



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Toluene**
PRODUCT NUMBER: 16480
CAS NUMBER: 108-88-3
SYNONYMS: Toluol, Methylbenzene, Phenylmethane

MANUFACTURER:

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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram



Signal Word

Danger

Hazard Statements

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs
H401	Toxic to aquatic life

Precautionary Phrases

P210	Keep away from heat/sparks/ open flames/ hot surfaces. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapors/spray
P281	Use personal protective equipment as required
P301+P310	IF SWALLOWED: Immediately call a poison center or doctor/physician
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P331	Do NOT induce vomiting

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

HMIS CLASSIFICATION:

Health: 2 Fire: 3 Reactivity Hazard: 0 Personal: H

NFPA RATING:

Health: 2 Flammability: 3 Reactivity Hazard: 0

EYE CONTACT: Causes eye irritation

SKIN CONTACT: May be harmful if absorbed through the skin. Causes skin irritation

INHALATION: May be harmful if inhaled. Causes respiratory tract irritation. Vapors may cause drowsiness and dizziness

INGESTION: May be harmful if swallowed. Aspiration hazard if swallowed – can enter lungs and cause damage.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: $C_6H_5CH_3$

Molecular Weight: 92.14

CHEMICAL NAME	CAS#	%
Toluene	108-88-3	100

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: In case of eye contact, rinse with plenty of water and seek medical attention if necessary.

SKIN EXPOSURE: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.

INHALATION: Move to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.

INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: 4°C

AUTO IGNITION TEMPERATURE: 480°C

EXPLOSION LIMITS: LEL: 1.2%. EUL: 7.1%.

EXTINGUISHING MEDIUM: Keep away from heat/sparks/open flame/hot surface. No smoking. Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material. Cool unopened containers with water.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Carbon oxides. Containers may explode in fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Cleanup personnel need personal protection from inhalation and skin/eye contact. Evacuate and ventilate the area. Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Use appropriate personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

CONDITIONS FOR SAFE STORAGE: Store in tightly closed, original containers in a cool, dry, well-ventilated area. Store between 55-100°F for product stability. Do not store with strong oxidizing agents.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS

Component	Exposure Limits	Basis	Entity
Toluene	200 ppm	PEL	USA OSHA
	500 ppm (10 min. peak)	STEL	USA OSHA
	20 ppm	TLV	USA ACHIH
	100 ppm	REL	USA NIOSH
	500 ppm	IDLH	OSHA

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

EYE PROTECTION: Wear chemical safety glasses or goggles.

SKIN PROTECTION: Wear nitrile or rubber gloves, apron, or lab coat.

VENTILATION: Provide local exhaust, preferably mechanical.

RESPIRATOR: Use an approved respirator

ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Clear colorless liquid

MOLECULAR WEIGHT: 92.14

BOILING POINT: 111°C

MELTING POINT: -95°C

SPECIFIC GRAVITY: 0.87 gm/ml

VAPOR PRESSURE: 22 mmHg (@20° C)

ODOR: Sweet, pungent

SOLUBILITY: Soluble

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Vapors may form explosive mixture with air.

CONDITIONS TO AVOID: Heat, flames and sparks. Extremes of temperature and direct sunlight.

INCOMPATIBILITY: Oxidizing agents.

DECOMPOSITION PRODUCTS: Carbon Oxides

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: LD50 Dermal – rabbit – 12,196 mg/kg. Eyes – rabbit – Severe eye irritation – 24h. LC50 Inhalation – rat – 4h – 12,500-38,800 mg/m³. LD50 Oral – rat – 5,580 mg/kg.

RTECS: XS5250000

CARCINOGENIC EFFECTS: Not a carcinogen

MUTAGENIC EFFECTS: Confirmed

TETRATOGENIC EFFECTS: Spermatogenesis

Fetotoxicity**EMBRYOTOXICITY:**

CHRONIC TOXICITY: Inhalation of this product have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

AQUATIC VERTEBRATE: LD50 – Lepomis Macrochirus (Bluegill) – 74 – 340 mg/l – 96h. LC50 Oncorhynchus mykiss (rainbow trout) – 7.63 mg/l – 96h. NOEC – Pimephales Promelas (fathead minnow) – 5.44 mg/l – 7d. LOEC – Pimephales Promelas (fathead minnow) – 8.04 mg/l – 7d.

AQUATIC INVERTEBRATE: EC50 – Daphnia magna (water flea) – 8 mg/l -24h. Immobiliation EC50 – Daphnia Magna (water flea) – 6mg/l – 48h.

TERRESTRIAL: EC50 – Chlorella Vulgaris (fresh water algae) – 245 mg/l – 24h. EC50 – Psuedokirchneriella Subcapitata (green algae) – 10 mg/l – 24h.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

UN1294

Toluene

Class 3

PGII

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Listed in the TSCA inventory

DSCL (EEC): Listed on the DSCL inventory

SARA 302/304: Not Listed

SARA 311/312: Toluene

SARA (TITLE 313): Toluene

CALIFORNIA PROP. 65: Toluene

WHMIS CANADA: CLASS B-2: Flammable liquid with a flash point lower than 37.8°C. CLASS D-2A: Material causing other toxic effects

(VERY TOXIC).

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Prochem, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

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