

MATERIAL SAFETY DATA SHEET



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

1. Chemical Product and Company Identification

Product Name: Solusol

Product Number: LS-311

**Chemical Names/
Description:**

Mixture of toluene, methanol, and cationic surfactant.

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30336

Telephone Numbers

(800) 526-3867
(404) 699-2121

Emergency Numbers

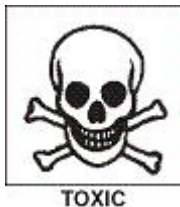
Chemtrec

(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)
Methanol	20-30%	67-56-1	200-659-6	200 ppm
Toluene	40-60%	108-88-3	239-135-7	50 ppm
Hyamine Hydroxide	20-30%	498-77-1		none determined

EEC LABEL SYMBOL AND CLASSIFICATION



R: 11 - 23/25 - 34

Highly flammable. Toxic by inhalation and if swallowed.

Causes burns.

S: 16 - 24 - 45

Keep away from sources of ignition. No smoking. Avoid contact with skin. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

3. Hazards Identification

Appearance and Odor

Straw colored liquid with aromatic hydrocarbon odor.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

Methanol

WARNING! HARMFUL OR FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE BLINDNESS. MAY BE IRRITATING TO THE SKIN, EYES, AND RESPIRATORY TRACT. TOXIC EFFECTS MAY BE DELAYED.

Toluene

POISON! DANGER! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. VAPOR HARMFUL. FLAMMABLE LIQUID AND VAPOR. MAY AFFECT LIVER, KIDNEYS, BLOOD SYSTEM, OR CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:

Methanol

MARKED IMPAIRMENT OF VISION HAS BEEN REPORTED. OVEREXPOSURE MAY CAUSE LIVER, KIDNEY, AND ADVERSE CNS EFFECTS. POSSIBLE REPRODUCTIVE HAZARD. REPEATED OR PROLONGED EXPOSURE MAY CAUSE SKIN IRRITATION.

Toluene

REPORTS OF CHRONIC POISONING WITH TOLUENE DESCRIBE ANEMIA, DECREASED BLOOD CELL COUNT AND BONE MARROW HYPOPLASIA. LIVER AND KIDNEY DAMAGE MAY OCCUR. REPEATED OR PROLONGED CONTACT HAS A DEFATTING ACTION, CAUSING DRYING, REDNESS, DERMATITIS. EXPOSURE TO TOLUENE MAY AFFECT THE DEVELOPING FETUS.

Potential Health Effects

Inhalation

Methanol:

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

Toluene:

Inhalation may cause irritation of the upper respiratory tract. Very high concentrations may cause unconsciousness and death.

Ingestion

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.

Toluene:

Swallowing may cause abdominal spasms and other symptoms that parallel over-exposure from inhalation. Aspiration of material into the lungs can cause chemical pneumonitis, which may be fatal.

Skin

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.

Toluene:

Causes irritation. May be absorbed through skin.

Eyes

Methanol:

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

Toluene:

Causes severe eye irritation.

Signs and Symptoms of Overexposure

Inhalation

Methanol:

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

Toluene:

Symptoms of overexposure may include fatigue, confusion, headache, dizziness and drowsiness. Peculiar skin sensations (e.g. pins and needles) or numbness may be produced.

Ingestion

Methanol:

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

Toluene:

As with inhalation, symptoms of overexposure may include fatigue, confusion, headache, dizziness and drowsiness. Peculiar skin sensations (e.g. pins and needles) or numbness may be produced.

Skin

Methanol:

Exposure may cause symptoms similar to those listed under Ingestion.

Toluene:

Redness, pain, swelling by irritation. If absorbed through skin, other symptoms may parallel inhalation and ingestion above.

Eyes

Methanol:

Irritation, redness, pain, and inflammation.

Toluene:

Redness and pain.

Carcinogenicity

Methanol:

This component is not listed as a carcinogen by NTP or IARC.

Toluene:

Toluene is not listed as a known or anticipated carcinogen by NTP. IARC lists toluene as category 3, unclassifiable as to its carcinogenicity in humans.

Mutagenicity

Methanol:

No information available.

Toluene:

No information found.

Reproductive Toxicity

Methanol:

Possible reproductive hazard.

Toluene:

Animal tests have shown that this substance possibly causes toxic effects upon human reproduction.

Teratogenic Effects

Methanol:

No information available.

Toluene:

Exposure to toluene may affect the developing fetus.

Routes of Entry

Methanol:

Inhalation, ingestion, or skin contact.

Toluene:

Inhalation, ingestion, skin absorption.

Target Organ Statement

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.

Toluene:

Persons with pre-existing skin disorders or impaired liver or kidney function may be more susceptible to the effects of this substance. Alcoholic beverage consumption can enhance the toxic effects of this substance.

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	7 C (45F)	Flammable Limits	lcl: 3.3; uel 19
Flash Point Method	TCC	Autoignition temperature	422C (792F)

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

Oxides of carbon and nitrogen.

Unusual Fire and Explosion Hazards

Listed fire data is for the toluene component. Above the flash point, vapor-air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire or explosion.

Sensitive to static discharge.

NFPA Codes: Health 2 Flammability 3 Reactivity 0

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Eliminate source of ignition. Ventilate area. Cover with inert, absorbent material (vermiculite, dry sand, earth) to confine spill and sweep or shovel into container. Close container tightly. Avoid breathing vapors. Use nonsparking tools.

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 refrigerated, dry, ventilated area away from sources of heat or ignition. Protect from physical damage. Isolate from incompatible materials (section 10).

Storage Temperature

4 - 8 C

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 (vapor, liquids, dust, solids).

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

Component: Methanol

ACGIH Threshold Limit Value (TLV): 200 ppm

OSHA Permissible Exposure Limit
(PEL):

Component: Toluene

ACGIH Threshold Limit Value (TLV): 50 ppm

OSHA Permissible Exposure Limit
(PEL): 200 ppm

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 65 - 111 C

Evaporation Rate No Data

Melting point No Data

Solubility in water 50% Extractable

Vapor pressure (mmHg) 84 @ 25 C

pH N.A.

Vapor density (Air = 1) No Data

Specific gravity (H₂O = 1) .91 g/ml

% volatile by volume 75

10. Stability and Reactivity

Stability

Stable under ordinary conditions of use and storage.

Conditions to Avoid

Heat, flames, ignition sources, and incompatibles.

Hazardous Decomposition Products

Carbon oxides, nitrogen oxides, and formaldehyde gas form when heated to decomposition.

Hazardous Polymerization

Will not occur

Incompatibles

Methanol:

Incompatible with 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.

Toluene:

Heat, flame, strong oxidizers, nitric and sulfuric acids, chlorine, nitrogen tetraoxide; will attack some forms of plastics, rubber, coatings.

Hyamine Hydroxide:

Strong oxidizing or reducing agents.

11. Toxicological Information

Product LD50 Values

Solusol Oral Rat LD50 (mg/kg): 22512

Solusol Dermal Rabbit LD50 (mg/kg): 63200

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Methanol	No	No	None
Toluene	No	No	3
Hyamine Hydroxide	No	No	None

12. Ecological Information

Methanol

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into the air, this material is expected to exist in the aerosol phase with a short half-life. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into air, this material is expected to have a half-life between 10 and 30 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition. This material is expected to be slightly toxic to aquatic life.

Toluene

When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. Bioconcentration factor = 13.2 (eels). This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

Hyamine Hydroxide

No information found.

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 (vapor, liquids, dust, solids).

14. Transport Information

D.O.T.

Proper Shipping Name: Flammable liquid, toxic, N.O.S.

Hazard Class: 3

UN Number: 1992

Packing Group: II

I.A.T.A.

Proper Shipping Name: Flammable liquid, toxic, N.O.S.

Hazard Class: 3,6.1

UN Number: 1992

Packing Group: II

I.M.O.

Proper Shipping Name: Flammable liquid, toxic, N.O.S.

Hazard Class: 3

UN Number: 1992

Packing Group: II

15. Regulatory Information

United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

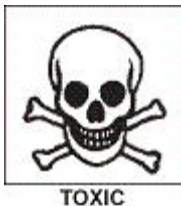
Component	Fire	Pressure	Reactivity	Acute	Chronic
Methanol	Yes	No	No	Yes	Yes
Toluene	Yes	No	No	Yes	Yes
Hyamine Hydroxide	No	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



R: 11 - 23/25 - 34

Highly flammable. Toxic by inhalation and if swallowed.

Causes burns.

S: 16 - 24 - 45

Keep away from sources of ignition. No smoking. Avoid contact with skin. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other Information

NFPA Codes: Health 2 Flammability 3 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.