

TECHNICAL DATA SHEET

D-Limonene Technical Grade

Technical Grade · 95%

CAS NUMBER	ALLIANCE CODE	GENERATED
5989-27-5	d-limonene-technical-grade	2026-08-31
REVISION	REVIEWED	
1.3	2026-06-24 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
D-Limonene Technical Grade	d-limonene-technical-grade
GRADE	CONCENTRATION
Technical Grade	95%
CAS NUMBER	FORMULA
5989-27-5 PubChem	C10H16 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
136.23 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
d-Limonene (assay)	93 Minimum	96.0	GC	Supplier specification
d-Limonene GC	94 Minimum	96.5	GC	Supplier specification
Optical rotation @ 25 °C	+95.55 – +104	99.775	—	Supplier specification
Evaporation residue	1.0 Max	0.05	—	Supplier specification

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.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE		CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE Technical Grade		95%	—	current
Food		94%	—	d-limonene-usp-grade

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Clear, Colorless to Slightly Yellow	Supplier specification
Form	Liquid	Published reference
Color	1.0 Max	Interpreted
Odor	Distinct Orange	Supplier specification
Specific Gravity (20 °C)	0.830 - 0.855	Supplier specification
Density	0.8411 at 68 °F (NTP, 1992) - Less dense than water; will float	Published reference
Boiling Point	348 to 349 °F at 760 mmHg (NTP, 1992)	Published reference
Melting Point	-142.4 °F (NTP, 1992)	Published reference
Flash Point	43 °C (110 °F) Min	Interpreted
Vapor Pressure	1 mmHg at 57 °F ; 5 mmHg at 104.7 °F; 10 mmHg at 128.8 °F (NTP, 1992)	Published reference
Solubility (water)	less than 1 mg/mL at 67.1 °F (NTP, 1992)	Published reference
Refractive Index (nD 20)	1.461 - 1.481	Supplier specification

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN2319 **Adjudicated**

PACKING GROUP

III **Adjudicated**

HAZARD CLASS

3 **Adjudicated**

PROPER SHIPPING NAME

Terpene hydrocarbons, N.O.S. **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H226, H304, H315, H317, H410 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P261, P264, P273, P280, P301+P310,
P302+P352, P303+P361+P353, P321, P331,
P333+P313

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— **no canonical**

ACGIH TLV

— **no canonical**

NIOSH REL

— **no canonical**

NIOSH IDLH

— **no canonical**

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.

APPLICATIONS

Most often used in the manufacture of bio-based cleaning compounds and as a fragrance additive

florachem.com

Chosen over other solvents for its solvency, biodegradability and derivation from renewable resources

florachem.com

Used as a solvent and defoaming agent, and to enhance the quality of drilling muds and help dissolve additives

parchem.com

Industrial solvent use: degreasing metals prior to industrial painting, in paints, and for cleaning in the electronics and printing industries

wintersunchem.com

Used in the manufacturing of resins, as a wetting and dispersing agent, and in insect control

wintersunchem.com

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

Store in cool, ventilated, fire resistant building

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INCOMPATIBILITIES

Consult the SDS for material-specific incompatibilities.

Class-level guidance — not product-specific; the SDS controls.

HANDLING PRECAUTIONS

Use standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

24 months florachem.com

In original, unopened drums stored in a cool, ventilated, fire resistant building; quality to be re-certified after 24 months from date of manufacture

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)

UN2319, Terpene hydrocarbons, N.O.S., 3, PG III

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

NMFC CLASS
77.5

PLACARD
Flammable Liquid

PACKING GROUP
PG III

REVISION HISTORY

Last reviewed 2026-06-24 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.2	2026-07-21	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. ghsClassification · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-06-24	Canonical data re-verified: 13 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). - bulkThresholdGallons · canonical adjudication / reground (coa.data_provenance) - countryOfOrigin · canonical adjudication / reground (coa.data_provenance) - dotProperShippingName · canonical adjudication / reground (coa.data_provenance) - dotSubsidiaryHazardClass · canonical adjudication / reground (coa.data_provenance) - ghsClassification · canonical adjudication / reground (coa.data_provenance) - hazardClass · canonical adjudication / reground (coa.data_provenance) - hazard_h_codes · canonical adjudication / reground (coa.data_provenance) - hazard_p_codes · canonical adjudication / reground (coa.data_provenance) - hsCode · canonical adjudication / reground (coa.data_provenance) - packingGroup · canonical adjudication / reground (coa.data_provenance) - regulationRule · canonical adjudication / reground (coa.data_provenance) - signalWord · canonical adjudication / reground (coa.data_provenance) - unNumber · 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.