

# 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: Monoflow 4

Product Number: LS-284

### 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]

H225 - Flammable Liquids (Category 2)  
H302 - Acute Toxicity-Oral (Category 4)  
H304 - Aspiration Hazard (Category 1)  
H312 - Acute Toxicity-Dermal (Category 4)  
H319 - Serious Eye Damage/Eye Irritation (Category 2A)  
H332 - Acute Toxicity-Inhalation (Category 4)  
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

H225 - Highly flammable liquid and vapor.  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways.  
H312 - Harmful in contact with skin.  
H319 - Causes serious eye irritation.  
H332 - Harmful if inhaled.  
H336 - May cause drowsiness or dizziness.  
H411 - Toxic to aquatic life with long lasting effects.  
P233 - Keep container tightly closed.  
P260 - Do not breathe dust/fumes/gas/mist/vapors/spray.  
P273 - Avoid release to the environment.  
P331 - Do NOT induce vomiting.  
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician .  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
P304+P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P308+P313 - IF exposed or concerned: Call a POISON CENTER or doctor/physician.

### 2.3 Other Hazards

None found.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixture

#### Chemical Names/Description

Aromatic hydrocarbons, cosolvents, and surfactants with scintillation phosphors

#### Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
Solvent Naphtha, Light Aromatic	50 - 60	64742-95-6	265-199-0	H226, H304, H315, H336, H411
Methanol	5 - 10	67-56-1	200-659-6	H225, H301, H311, H331, H371
Alcohol ethoxylate phosphate ester	20 - 30	51811-79-1		H315, H319

## 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.

##### Methanol:

Irritation of the respiratory tract and mucous membranes. For central nervous system symptoms which may occur due to exposure by inhalation, see Ingestion.

##### 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

##### Methanol:

Effects may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death.

##### Alcohol ethoxylate phosphate ester:

Abdominal discomfort, nausea, and diarrhea.

#### Skin

##### Solvent Naphtha, Light Aromatic:

Reddening, itching, and inflammation.

##### Methanol:

Exposure may cause symptoms similar to those listed under Ingestion.

##### Alcohol ethoxylate phosphate ester:

Local redness and swelling.

#### Eyes

##### Solvent Naphtha, Light Aromatic:

Irritation, redness, tearing, and blurred vision.

##### Methanol:

Irritation, redness, pain, and inflammation.

**Alcohol ethoxylate phosphate ester:**

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

### 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

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

#### Hazardous Decomposition Products

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

#### 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.

##### Methanol:

Acetyl bromide, calcium carbide, chlorine, chromic anhydride, cyanuric chloride, dichloromethane, diethyl zinc, lead perchlorate, magnesium, metals, strong oxidizers, perchloric acid, phosphorous trioxide, potassium, sodium hypochlorite, sulfuric acid and zinc.

##### Alcohol ethoxylate phosphate ester:

Oxidizing agents.

### 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: Methanol**

ACGIH Threshold Limit Value (TLV): 200 ppm

OSHA Permissible Exposure Limit (PEL): None established

**Component: Alcohol ethoxylate phosphate ester**

ACGIH Threshold Limit Value (TLV): none established

OSHA Permissible Exposure Limit (PEL): None established

**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, 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.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on Basic Physical & Chemical Properties**

<b>a. Appearance</b>	Clear, colorless liquid	<b>b. Odor</b>	Slight aromatic
<b>c. Odor Threshold</b>	N.A.	<b>d. pH</b>	Neutral
<b>e. Melting/Freezing Point (°C)</b>	0	<b>f. Boiling point (°C)</b>	182.2
<b>g. Flash Point (°C)</b>	23	<b>h. Evaporation Rate</b>	< 0.1 Bu-Acetate = 1
<b>i. Flammability</b>	Combustible	<b>j. Upper/Lower Flammability or Explosive Limits</b>	ND
<b>k. Vapor Pressure</b>	2.0 mm Hg @ 25 C	<b>l. Vapor Density (Air = 1)</b>	4.8
<b>m. Relative Density</b>	0.92	<b>n. Water Solubility</b>	Gels w/ small quant.
<b>o. Partition Coefficient n-octanol/water</b>	Mixture	<b>p. Autoignition Temperature (°C)</b>	463
<b>q. Decomposition Temperature (°C)</b>	N.A.	<b>r. Viscosity</b>	5.5 cSt @ 23 C
<b>s. Explosive Properties</b>	Contains a volatile, combustible solvent	<b>t. Oxidizing Properties</b>	Not an oxidizer

**SECTION 10 - STABILITY AND REACTIVITY****10.1 Reactivity**

Contains a volatile, combustible solvent. May react with strong oxidizers. Can be made to burn. Contains acidic components that can attack metals

**10.2 Chemical Stability**

Stable under normal conditions of use.

**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 or ignition, and incompatibles.

**10.5 Incompatible Materials**

**Solvent Naphtha, Light Aromatic:**  
Oxidizing agents.

**Methanol:**

Acetyl bromide, calcium carbide, chlorine, chromic anhydride, cyanuric chloride, dichloromethane, diethyl zinc, lead perchlorate, magnesium, metals, strong oxidizers, perchloric acid, phosphorous trioxide, potassium, sodium hypochlorite, sulfuric acid and zinc.

**Alcohol ethoxylate phosphate ester:**

Oxidizing agents.

**10.6 Hazardous Decomposition Products**

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

## 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
Methanol	No	No	None
Alcohol ethoxylate phosphate ester	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.

##### Methanol

May irritate the respiratory tract and mucuous membranes. Exposure may cause central nervous system symptoms similar to those listed under Ingestion.

##### 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.

##### Methanol

Primary toxic effects are metabolic acidosis and visual system damage. Visual system damage may progress from visual blurring to complete blindness. May cause harmful central nervous system effects which may be delayed.

##### 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.

##### Methanol

Absorption from prolonged or massive skin contact may cause poisoning. Repeated or prolonged contact may result in defatting, redness, itching, inflammation, cracking and possible secondary infection. Exposure may cause symptoms similar to those listed under ingestion.

##### 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.

##### Methanol

Exposure to liquid, vapors, fumes or mists may cause irritation. Direct contact may cause irritation, pain, corneal inflammation and possible corneal damage.

##### Alcohol ethoxylate phosphate ester

Causes irritation and possible 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.

**Methanol**

This component is not listed as a 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.

**Methanol**

No information available.

**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.

**Methanol**

Possible reproductive hazard.

**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.

**Methanol**

No information available.

**Alcohol ethoxylate phosphate ester**

No information available.

**Routes of Entry****Solvent Naphtha, Light Aromatic**

Inhalation, ingestion, or skin contact.

**Methanol**

Inhalation, ingestion, or 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.

**Methanol**

Chronic intoxication may cause degenerative changes in liver, kidneys, brain, gastrointestinal tract, and heart muscle. Persons with pre-existing liver impairment, skin and respiratory disorders may be at an increased risk from exposure.

**Alcohol ethoxylate phosphate ester**

No information available.

**SECTION 12 - ECOLOGICAL INFORMATION****12.1 Toxicity****COMPONENT: Solvent Naphtha, Light Aromatic**

	<b>Vertebrates</b>	<b>Invertebrates</b>	<b>Algae</b>	<b>Microorganisms</b>
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
	<b>Birds</b>	<b>Arthropods</b>	<b>Plants</b>	<b>Microorganisms</b>
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: Methanol**

	<b>Vertebrates</b>	<b>Invertebrates</b>	<b>Algae</b>	<b>Microorganisms</b>
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96hr, bluegill) 15400 mg/L	EC50 (48 hr, daphnia) > 10000 mg/L	EC50 (96 hr) 22000 mg/L	IC50 (3hr) > 1000 mg/L
	<b>Birds</b>	<b>Arthropods</b>	<b>Plants</b>	<b>Microorganisms</b>
Terrestrial Environment Toxicity (ppm unless otherwise noted)	IC50 (3 day, sativa) 41000 mg/L	No data	No data	No data
<b>COMPONENT: Alcohol ethoxylate phosphate ester</b>				
	<b>Vertebrates</b>	<b>Invertebrates</b>	<b>Algae</b>	<b>Microorganisms</b>
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data
	<b>Birds</b>	<b>Arthropods</b>	<b>Plants</b>	<b>Microorganisms</b>
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

### Methanol

Readily biodegradable (95% elimination in 20 days)

### Alcohol ethoxylate phosphate ester

Not readily biodegradable- 13% elimination in 28 days

## 12.3 Bioaccumulative Potential

### Solvent Naphtha, Light Aromatic

No data

### Methanol

BCF<10

### Alcohol ethoxylate phosphate ester

No data

## 12.4 Mobility in Soil

### Solvent Naphtha, Light Aromatic

log Koc ~2

### Methanol

Koc <1

### Alcohol ethoxylate phosphate ester

Ultimate destination: water or sediment

## 12.5 Results of PBT and vPvB Assessment

### Solvent Naphtha, Light Aromatic

not PBT / vPvB

### Methanol

not PBT or vPvB

### Alcohol ethoxylate phosphate ester

No data

## 12.6 Other Adverse Effects

### Solvent Naphtha, Light Aromatic

None

### Methanol

None

### Alcohol ethoxylate phosphate ester

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	1268
14.2 Shipping Name	Petroleum Products N.O.S. (Naphtha Solvent)	Petroleum Products N.O.S.	Petroleum Products N.O.S. (Naphtha Solvent)	Petroleum Products N.O.S.
14.3 Hazard Class	3	3	3	3
14.4 Packing Group	III	III	III	III
14.5 Environmental Hazards	N.A.	N.A.	Marine pollutant	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
Methanol	Yes	No	No	Yes	Yes
Alcohol ethoxylate phosphate ester	No	No	No	Yes	No

#### Europe

##### EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

## SECTION 16 - OTHER INFORMATION

### Revisional Updates

4/26/2019 - Updated Section 1.4

5/29/2015 - Updated Sections 2.1 and 3.2

10/25/2013 - Released Version 1.0

### NFPA Codes

Health 1 Flammability 3 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.

#### Methanol

H225 - Highly flammable liquid and vapor.

H301 - Toxic if swallowed

H311 - Toxic in contact with skin.

H331 - Toxic if inhaled.

H371 - May cause damage to organs.

#### Alcohol ethoxylate phosphate ester

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

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