

TECHNICAL DATA SHEET

Toluene

Reagent

CAS NUMBER	ALLIANCE CODE	GENERATED
108-88-3	toluene	2026-08-31
REVISION	REVIEWED	
1.4	2026-06-18 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Toluene	toluene
GRADE	CONCENTRATION
Reagent	—
CAS NUMBER	FORMULA
108-88-3 PubChem	C7H8 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
92.14 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (Toluene)	99.5% Minimum	99.92 %	—	Supplier specification
Acidity / Neutrality	Neutral (mg NaOH/100 ml)	Passes test	ASTM D 847	Supplier specification
Benzene	Max 0.100 Wt %	0.015 Wt %	ASTM D2360	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Copper Corrosion	Pass (1A or 1B)	Passes test	ASTM D849	Supplier specification
H ₂ S / SO ₂	Not Detectable	Passes test	ASTM D 853	Supplier specification
Nitration Grade Toluene conformance	Meets Standard	Passes test	ASTM D841	Supplier specification
Non-aromatics	Max 1.5 Vol %	0.05 Vol %	ASTM D2360	Supplier specification
Residue after evaporation	=<0.001 %	0.0002 %	—	Supplier specification
Sulfur compounds (as S)	=<0.003 %	0.00005 %	—	Supplier specification
Water	=<0.03 %	0.010 %	Coulometric	Supplier specification
C8 and heavier aromatics (GC)	Max 0.05 Wt %	0.010 Wt %	ASTM D5917 / capillary GC	Interpreted

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Clear liquid & free of sediment and haze when observed at 18.3 – 25.6 °C.	Supplier specification
Form	Liquid	Published reference
Color	Max 2	Supplier specification
Odor	Sweet, pungent, benzene-like odor	Published reference
Specific Gravity (20 °C)	0.8690 – 0.8730	Supplier specification
Density	0.867 at 68 °F (USCG, 1999) – Less dense than water; will float	Published reference
Boiling Point	Not applicable	Adjudicated
Melting Point	–139 °F (NTP, 1992)	Published reference
Flash Point	Min 4 °C (39 °F)	Interpreted
Vapor Pressure	10 mmHg at 43.5 °F ; 20 mmHg at 65.1 °F; 40 mmHg at 89.2 °F (NTP, 1992)	Published reference
Solubility (water)	less than 1 mg/mL at 64 °F (NTP, 1992)	Published reference

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
mild steel (MS) drum	Compatible	pure, nitration grade toluene, min 98.8 wt% purity; 172 kg fill in used MS drums	credencechemicals.com
metal pail / metal drum	Compatible	technical grade toluene, assay 99.5% minimum, as supplied by the manufacturer in 1 gal, 5 gal and 55 gal containers	rmreagents.com
copper	Compatible	ASTM D849 copper strip corrosion test, pass 1A or 1B; toluene min 98.50 wt% purity	wamigroup.com

Compatibility is drawn from published manufacturer and supplier documentation for this product; each rating is sourced. Confirm against your specific duty cycle before equipment selection.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN1294 **49 CFR 172.101**

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, P304+P340, P308+P313,
P312, P314, P321, P331, P332+P313, P362,
P370+P378, P403+P233, P403+P235, P405,
P501

ECHA CLP Annex VI

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

— **no canonical**

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.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
244511	ACS Reagent	99.9%	Exact	ACS Reagent $\geq 99.9\%$

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

APPLICATIONS

Industrial solvent for dissolving paints, coatings, adhesives and resins in manufacturing and chemical processing

[rmreagents.com](#)

Feedstock and processing solvent in chemical manufacturing; degreasing and cleaning of metal surfaces; solvent for printing inks and dyes

[rmreagents.com](#)

Raw material for producing benzene, xylenes, toluene diisocyanate (TDI), TNT, phenol and caprolactam

[wamigroup.lk](#)

Solvent in nitrocellulose lacquers, varnish, paints and enamels, and in adhesive and printing ink manufacture

[wamigroup.lk](#)

Octane booster in gasoline; solvent for synthetic resin and PVC [wamigroup.lk](#)

High-solvency aromatic fluid for adhesives, coatings, roofing, cleaning and printing formulations

[exxonmobilchemical.com](#)

Used in the manufacture of adhesives and printing inks. [wamigroup.lk](#)

Used as a solvent for synthetic resin and PVC. [wamigroup.lk](#)

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated flammable-liquid storage. Tightly sealed containers. Segregate from oxidizers. Bond and ground bulk storage; consider inert gas blanketing for volatile solvents. Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

Strong oxidizers, halogens, nitric acid. Some grades react with rubber and certain plastics — verify gasket and hose compatibility. Class-level guidance — not product-specific; the SDS controls.

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.

HANDLING PRECAUTIONS

Eliminate ignition sources. Use chemical-resistant nitrile or PVA gloves. Bond and ground all transfer equipment. Vapors heavier than air — control ventilation accordingly. Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

Consult Technical Services for product-specific shelf life

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
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REVISION HISTORY

Last reviewed 2026-06-18 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-08-09	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. boilingPoint · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-06-18	Canonical data re-verified: 4 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). - boilingPoint · canonical adjudication / reground (coa.data_provenance) - color · canonical adjudication / reground (coa.data_provenance) - ghsClassification · canonical adjudication / reground (coa.data_provenance) - specificGravity · canonical adjudication / reground (coa.data_provenance)	canonical_change
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.