

SAFETY DATA SHEET



Conforms to regulation (EC) no. EU 453/2010

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Monofluor

Product Number: LS-191

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

ChemTel Inc.

Contract number MIS8894340
1-800 255-3924 (United States, Canada, Puerto Rico & US Virgin Islands)
01-800-099-0731 (Mexico)
400-120-0751 (China)
000-800-100-4086 (India)
1-300-954-583 (Australia)
0-800-591-6042 (Brazil)
+1-813-255-3924 (All other regions)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H226 - Flammable Liquids (Category 3)
H302 - Acute Toxicity-Oral (Category 4)
H304 - Aspiration Hazard (Category 1)
H315 - Skin Corrosion/Irritation (Category 2)
H319 - Serious Eye Damage/Eye Irritation (Category 2A)
H336 - May cause drowsiness or dizziness
H411 - Chronic Hazards to the Aquatic Environment (Category 2)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements



DANGER

H226 - Flammable liquid and vapor.
H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.
P233 - Keep container tightly closed.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P273 - Avoid release to the environment.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician .
P331 - Do NOT induce vomiting.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Names/Description

Aromatic hydrocarbons and nonionic surfactants with scintillation phosphors

Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
Solvent Naphtha, Light Aromatic	60-70	64742-95-6	265-199-0	H226, H304, H315, H336, H411
Primary Alcohol Ethoxylate	5 - 10	68439-46-3	614-482-0	H318
Linear alkyl phenyl ethoxylates	30 - 40	26027-38-3	500-045-0	H302, H315, H319, H411
Butoxy Ethanol	1 - 5	111-76-2	203-905-0	H302, H312, H315, H319, H332

SECTION 4 - FIRST AID MEASURES

4.1 Description of 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.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

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.

Primary Alcohol Ethoxylate:

Sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure. May cause central nervous system depression or effects. Symptoms may 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.

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

Primary Alcohol Ethoxylate:

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.

Skin

Solvent Naphtha, Light Aromatic:

Reddening, itching, and inflammation.

Primary Alcohol Ethoxylate:

Drying, reddening, itching, and cracking. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

Linear alkyl phenyl ethoxylates:

Local redness and swelling.

Butoxy Ethanol:

Redness, pain and itching.

Eyes

Solvent Naphtha, Light Aromatic:

Irritation, redness, tearing, and blurred vision.

Primary Alcohol Ethoxylate:

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.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

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

Hazardous Decomposition Products

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

Hazardous Polymerization

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

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.

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

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.

6.4 References to Other Sections

For disposal information see Section 13. For protective clothing and equipment see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe 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.

7.2 Conditions for Safe Storage (including any incompatibles)

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).

Incompatibles

Solvent Naphtha, Light Aromatic:

Oxidizing agents.

Primary Alcohol Ethoxylate:

Strong oxidizing agents. Aluminum surfaces at temperatures above 120 degrees..

Linear alkyl phenyl ethoxylates:

Oxidizing agents.

Butoxy Ethanol:

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

7.3 Specific End Uses

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

Component: Solvent Naphtha, Light Aromatic

ACGIH Threshold Limit Value (TLV):
50 ppm

OSHA Permissible Exposure Limit (PEL):
None established

Component: Primary Alcohol Ethoxylate

ACGIH Threshold Limit Value (TLV):
none established

OSHA Permissible Exposure Limit (PEL):
None established

Component: Linear alkyl phenyl ethoxylates

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

OSHA Permissible Exposure Limit (PEL):
None established

Component: Butoxy Ethanol

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

OSHA Permissible Exposure Limit (PEL):
25 ppm

8.2 Exposure Controls

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne 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, airtight 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.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, colorless liquid	b. Odor	Slight aromatic
c. Odor Threshold	N.A.	d. pH	Neutral
e. Melting/Freezing Point (°C)	0	f. Boiling point (°C)	182.2
g. Flash Point (°C)	50	h. Evaporation Rate	< 0.1 Bu-Acetate = 1
i. Flammability	Combustible	j. Upper/Lower Flammability or Explosive Limits	ND
k. Vapor Pressure	2.0 mm Hg @ 25 C	l. Vapor Density (Air = 1)	4.8
m. Relative Density	0.92	n. Water Solubility	Forms clear emulsion
o. Partition Coefficient n-octanol/water	Mixture	p. Autoignition Temperature (°C)	865.4 F
q. Decomposition Temperature (°C)	Not applicable.	r. Viscosity	3.8 cSt @ 40 C
s. Explosive Properties	volatile combustible solvent	t. Oxidizing Properties	Not an oxidizer

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Not reactive under normal conditions of use.

10.2 Chemical Stability

Stable under recommended conditions of use and storage.

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid

Heat, sources of ignition, and incompatibles.

10.5 Incompatible Materials

Solvent Naphtha, Light Aromatic:

Oxidizing agents.

Primary Alcohol Ethoxylate:

Strong oxidizing agents. Aluminum surfaces at temperatures above 120 degrees..

Linear alkyl phenyl ethoxylates:

Oxidizing agents.

Butoxy Ethanol:

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

10.6 Hazardous Decomposition Products

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

SECTION 11 - TOXICOLOGICAL INFORMATION

Product LD50 Values

Oral Rat LD50 (mg/kg)

No Data

Dermal Rabbit LD50 (mg/kg)

No Data

Component Cancer List Status

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

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.

Primary Alcohol Ethoxylate

Information not found.

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.

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.

Primary Alcohol Ethoxylate

Moderately toxic by ingestion.

Linear alkyl phenyl ethoxylates

May be harmful by ingestion.

Butoxy Ethanol

Moderately toxic if ingested.

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.

Primary Alcohol Ethoxylate

Severely irritating to the skin and moderately toxic if absorbed through the skin.

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.

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.

Primary Alcohol Ethoxylate

Severely irritating to the eyes.

Linear alkyl phenyl ethoxylates

Causes irritation and possible injury to the cornea.

Butoxy Ethanol

Causes severe eye irritation.

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.

Primary Alcohol Ethoxylate

No information available.

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.

Mutagenicity

Solvent Naphtha, Light Aromatic

No information available.

Primary Alcohol Ethoxylate

No information available.

Linear alkyl phenyl ethoxylates

No information available.

Butoxy Ethanol

No information found.

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.

Primary Alcohol Ethoxylate

No information available.

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.

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.

Primary Alcohol Ethoxylate

No information available.

Linear alkyl phenyl ethoxylates

No information available.

Butoxy Ethanol

Has not been shown to cause birth defects.

Routes of Entry

Solvent Naphtha, Light Aromatic
Inhalation, ingestion, or skin contact.

Primary Alcohol Ethoxylate
Inhalation, ingestion, skin contact.

Linear alkyl phenyl ethoxylates
Ingestion, inhalation.

Butoxy Ethanol
Inhalation, ingestion, skin contact.

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.

Primary Alcohol Ethoxylate
No information available.

Linear alkyl phenyl ethoxylates
No information available.

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

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

COMPONENT: Solvent Naphtha, Light Aromatic

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LL50 (96 hr, fathead minnow) 8.2mg/l	EL50 (48hr, daphnia) 4.5mg/l	EL50 3.1mg/l	EL50 15mg/l
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	PNEC 0.4-20 mg/l	PNEC 0.4-20 mg/l	PNEC 0.4-20 mg/l

COMPONENT: Primary Alcohol Ethoxylate

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

COMPONENT: Linear alkyl phenyl ethoxylates

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	LC50 (48hr daphnia) 1.8mg/l	No data	EC50 (48hr) 50mg/l
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

COMPONENT: Butoxy Ethanol

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96hr, trout) 1464mg/l	EC50 (48 hr daphnia) 1800 mg/L	EC50 (72 hr) 911mg/l	Toxicity Threshold 483mg/L
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

12.2 Persistence and Degradability

Solvent Naphtha, Light Aromatic

Inherently biodegradable: 74% elimination in 28 days

Primary Alcohol Ethoxylate

No data

Linear alkyl phenyl ethoxylates

Readily biodegradable: 97% elimination in 30 days.

Butoxy Ethanol

Readily biodegradable (90% in 28 days)

12.3 Bioaccumulative Potential

Solvent Naphtha, Light Aromatic

No data

Primary Alcohol Ethoxylate

No data

Linear alkyl phenyl ethoxylates

No data

Butoxy Ethanol

No data

12.4 Mobility in Soil

Solvent Naphtha, Light Aromatic

log Koc ~2

Primary Alcohol Ethoxylate

No data

Linear alkyl phenyl ethoxylates

No data

Butoxy Ethanol

No data

12.5 Results of PBT and vPvB Assessment

Solvent Naphtha, Light Aromatic

not PBT / vPvB

Primary Alcohol Ethoxylate

No data

Linear alkyl phenyl ethoxylates

substance is PBT / vPvB

Butoxy Ethanol

Not PBT/vPvB

12.6 Other Adverse Effects

Solvent Naphtha, Light Aromatic

None

Primary Alcohol Ethoxylate

None

Linear alkyl phenyl ethoxylates

None

Butoxy Ethanol

None

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	1268	1268	1268	N.A.
14.2 Shipping Name	Petroleum Products N.O.S.	Petroleum Products N.O.S.	Petroleum Products N.O.S.	Not regulated.
14.3 Hazard Class	3	3	3	N.A.
14.4 Packing Group	III	III	III	N.A.
14.5 Environmental Hazards	N.A.	N.A.	Not regulated	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

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
Primary Alcohol Ethoxylate	No	No	No	Yes	No
Linear alkyl phenyl ethoxylates	No	No	No	Yes	No
Butoxy Ethanol	Yes	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION

Revisional Updates

8/8/2023 - Updated Section 14.5
4/26/2019 - Updated Section 1.4
5/29/2015 - Updated Sections 2.1 and 3.1
8/12/2013 - Released Version 1.0

NFPA Codes

Health 1 Flammability 2 Reactivity 0

Dangers

Solvent Naphtha, Light Aromatic

H226 - Flammable liquid and vapor.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.

Primary Alcohol Ethoxylate

H318 - Causes serious eye damage.

Linear alkyl phenyl ethoxylates

H302 - Harmful if swallowed
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Butoxy Ethanol

H302 - Harmful if swallowed
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.

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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.