

MATERIAL SAFETY DATA SHEET

TOLUENE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Distributed by Tarr, Incorporated
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PRODUCT NAME: TOLUENE

PRODUCT NUMBER: T

UPC NUMBER:

PREPARED BY: Patricia Rodabaugh

DATE PREPARED: 10/18/2002

LAST REVISION: 5/30/2002

SYNONYMS: Methyl benzene, Toluol



Portland, Oregon
Phoenix, Arizona
Auburn, Washington
Vancouver, Washington

Print Date: 5/23/2003

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Toluene	108-88-3	100	100 ppm	50 ppm (skin)
Benzene	71-43-2	<0.1	1 ppm	5 ppm

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: WARNING! Flammable liquid and vapor. Harmful or fatal if swallowed. Vapor harmful.

POTENTIAL HEALTH EFFECT

EYE CONTACT: Liquid is moderately irritating to the eyes. High vapor concentrations may also be irritating.

INHALATION: Exposure to high concentrations may result in central nervous system (CNS) depression.

INGESTION: Liquid is moderately toxic and may be harmful if swallowed; may produce CNS depression. Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspir. pneumonitis.

SKIN CONTACT: Liquid is mildly irritating to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

SIGNS AND SYMPTOMS OF EXPOSURE

Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin). In severe cases death may result.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. If irritation persists, get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention immediately.

INGESTION: DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

SKIN CONTACT: Remove contaminated clothing/shoes. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

AGGRAVATED MEDICAL CONDITIONS:

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.

SUPPLEMENTAL HEALTH INFORMATION

*Note to physician: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 40 F (4 C)

FLASH POINT METHOD USED Tag Closed Cup

AUTOIGNITION 896 F

LEL: 0.01 **UEL:** 0.071

EXTINGUISHING MEDIA:

Use water fog, "alcohol" foam, dry chemical, or CO₂.

SPECIAL FIRE FIGHTING PROCEDURES

WARNING. Flammable Liquid. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mist or spray may be flammable at temperatures below the flash point.

COMBUSTION PRODUCTS

Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED

WARNING. Flammable. Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and flame. Surfaces that are hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

OTHER PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respir. or an air-purifying respir. for organic vapors.

VENTILATION:

Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PROTECTIVE GLOVES

Test data indicate the best protection is provided by neoprene, nitrile, and natural rubber gloves.

EYE PROTECTION

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK / HYGENIC PRACTICES

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

EXPOSURE GUIDELINES:

May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY IN WATER: Soluble in alcohol, benzene, and ether, negligible in water.

APPEARANCE AND ODOR: Clear, colorless liquid with pungent odor.

BOILING POINT	231 F	PERCENT VOLATILE:	100
VAPOR PRESSURE:	22	PH:	essential neutr
EVAPORATION RATE:	Slower than ether	MOLECULAR WEIGHT:	92.11
POUNDS PER GALLON	7.25	VAPOR DENSITY:	Heavier than air, 3.14
SPECIFIC GRAVITY:	0.869 - 0.873	OTHER PROPERTIES	RQ=1,000 lbs.
MELTING POINT:	-139 F		
FREEZING POINT:	NDA		

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID Stable under normal conditions.

INCOMPATIBILITY

Strong oxidizers.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS

Carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION Will Not Occur

CONDITIONS TO AVOID Avoid heat, flame, and other sources of ignition.

11. TOXICOLOGY INFORMATION

This product may contain benzene (CAS No. 71-43-2) at a concentration less than 300 ppm. LD50 (oral rat) > 5,000 mg/kg. LD50 (Drm: Rbt): > 14,000 mg/kg. LC50 (NINHL RAT): ~ 4,000 ppm.

12. ECOLOGICAL INFORMATION

Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

13. DISPOSAL CONSIDERATIONS

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

14. TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Toluene

PACKING GROUP: II

GUIDE NUMBER: 130

HAZARD CLASS: 3

DOT CLASS: Flammable liquid

UN NUMBER: UN 1294

15. REGULATORY INFORMATION

This product is listed on the EPA/TSCA inventory of chemical substances. Per 40 CFR part 82, this product does not contain nor was it directly manufactured with any class I or class II ozone depleting substance.

16. OTHER INFORMATION

HMIS INFORMATION HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0 PROTECTIVE: G

SARA Title III Information

SARA 302: Not listed as an extremely hazardous substance.

SARA 311/312: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

SARA 313: Toluene (108-88-3) is listed as a toxic chemical.

Supplemental Information: California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer & reproductive toxicity: Benzene, Toluene

RQ = 1,000 LBS

While there is no evidence that industrially acceptable levels of toluene vapors (e.g., the TLV) have produced cardiac effects in humans, animal studies have shown that inhalation of high levels of toluene produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms. This latter effect was shown to be enhanced by hypoxia or the injection of adrenal-like agents. Prolonged and repeated exposures to high concentrations of toluene have resulted in hearing loss in laboratory rats. While the effect of solvents on the human auditory system is uncertain, solvent abusers exposed to high doses of toluene show signs of hearing loss, and occupational exposure to toluene may interact with noise in causing hearing loss in the work environment. The effects of solvents on human hearing are uncertain. Solvent abusers and noise interaction with toluene in the work environment may cause signs of hearing loss.

Toluene is not known to be mutagenic or carcinogenic. However, the available human and experimental data are limited and insufficient to assess carcinogenic potential. Toluene is not listed as a carcinogen by NTP, IARC, or OSHA. Intentional abuse of toluene vapors has been linked to damage of brain, liver, kidney and to death. Many case studies involving abuse during pregnancy clearly indicate that toluene is a developmental toxicant. Developmental toxic effects comparable to those observed in humans have been seen in lab animals but the effects were generally associated with maternal toxicity.

N/A = Not Applicable

NDA = No Data Available

Disclaimer

The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr, Incorporated makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Tarr, Inc. assumes no responsibility for injuries from the use of the product described herein.