

## Sample Material Safety Data Sheet

Toluene

MSDS No. XXXX

### 1. Product and Company Identification

Product Name: TOLUENE

Synonyms: Methylbenzene, Methylbenzol, Phenylmethane, Toluol

CAS No.: 108-88-3

Chemical Formula: C<sub>6</sub>H<sub>5</sub>-CH<sub>3</sub>

Catalog Number: Tol 12

**Supplier:** Company X  
XXXXXXXXXX  
Anywhere, XX XXXXX  
Emergency Information: 800-XXX-XXXX

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Toluene	108-88-3	100%	Yes

### 3. Hazards Identification

**Emergency Overview** DANGER! Harmful or fatal if swallowed. Vapor harmful. POISON! May be absorbed through intact skin. Flammable liquid and vapor. May cause liver and kidney damage, may affect blood system or central nervous system. Causes irritation to skin, eyes and respiratory tract.

#### Potential Acute Health Effects

- Eye Contact: Causes severe eye irritation with redness and pain.
- Skin Contact: Causes irritation. May be absorbed through skin.
- Inhalation: Inhalation may cause irritation of the upper respiratory tract. Symptoms of overexposure may include fatigue, confusion, headache, dizziness and drowsiness. Very high concentrations may cause unconsciousness and death.
- Ingestion: Swallowing may cause abdominal spasms and other symptoms that parallel overexposure from inhalation. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.
- Chronic Exposure: Chronic exposure may result in anemia, decreased blood cell count and bone marrow hypoplasia. Liver and kidney damage may occur. Repeated or prolonged contact may cause dermatitis.

### 4. First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eye lids occasionally. Get medical attention immediately.

**Skin Contact:** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician immediately.

**Inhalation:** Evacuate victim to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid immediately.

**Ingestion:** Aspiration hazard. If swallowed, DO NOT INDUCE VOMITING. Give 2–4 cups of milk or water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

## 5. Fire Fighting Measures

**Fire:** Flash point: 4° C (40° F)

Autoignition temperature: 480° C (896° F)

Flammable limits in air % by volume: lower: 1.3%; upper: 7.1%

Flammable liquid and vapor!

Extremely flammable when exposed to flame or sparks. Vapors are heavier than air and can flow along surfaces to distant ignition source and flash back.

**Explosion:** Vapor-air concentrations above flammable limits are explosive. Contact with strong oxidizers may cause fire or explosion. Sensitive to static discharge.

**Fire Extinguishing Media:** Dry chemical, carbon dioxide or foam. Material is lighter than water and a fire may be spread by use of water. Water may be used to cool fire surface and protect personnel. Water may also be used to flush spills away from exposures and to dilute spills to non-flammable mixtures. Avoid flushing hydrocarbon into sewers.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

**Avoid contact:** Ventilate area of leak or spill. Remove all ignition sources. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material such as earth, sand or vermiculite. Do not use combustible materials, such as saw dust. Do not flush to sewer.

## 7. Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with skin, eyes or clothes. Electrically ground and bond containers when transferring material to avoid static accumulation.

**Storage:** Store in a cool, dry well-ventilated location, away from any area where the fire hazard. Separate from incompatibles. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid). Observe all warnings and precautions listed for the product. Protect container against physical damage. Keep container tightly closed.

## 8. Exposure Controls/Personal Protection

**Ventilation System:** A system of local and/or general exhaust is recommended to keep exposures below the Airborne Exposure Limits.

**Exposure Limits:** Toluene:

- OSHA Permissible Exposure Limit (PEL): 200 ppm TWA; 300 ppm (acceptable ceiling conc.); 500 ppm (acceptable maximum conc.).
- NIOSH Recommended Exposure Limit (REL): 100 ppm TWA (375 mg/m<sup>3</sup>); STEL 150 ppm (560 mg/m<sup>3</sup>)
- ACGIH Threshold Limit Value (TLV): 50 ppm TWA skin – potential for cutaneous absorption

**Personal Respirators (NIOSH/EN 149 Approved):** If the exposure limit is exceeded a half-face organic vapor respirator may be worn for up to ten times the exposure limit. A full-face organic vapor respirator or self-contained breathing apparatus may be worn up to 50 times the exposure limit. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

**Skin Protection:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:** Use chemical splash goggles and/or a full face shield. Maintain eyewash fountain facilities in work area.

## 9. Physical and Chemical Properties

Physical State and appearance: Clear, colorless liquid.

Odor: Aromatic benzene-like.

Solubility: Very slight

Specific Gravity (Water = 1): 0.9

Viscosity: 20cP @ 20 oC

Boiling Point: 110 oC (232 oF)

Melting Point: -95 oC (-139 oF)

Vapor Density (Air=1): 3.1

Vapor Pressure (mm Hg): 53.3 @ 20 oC (68 oF)

Evaporation Rate (Butyl acetate=1): 2.4

Molecular formula: C<sub>6</sub>H<sub>5</sub>CH<sub>3</sub>

Molecular weight: 92.06

## 10. Stability and Reactivity

**Stability:** Stable under ordinary conditions of use and storage. Containers may burst when heated.

**Hazardous Decomposition Products:** Carbon dioxide and carbon monoxide may form when heated to decomposition.

**Hazardous Polymerization:** Has not been reported.

**Incompatibilities:** Heat, flame, strong oxidizers, nitric and sulfuric acids; will attack some forms of plastics, rubber, coatings.

**Conditions to Avoid:** Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

### Toxicological Data:

Oral rat LD50: 636 mg/kg

Skin rabbit LD50: 14100 uL/kg

Inhalation rat LC50: 49 gm/m<sup>3</sup>/4H

Inhalation mouse LC50: 400 ppm/24H

Irritation data: skin rabbit, 500 mg, Moderate

Eye rabbit, 2 mg/24H, Severe.

Investigated as a tumorigen, mutagen, reproductive effector.

**Reproductive Toxicity:** Has shown some evidence of reproductive effects in laboratory animals.

## 12. Ecological Information

**Environmental Fate:** When released into the soil, this material may evaporate and is microbiologically biodegradable. When released into the soil, this material is expected to leach into groundwater. When released into water, this material may evaporate and biodegrade to a moderate extent. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals.

**Environmental Toxicity:** No data available, however this material is expected to be toxic to aquatic life.

## 13. Disposal Considerations

Waste material should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from Federal disposal regulations. Dispose of container and unused contents in accordance with Federal, State and local requirements.

## 14. Transport Information

Domestic (Land, U.S. D.O.T.)

Proper Shipping Name: TOLUENE

Hazard Class: 3

UN/NA: UN1294

Packing Group: II

Canada TDG

Proper Shipping Name: TOLUENE

Hazard Class: 3 (9.2)

UN/NA: UN1294

Packing Group: II

Additional Information: Flashpoint 4 oC

## 15. Regulatory Information

### CALIFORNIA PROPOSITION 65: WARNING

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Reportable Quantity: 1000 Pounds (454 Kilograms) (138.50 Gals)

NFPA Rating: Health – 2; Fire – 3; Reactivity – 0  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Carcinogenicity Lists: No

NTP: No

IARC Monograph: No

OSHA Regulated: No

Section 313 Supplier Notification: This product contains the following toxic chemical(s) subject to the reporting requirements of SARA TITLE III Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS No.	Chemical Name	% By Weight
108–88–3	Toluene	100

## 16. Other Information

### Label Hazard Warning

**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.**

### Label Precautions

Keep away from heat, sparks and flame.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Avoid breathing vapor.

Avoid contact with eyes, skin and clothing.

### Label First Aid

Aspiration hazard. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head below hips to prevent aspiration into lungs. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases call a physician immediately.

**References: Upon request**