

TECHNICAL DATA SHEET

Toluene

CAS NUMBER

108-88-3

ALLIANCE CODE

toluene

GENERATED

2026-07-17

1. IDENTITY & COMPOSITION

PRODUCT NAME

Toluene

ALLIANCE CODE

toluene

GRADE

—

CONCENTRATION

—

CAS NUMBER

108-88-3 [PubChem](#)

FORMULA

C7H8 [PubChem](#)

MOLECULAR WEIGHT

92.14 [PubChem](#)

PRODUCT TYPE

pure_substance

PHYSICAL & CHEMICAL PROPERTIES

One or more physical-property values are temporarily suppressed pending verification against vendor COA data. For complete properties refer to the Safety Data Sheet (SDS) or contact sales@alliancechemical.com.

FORM

Liquid [Product record](#)

COLOR

20.0000 APHA [Vendor COA](#)

ODOR

Sweet, pungent, benzene-like odor

[Product record](#)

SPECIFIC GRAVITY (20 °C)

0.8710 g/mL [Vendor COA](#)

DENSITY

0.867 at 68 °F (USCG, 1999) - Less dense than water; will float [Product record](#)

BOILING POINT

0.7000 °C [Vendor COA](#)

MELTING POINT

-139 °F (NTP, 1992) [Product record](#)

FLASH POINT

40 °F (NTP, 1992) [Product record](#)

VAPOR PRESSURE

10 mmHg at 43.5 °F ; 20 mmHg at 65.1 °F; 40 mmHg at 89.2 °F (NTP, 1992) [Product record](#)

SOLUBILITY (WATER)

less than 1 mg/mL at 64 °F (NTP, 1992) [Product record](#)

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Good	80	Good for non-aromatic hydrocarbons; poor for aromatics.	Parker O-ring Chemical Compatibility
EPDM Elastomer	Not recommended	—	Swells in hydrocarbons; never use.	Parker O-ring Chemical Compatibility
Viton (FKM) Elastomer	Excellent	100	Standard for hydrocarbon service.	Parker O-ring Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Universal.	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Excellent	100	Inert.	Cole-Parmer Chemical Compatibility
Carbon Steel Metal	Good	80	Acceptable for dry hydrocarbons.	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Not recommended	—	Aromatic solvents swell and dissolve HDPE.	Cole-Parmer Chemical Compatibility

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN1294 [Vendor Label](#)

PACKING GROUP

II [Adjudicated](#)

HAZARD CLASS

3 [Adjudicated](#)

PROPER SHIPPING NAME

Toluene [Adjudicated](#)

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger [Adjudicated](#)

H-CODES (HAZARD STATEMENTS)

H225, H304, H315, H336, H361d, H373, H412

[ECHA CLP Annex VI](#)

P-CODES (PRECAUTIONARY STATEMENTS)

P201, P202, P210, P233, P240, P241, P242, P243,
P260, P261, P264, P270, P271, P273, P280,
P301+P310, P302+P352, P303+P361+P353,...

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

200 ppm TWA / 300 ppm acceptable ceiling /
500 ppm 10-min peak [OSHA 29 CFR 1910.1000](#)

ACGIH TLV

— [unknown](#)

NIOSH REL

100 ppm TWA / 150 ppm STEL

[NIOSH Pocket Guide](#)

NIOSH IDLH

500 ppm [NIOSH Pocket Guide](#)

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

Supplier Qualification Packet

One zipped download containing the TDS, SDS, latest lot COA (when available), and a fresh Letter of Continuing Guaranty for Toluene. Every file included is SHA-256 hashed and listed in a manifest your QA team can audit.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
244511	ACS Reagent	99.9%	Exact	ACS Reagent ≥99.9%

Cross-references are informational. Confirm against the manufacturer's current specification before substitution. Competitor trademarks are property of their respective owners.

APPLICATION GUIDANCE

Toluene is a nonpolar solvent used for hydrocarbon extraction, coatings, and degreasing.

- Coatings, paints, and adhesives
- Industrial degreasing
- Hydrocarbon extraction and recovery
- Rubber and polymer processing
- Cleaning of oil-based residues

Highly flammable and electrostatic-prone. Use grounded transfer equipment and inert gas blanketing where appropriate.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated flammable-liquid storage. Tightly sealed containers. Segregate from oxidizers. Bond and ground bulk storage;...

INCOMPATIBILITIES

Strong oxidizers, halogens, nitric acid. Some grades react with rubber and certain plastics — verify gasket and hose compatibility.

HANDLING PRECAUTIONS

Eliminate ignition sources. Use chemical-resistant nitrile or PVA gloves. Bond and ground all transfer equipment. Vapors heavier than air ...

SHELF LIFE

24 months from date of manufacture in sealed, original packaging

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN1294, Toluene, 3, PG II

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS
70

PLACARD
Flammable Liquid

PACKING GROUP
PG II

REVISION HISTORY

Last reviewed 2026-05-20 by Hossein Taki, Vice President (Vice President, Alliance Chemical · CAGE Code 1LT50 · DOT Hazmat Registrant #2188383).

VERSION	DATE	CHANGE	TRIGGER
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.

ALLIANCE CHEMICAL

Order Toluene

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