.

Butoxy Ethanol:

Causes severe eye irritation.

Alcohol ethoxylate phosphate ester:

Causes irritation and possible injury to the cornea.

Signs and Symptoms of Overexposure

Inhalation

Solvent Naphtha, Light Aromatic:

Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure. If CNS depression or effects occur, symptoms include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Linear alkyl phenyl ethoxylates:

Discomfort in nose and throat, nasal discharge, coughing, difficulty breathing.

Butoxy Ethanol:

Burning in nose and throat, coughing. Headache, dizziness, drowsiness, fatigue, nausea.

Alcohol ethoxylate phosphate ester:

Discomfort in nose and throat, nasal discharge, coughing, difficulty breathing.

Ingestion

Solvent Naphtha, Light Aromatic:

Ingestion symptoms may include salivation, pain, nausea, vomiting, and diarrhea. Exposure may also

cause central nervous system symptoms similar to those listed under Inhalation

Linear alkyl phenyl ethoxylates:

Abdominal discomfort, nausea, and diarrhea.

Butoxy Ethanol:

Headache, dizziness, drowsiness, fatigue, nausea, vomiting.

Alcohol ethoxylate phosphate ester:

Abdominal discomfort, nausea, and diarrhea.

Skin

Solvent Naphtha, Light Aromatic:

Reddening, itching, and inflammation.

Linear alkyl phenyl ethoxylates:

Local redness and swelling.

Butoxy Ethanol:

Redness, pain and itching.

Alcohol ethoxylate phosphate ester:

Local redness and swelling.

Eyes

Solvent Naphtha, Light Aromatic:

Irritation, redness, tearing, and blurred vision.

Linear alkyl phenyl ethoxylates:

Excess blinking and tear production. Marked redness and swelling of the eye with injury to the cornea.

Butoxy Ethanol:

Redness, tearing, and pain.

Alcohol ethoxylate phosphate ester:

Excess blinking and tear production. Marked redness and swelling of the eye with injury to the cornea.

Carcinogenicity

Solvent Naphtha, Light Aromatic:

Benzene, a known carcinogen, may be present in trace amounts, less than 50 ppm. Otherwise, there are no known or anticipated carcinogens present in Naphtha.

Linear alkyl phenyl ethoxylates:

Not listed by NTP or IARC as a known or possible carcinogen.

Butoxy Ethanol:

Not listed as a known or anticipated carcinogen by NTP or IARC.

Alcohol ethoxylate phosphate ester:

Not listed by NTP or IARC as a known or possible carcinogen.

Mutagenicity

Solvent Naphtha, Light Aromatic:

No information available.

Linear alkyl phenyl ethoxylates:

No information available.

Butoxy Ethanol:

No information found.

Alcohol ethoxylate phosphate ester:

No information available.

Reproductive Toxicity

Solvent Naphtha, Light Aromatic:

This product contains components which may cause adverse reproductive effects. Pregnant women may be at an increased risk from exposure. Consumption of alcoholic beverages may enhance toxic effects.

Linear alkyl phenyl ethoxylates:

No information available.

Butoxy Ethanol:

Inhalation exposure of pregnant rabbits caused some lethality to the dam and fetus at 200 ppm, but there were no effects at 100 ppm and below. Inhalation exposure to pregnant rats caused irritancy to the dams and related fetotoxicity at 200 and 100 ppm, but there were no effects at 50 ppm and below.

Alcohol ethoxylate phosphate ester:

No information available.

Teratogenic Effects

Solvent Naphtha, Light Aromatic:

This product contains components which may cause adverse developmental effects. Pregnant women may be at an increased risk from exposure. Consumption of alcoholic beverages may enhance toxic effects.

Linear alkyl phenyl ethoxylates:

No information available.

Butoxy Ethanol:

Has not been shown to cause birth defects.

Alcohol ethoxylate phosphate ester:

No information available.

Routes of Entry

Solvent Naphtha, Light Aromatic:

Inhalation, ingestion, or skin contact.

Linear alkyl phenyl ethoxylates:

Ingestion, inhalation.

Butoxy Ethanol:

Inhalation, ingestion, skin contact.

Alcohol ethoxylate phosphate ester:

Ingestion, inhalation.

Target Organ Statement

Solvent Naphtha, Light Aromatic:

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: kidney, liver, spleen, adrenals, thymus and central nervous system. Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin, kidney, liver, cardiovascular and respiratory systems.

Linear alkyl phenyl ethoxylates:

No information available.

Butoxy Ethanol:

Preexisting skin, eye, and lung disorders may be aggravated by exposure.

Alcohol ethoxylate phosphate ester:

No information available.

4. First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

DO NOT INDUCE VOMITING. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Flash Point	50 C	Flammable Limits	ND
Flash Point Method	PMCC*	Autoignition temperature	865.4 F

* Flash point value determined by Pensky-Martin Closed Cup method (PMCC). Upon request, alternate Tagliabue Closed Cup data (TCC) has been provided in some instances to local regulatory agencies.

Extinguishing media

Dry powder, foam, carbon dioxide. (Water may be ineffective.)

Protective Equipment

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Hazardous Combustion Products

Thermal decomposition products may include toxic oxides of nitrogen, sulfur, and carbon.

Unusual Fire and Explosion Hazards

Flammable liquid. Vapor forms explosive mixtures with air. Vapor may travel considerable distances to ignition source and flash back.

NFPA Codes: Health 1 Flammability 2 Reactivity 0

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Isolate hazard area and deny entry. Keep ignition sources out of area and shut off all ignition sources.

Absorb spill with inert material (e.g. dry sand or earth) then place in a chemical waste container.

Waste Disposal Method

Disposal must be made in accordance with applicable federal, state, and local regulations.

Personal Precautions

Wear appropriate protective equipment as specified in section 8.

7. Handling and Storage

Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

Transfer methods should avoid static sparks. Use explosion proof ventilation.

Storage

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat or ignition. Protect from physical damage. Isolate from incompatible materials (section 10).

Storage Temperature

Room Temperature

Disposal

Observe all national, state, and local regulations regarding product disposal. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids).

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

Component: Solvent Naphtha, Light Aromatic

ACGIH Threshold Limit Value (TLV): 50 ppm

OSHA Permissible Exposure Limit

(PEL):

Component: Linear alkyl phenyl ethoxylates

ACGIH Threshold Limit Value (TLV): N.A.

OSHA Permissible Exposure Limit

(PEL):

Component: Butoxy Ethanol

ACGIH Threshold Limit Value (TLV): 25 ppm (skin)

OSHA Permissible Exposure Limit
25 ppm

(PEL):

Component: Alcohol ethoxylate phosphate ester

ACGIH Threshold Limit Value (TLV): none established

OSHA Permissible Exposure Limit

(PEL):

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborn Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Other Control Measures

N.A.

9. Physical Properties

Boiling point 360 F

**Evaporation
Rate**

Melting point N.A.

**Solubility in
water**

Forms clear emulsion

Vapor**pressure (mmHg)** 2.0 mm Hg @ 25 C**pH** Neutral**Vapor density (Air = 1)** 4.8**Specific gravity (H₂O = 1)** 0.92**% volatile by volume** 70**10. Stability and Reactivity****Stability**

Stable under normal conditions of use.

Conditions to Avoid

Heat, sources of ignition, and incompatibles.

Hazardous Decomposition Products

Combustion products include hazardous oxides of carbon, nitrogen, and sulfur.

Hazardous Polymerization

Will not occur

Incompatibles

Solvent Naphtha, Light Aromatic:

Oxidizing agents.

Linear alkyl phenyl ethoxylates:

Oxidizing agents.

Butoxy Ethanol:

Strong oxidizing agents. Strong bases and salts of strong bases at elevated temperatures. Aluminum surfaces.

Alcohol ethoxylate phosphate ester:

Oxidizing agents.

11. Toxicological Information**Product LD50 Values**

Monofluor Oral Rat LD50 (mg/kg): No Data

Monofluor Dermal Rabbit LD50 (mg/kg): No Data

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Solvent Naphtha, Light Aromatic	No	No	3
Linear alkyl phenyl ethoxylates	No	No	none
Butoxy Ethanol	No	No	None
Alcohol ethoxylate phosphate ester	No	No	None

12. Ecological Information

Solvent Naphtha, Light Aromatic

No information available.

Linear alkyl phenyl ethoxylates

LC50 - 96hr Aquatic toxicity rating is believed to be > 1.00 - 10.00 ppm moderately toxic.

Butoxy Ethanol

No information available.

Alcohol ethoxylate phosphate ester

No information available.

13. Disposal Considerations

Observe all national, state, and local regulations regarding product disposal. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids).

14. Transport Information**D.O.T.**

Proper Shipping Name: Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

I.A.T.A.

Proper Shipping Name: Petroleum Products N.O.S.

Hazard Class: 3

UN Number: 1268

Packing Group: 3

I.M.O.

Proper Shipping Name: Petroleum Products N.O.S.

Hazard Class: 3

UN Number: 1268

Packing Group: 3

15. Regulatory Information**United States****TSCA Regulatory Statement**

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
Solvent Naphtha, Light Aromatic	Yes	No	No	Yes	Yes
Linear alkyl phenyl ethoxylates	No	No	No	Yes	No
Butoxy Ethanol	Yes	No	No	Yes	No
Alcohol ethoxylate phosphate ester	No	No	No	Yes	No

Europe**EEC Regulatory**

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

R: 10-22

Flammable. Harmful if swallowed.

S: (2-) 23-24-62

Keep out of reach of children. Do not breathe fumes.

Avoid contact with the skin. If swallowed, do not induce vomiting. Seek medical advice immediately and show this container or label.

16. Other Information

NFPA Codes: Health 1 Flammability 2 Reactivity 0

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.