

MATERIAL SAFETY DATA SHEET

Lab-solvent

3. Hazards Identification

Primary Routes(s) Of Entry - Inhalation, Skin absorption, Skin contact, Eye contact

Eye Hazards - Vapor is irritating to human mucous membranes and the eyes, possibly causing stinging, tearing, redness and swelling of the eyes. Liquid contact and high vapor concentrations may cause possible corneal damage.

Skin Hazards - May cause mild to moderate skin and mucous membrane irritation. Prolonged skin contact may defat the skin and produce dermatitis. Some possible symptoms include redness, burning, drying and cracking of the skin.

Absorption of this material through the skin is possible. But it is unlikely that harmful amounts will be absorbed from a single, brief exposure. Absorption of large amounts from prolonged exposure may produce central nervous system depression and effects similar to those from inhalation.

Ingestion Hazards - Accidental swallowing of small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Aspiration into the lungs during swallowing or vomiting can result in lung inflammation, lung injury and even death due to chemical pneumonia.

Ingestion may also cause irritation of the gastrointestinal tract and other systemic effects from absorption. Possible symptoms could include: metallic taste, nausea, vomiting, diarrhea, central nervous system depression (dizziness, drowsiness, weakness, fatigue, headache, unconsciousness), muscle weakness, loss of coordination, coma, confusion, or possibly death. Kidney and liver damage may follow ingestion.

Inhalation Hazards - Inhalation of low concentrations under normal conditions of handling is not likely to cause harmful effects. Inhalation of high concentrations may cause irritation to the nose, throat and lungs, and central nervous system effects.

Prolonged or intentional exposure may lead to the damage of many organ systems, including the central and peripheral nervous system, vision, hearing, liver, kidneys, heart and blood. Symptoms may include: fatigue, headache, irritation, nausea, sleep disturbance and alteration in memory. Overexposures to components of this product have been associated with cardiac sensitization and kidney damage.

Subchronic (Target Organ Effects) - Exposure may result in the following: reversible effects upon the liver, renal, nervous systems. Additionally, the kidneys, heart, blood and peripheral systems may be effected. The nervous system appears to be the most sensitive. At high concentrations, some possible symptoms may appear: incoordination, ataxia, unconsciousness, cardiac sensitization, respiratory tract damage, effects on hearing, central nervous system damage and possibly death.

Chronic/Carcinogenicity Effects - This material is not expected to cause cancer in humans.

Teratogenicity (Birth Defects) - Components of this product have been toxic to the fetus of laboratory animals at doses toxic to the mother, and have caused birth defects when dosed orally. The significance of animal data to human exposure is unknown. Prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans.

Conditions Aggravated By Exposure - Individuals with diseases of the respiratory tract, skin, liver, kidneys, eyes and nervous system should avoid exposure. Those persons susceptible to dermatitis should limit exposure.

4. First Aid Measures

Eye - In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin - Remove contaminated clothing and shoes. Wash affected areas with soap and water. Get medical attention immediately if irritation (redness, rash, blistering) develops. Wash clothing before reuse.

Ingestion - If swallowed, do not induce vomiting unless directed to do so by medical personnel. Call a physician or a poison control center immediately.

If the victim stops breathing: Wipe away any remaining materials off the lips. Clear the airway and administer artificial respiration.

If the victim is conscious: Have person rinse his/her mouth several times with cold water and spit out. If possible, give a mixture of 2 tablespoons of activated charcoal mixed with 8 oz. of water to drink. Keep warm and quiet. Never give

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4. First Aid Measures - Continued

anything by mouth to an unconscious victim.

Inhalation - Remove the person away from exposure to fresh air. Keep the victim warm and quiet. Support breathing as necessary. Administer cardiopulmonary resuscitation if pulse has stopped. Get medical attention immediately.

Note To Physician - Inhalation of high concentrations of this product, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. This material is an aspiration hazard. The potential danger from aspiration must be weighed against possible oral toxicity.

5. Fire Fighting Measures

Flash Point: est. 23 to 55 °F

Flammability Class: IB

Fire And Explosion Hazards - FLAMMABLE. Vapor may cause flash fire. Vapors may accumulate in confined spaces (e.g., pits, sumps, sewers) and inadequately ventilated areas. Vapors may travel to areas (rooms) away from worksite before igniting/flashing back to vapor source.

Do not reuse container. Keep away from heat, sparks, open flame and other ignition sources. Containers containing residual flammable vapors may explode causing serious injury or death. Do not cut open or apply heat sources to containers.

Extinguishing Media - Fire-fighting foam, carbon dioxide, dry chemical. Water spray may be used to cool fire exposed containers. Liquid will float and may reignite on surface of water.

Fire Fighting Instructions - Firefighters should wear self-contained breathing apparatus and full protective gear. Avoid breathing vapors, gases and fumes. If safe to do so, shut off all gas pilot lights and electrical (spark or hot-wire) igniters and other sources of ignition. Water can be used to cool and protect exposed material.

6. Accidental Release Measures

Eliminate all ignition sources. Provide maximum dilution or explosion-proof exhaust ventilation. Avoid release to the environment. For large spills, use fire fighting foam or water spray to disperse vapors.

Use appropriate personal protective equipment. Contain and/or absorb spill with inert material (e.g. sand, vermiculite) or other solvent absorbing materials. Collect and dispose using approved waste containers.

7. Handling And Storage

Handling And Storage Precautions - Keep out of reach of children. Keep containers tightly closed. Use only with adequate ventilation. Keep away from heat, sparks, open flame and other ignition sources. Protect from temperature extremes and direct sunlight. Wash thoroughly after handling.

Handling Precautions - Avoid exposure to vapor. Avoid contact with eyes, skin and clothing. Avoid exposure during pregnancy. Keep away from heat, sparks, flame, and other sources of ignition (i.e., pilot lights, electric motors, and static electricity).

Work/Hygienic Practices - Use good personal hygiene. Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Engineering Controls - Use with adequate general and local exhaust ventilation to maintain air concentrations below recognized exposure limits.

Eye/Face Protection - Safety glasses with side shields or goggles.

Skin Protection - Chemical-resistant gloves made of butyl rubber, PVA, Teflon or Viton should be used when prolonged use of the product is anticipated. Note: PVA should not be used when contact with water is expected. Consult your glove manufacturer for additional chemical resistance information and glove limitations.

Respiratory Protection - None normally required when used with adequate ventilation. In case of inadequate ventilation, use a NIOSH-approved respirator for organic vapors. Engineering controls should be implemented preferentially to reduce exposures. The level of respiratory protection needed should be based on the required

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8. Exposure Controls/Personal Protection - Continued

protection factor after evaluating chemical exposures using appropriate industrial hygiene monitoring and/or OSHA guidance. Use self-contained breathing apparatus (SCBA) for spill cleanup.

Ingredient(s) - Exposure Limits

ACETONE

ACGIH TLV-TWA: 500 ppm ; ACGIH TLV-STEL: 750 ppm ; OSHA PEL-TWA: 1,000 ppm

TOLUENE

ACGIH TLV-TWA: 50 ppm (Skin) ; OSHA PEL-CEILING: 300 ppm ; OSHA PEL-PEAK: 500 ppm

OSHA PEL-TWA: 200 ppm

9. Physical And Chemical Properties

Appearance - Clear liquid

Odor - A characteristic aromatic or ketone odor

Chemical Type: Mixture

Physical State: Liquid

Boiling Point: 175 to 231 °F

Specific Gravity: < 1

Percent Volatiles: 100

Vapor Density: > 1

Solubility: negligible to slight in water

Evaporation Rate: slower than ethyl ether

10. Stability And Reactivity

Stability: Stable

Hazardous Polymerization: Will Not Occur

Conditions To Avoid (Stability) - Avoid contact with heat, spark, open flame or other source of ignition. Do not reuse container.

Incompatible Materials - Avoid contact with strong oxidizing agents (e.g., sulfuric acid, nitric acid), reducing agents, acids, alkalis and aliphatic amines. May attack some rubber and plastics.

Hazardous Decomposition Products - Thermal oxidation (i.e., "burning") may produce decomposition products of carbon and nitrogen.

11. Toxicological Information

Chronic/Carcinogenicity - Neither the product overall nor any of its ingredients are known to be listed as potentially carcinogenic by NTP, IARC, OSHA or ACGIH.

Ingredient(s) - Toxicological Data

TOLUENE

Oral-rat LD50: 2.6 to 7.5 g/kg ; Inhal-mouse (8hr) LC50: 5,320 ppm

12. Ecological Information

Protect from drains, sewers, and waterways. Product may be moderately toxic to aquatic organisms on an acute basis.

13. Disposal Considerations

Dispose in accordance with applicable federal, state and local government regulations. Dispose of unused or spill cleanup material as hazardous waste.

RCRA Information - Waste solutions may meet the RCRA Ignitable characteristic - D001.

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14. Transport Information

Proper Shipping Name - Paint Related Material (toluene, acetone)

Hazard Class

3

DOT Identification Number

UN1263

DOT Shipping Label

FLAMMABLE

Certain quantities of the product packaged for ground transportation may qualify for categorization under Consumer Commodity ORM-D and/or Limited Quantity exemptions. Consult the manufacturer and/or DOT regulations.

15. Regulatory Information

SARA Hazard Classes

Acute Health Hazard; Chronic Health Hazard; Fire Hazard

SARA Title III - Section 313 Supplier Notification

This product contains the following toxic chemicals that are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

TOLUENE (108-88-3) 40 - 60 %

This information must be included on all MSDSs that are copied and distributed for this material.

Ingredient(s) - U.S. Regulatory Information

TOLUENE

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

State Regulations - WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects, or other reproductive harm.

Ingredient(s) - State Regulations

ACETONE

New Jersey - Workplace Hazard; Pennsylvania - Workplace Hazard; Massachusetts - Hazardous Substance; New York City - Hazardous Substance

TOLUENE

New Jersey - Workplace Hazard; New Jersey - Environmental Hazard; New Jersey - Special Hazard; Pennsylvania - Workplace Hazard; Pennsylvania - Environmental Hazard; California - Proposition 65; Massachusetts - Hazardous Substance; New York City - Hazardous Substance

Canadian Regulatory Information - Class B - Flammable Material (Matiere Inflammable)

Ingredient(s) - Canadian Regulatory Information

ACETONE

WHMIS - Ingredient Disclosure List

TOLUENE

WHMIS - Ingredient Disclosure List

European Union (EU) Regulatory Information -

European Union Risk Phrases -

R11 - Highly Flammable

R36/37/38 - Irritating to skin, eye and respiratory system

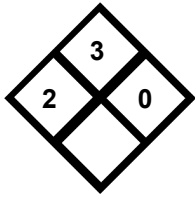
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15. Regulatory Information - Continued

European Union Safety Phrases -
S2 - Keep out of reach of children
S7 - Keep container tightly closed
S9 - Keep container in a well-ventilated place
S16 - Keep away from sources of ignition - no smoking
S29 - Do not empty into drains
S33 - Take precautionary measures against static discharges
S51 - Use only in well ventilated areas

NFPA



HMIS

HEALTH	2
FLAMMABILITY	3
REACTIVITY	0
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

This MSDS Supercedes A Previous MSDS Dated: 05/04/2001

Reference Documentation - The following were the primary references used in the creation of this MSDS:

- * Toluene MSDS (Ashland, 8/3/99)
- * Acetone MSDS (Ashland, 10/24/01)
- * U.S. National Library of Medicine Hazardous Substance Databank (HSDB) - toluene, acetone
- * Canadian Centre for Occupational Health & Safety (CCINFO) MSDS Database - toluene, acetone
- * Guide to Occupational Exposure Values, ACGIH 2001
- * Quick Selection Guide to Chemical Protective Clothing
- * Fire Protection Guide on Hazardous Materials
- * Rapid Guide to Chemical Incompatibilities, 1997

Disclaimer

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Alvin Products, Inc.

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