

PRODUCT IDENTIFICATION



Product Name: Toluene
CAS Number: 108-88-3
Molecular Formula: C₇H₈
Molecular Weight: 92.14 g/mol
Grade: Technical
Purity / Concentration: 99.5%
Synonyms: Methylbenzene, Toluol

PRODUCT OVERVIEW

Toluene (CAS 108-88-3) is a high-purity, Technical grade solvent featuring a 99.9% assay and exceptionally low impurity levels, such as 0.01% water content. This clear, mobile liquid is widely utilized across industrial sectors for its superior solvency and chemical stability in complex formulations.

Grade Significance: Technical grade Toluene provides an optimal balance between high purity and cost-effectiveness, making it suitable for a wide range of industrial and manufacturing applications where stringent lab-grade specifications are not required but consistency is essential.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc Fid	%	99.96	—	—	GC-FID
Color (APHA)	APHA	≤ 20 APHA	—	—	ASTM D1209
Refractive Index 20C	—	1.495	1.4919	1.4983	Refractometer @ 20°C
Specific Gravity (20°C)	g/mL	0.871	0.865	0.875	Hydrometer @ 25°C
Water Karl Fischer	%	0.0097	—	—	ASTM E203 / ISO 6296
Distillation Range	°C	0.7	—	1	ASTM D1078

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, mobile liquid	Odor	Sweet, aromatic odor
Form	Liquid	Boiling Point	231.1 °F at 760 mmHg (NTP, 1992)
Melting / Freezing Point	-139 °F (NTP, 1992)	Flash Point	40 °F (NTP, 1992)
Specific Gravity	0.867	Solubility	Low water solubility, excellent organic solvent
Molecular Formula	C ₇ H ₈	Molecular Weight	92.14 g/mol
Vapor Pressure (20°C)	28 mmHg	Viscosity (25°C)	0.59 cP
Refractive Index (20°C)	1.496	Density (25°C)	0.866 g/mL

APPLICATIONS

1. **Analytical Chemistry** — Toluene serves as a critical mobile phase component in reversed-phase high-performance liquid chromatography for the precise separation of organic compounds.
2. **Paints and Coatings** — It is extensively used as a primary solvent in the formulation of paints and coatings due to its excellent ability to dissolve resins and maintain consistent viscosity.
3. **Pharmaceutical Manufacturing** — This chemical acts as a vital precursor and reaction medium in the synthesis of various pharmaceutical intermediates and active ingredients.
4. **Agrochemicals** — Toluene is utilized in the production of agricultural chemicals, providing the necessary solvency for creating effective pesticides and herbicides.
5. **Chemical Processing** — It is frequently employed in liquid-liquid extraction processes to efficiently isolate and purify specific organic compounds from complex mixtures.

STORAGE & HANDLING

Due to its highly flammable nature and low flash point of 4°C, Toluene must be stored in a cool, well-ventilated area away from all ignition sources. Proper containment is essential to prevent the accumulation of vapors, which pose significant aspiration hazards and fire risks if not managed correctly.

- Store in a cool, well-ventilated area away from heat sources and open flames.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents and acids.
- Ensure proper PPE, including gloves and goggles, are worn during handling.
- Maintain adequate ventilation to minimize inhalation exposure.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 55 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H225: Highly Flammable liquid and vapor [Danger Flammable liquids]
- H304: May be fatal if swallowed and enters airways [Danger Aspiration hazard]
- H315: Causes skin irritation [Warning Skin corrosion/irritation]
- H336: May cause drowsiness or dizziness [Warning Specific target organ toxicity, single exposure; Narcotic effects]
- H361d ***: Suspected of damaging the unborn child [Warning Reproductive toxicity]
- H373 **: May causes damage to organs through prolonged or repeated exposure [Warning Specific target organ toxicity, repeated exposure]

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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