



Material Safety Data Sheet Toluene, ACS

Section 1 - Chemical Product and Company Identification

MSDS Name:

Toluene, ACS

Catalog Numbers:

LC26170

Synonyms:

Toluol, methylbenzene, phenylmethane

Company Identification:

LabChem Inc

200 William Pitt Way

Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
108-88-3	Toluene	100

Section 3 - Hazards Identification

Emergency Overview

Appearance: *Clear, colorless solution*

Warning! Flammable liquid and vapor. May cause central nervous system depression. Aspiration hazard if swallowed; can enter lungs and cause damage. May be absorbed through intact skin. May cause liver and kidney damage. Possible risk of harm to the unborn child. Causes eye, skin, and respiratory tract irritation. Breathing vapors may cause drowsiness and dizziness.

Target Organs: *Kidneys, central nervous system, liver, respiratory system, eyes, skin.*

Potential Health Effects

Eye:

Contact or exposure to vapors causes eye irritation.

Skin:

Skin contact causes irritation. Repeated or prolonged exposure may cause drying and cracking of the skin, defatting, and dermatitis. May be absorbed through the skin.

Ingestion:

Ingestion may cause central nervous system depression, nausea, vomiting, diarrhea, headache, dizziness, weakness, impaired coordination, transient memory loss, and impaired reaction time. If material is aspirated into the lungs, chemical pneumonitis may result, which can be fatal.



Material Safety Data Sheet Toluene, ACS

Inhalation:

Causes respiratory tract irritation. Inhalation of concentrations greater than 200ppm causes CNS encephalopathy, fatigue, depression, weakness, confusion, headache, nausea, transient memory loss and impaired coordination. 800ppm causes rapid irritation of nasal and mucous membranes, metallic taste, impaired balance. Extreme inhalation may cause death by paralysis of the respiratory center.

Chronic:

Repeated exposure in combination with constant, loud noise may cause hearing loss and dizziness. Chronic hydrocarbon abuse has been linked to irregular heart rhythms and potential cardiac arrest. Toluene abuse has been linked to kidney disease, blood, protein, and pus in the urine, elevated serum creatine, decreased urinary output, and metabolic and tubular acidosis. Repeated inhalation may cause irreversible encephalopathy with cerebellar ataxia, unsteadiness, hallucinations, coma, blood disorders. Toluene does not cause the severe injury to bone marrow that is characteristic of benzene poisoning.

Section 4 - First Aid Measures

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

Skin:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid. Wash contaminated clothing before reuse.

Ingestion:

Extreme care must be taken to prevent aspiration. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs naturally, keep head below hips. Get medical aid at once.

Inhalation:

Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid at once.

Notes to Physician:

Causes cardiac sensitization to endogenous catecholamines, which may lead to cardiac arrhythmias. Do NOT use adrenergic agents such as epinephrine or pseudoepinephrine.

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Flammable liquid and vapor. Cool containers with water spray until well after fire is out. Toluene is lighter than water, and solid streams of water may spread fire. May accumulate static electricity. Vapors are heavier than air and may accumulate in low-lying areas or travel to a source of ignition and flash back. Water runoff can cause environmental damage. If possible, dike and collect water used to fight fire.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, appropriate foam, or water spray. Solid streams of water may be ineffective and spread material.

Autoignition Temperature:

480°C (896°F)

Flash Point:

4°C (39°F)



Material Safety Data Sheet Toluene, ACS

NFPA Rating:

CAS# 108-88-3; Health-2; Flammability-3; Instability-0

Explosion Limits:

Lower: 1.1 Upper: 7.1

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb liquid with inert material (vermiculite, sand, earth), and place in a suitable container labeled as flammables for disposal. Reduce vapor and fire hazard with appropriate foam or water spray. Provide ventilation. Use only non-sparking tools and equipment. Control runoff and isolate discharged material.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor, mist, or gas. Empty containers retain product residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from sources of ignition. Store tightly closed in a cool, dry, well-ventilated area away from incompatible materials. Separate from oxidizing materials. Bonding and grounding should be in accordance with NFPA 77, Recommended practice on static electricity.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or using this material should be equipped with an eyewash facility and a safety shower. Provide local exhaust or general dilution ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Toluene	20 ppm TWA	100 ppm TWA 375 mg/m ³ TWA 500 ppm IDLH	200 ppm TWA 300 ppm Ceiling

OSHA Vacated PELs:Toluene: 100 ppm TWA; 375 mg/m³ TWA



Material Safety Data Sheet Toluene, ACS

Personal Protective Equipment

Eyes:

Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin:

Wear nitrile or other toluene gloves to prevent skin exposure. Do not wear latex gloves.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	Colorless
Odor:	Aromatic odor
pH:	Not available
Vapor Pressure:	28.4 mm Hg @ 25°C
Vapor Density:	3.1 (Air = 1)
Evaporation Rate:	2.4 (Butyl acetate = 1)
Viscosity:	0.59 cPs @ 20°C
Boiling Point:	111°C (232°F)
Freezing/Melting Point:	-95°C (-139°F)
Decomposition Temperature:	Not available
Solubility in water:	Insoluble.
Specific Gravity/Density:	0.867
Molecular Formula:	C ₆ H ₅ CH ₃
Molecular Weight:	92.14

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Ignition sources, excess heat, confined spaces.

Incompatibilities with Other Materials:

Nitric acid, sulfuric acid, strong oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide.

Hazardous Polymerization:

Has not been reported

Section 11 - Toxicological Information

RTECS:

CAS# 108-88-3: XS5250000.



Material Safety Data Sheet Toluene, ACS

LD50/LC50:

CAS# 108-88-3:

Inhalation, mouse: LC50 = 400 ppm/24H

Inhalation, rat: LC50 = 49 g/m³/4H

Oral, rat: LD50 = 636 mg/kg

Skin, rabbit: LD50 = 14100 uL/kg.

Carcinogenicity:

CAS# 108-88-3: IARC: Group 3 (Not classifiable)

Epidemiology:

Moderately toxic by inhalation, ingestion, slightly toxic by dermal absorption. Target effects: central nervous system depressant, neurotoxin. Poisoning may affect heart, liver, kidneys, blood.

Teratogenicity:

Children with microcephaly, minor craniofacial and limb anomalies, central nervous system defects, attention disorders, developmental delay, learning disorders, and language deficits were born to mothers who abuse toluene by inhalation during pregnancy.

Reproductive:

No information found.

Mutagenicity:

No information found.

Neurotoxicity:

Neurological changes and memory loss have been reported among people who experienced toluene intoxication.

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Toluene

Hazard Class: 3

UN Number: UN1294

Packing Group: PG II

Section 15 - Regulatory Information

US Federal

TSCA:

CAS# 108-88-3 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 108-88-3: final RQ = 1000 pounds (454 kg)



Material Safety Data Sheet Toluene, ACS

CERCLA/SARA Section 313:

This material contains Toluene (CAS# 108-88-3, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous:

None of the components are on this list.

US State

State Right to Know:

Toluene can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations:

WARNING: This product contains Toluene, a chemical known to the state of California to cause developmental reproductive toxicity.

European/International Regulations

Canadian DSL/NDSL:

CAS# 108-88-3 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

CAS# 108-88-3 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: November 30, 1998

Revision Date: September 8, 2009

Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc. assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application.