

### PRODUCT IDENTIFICATION



**Product Name:** D-Limonene Technical Grade

**CAS Number:** 5989-27-5

**Molecular Formula:** C<sub>10</sub>H<sub>16</sub>

**Molecular Weight:** 136.23 g/mol

**Grade:** Technical Grade

**Purity / Concentration:** 100%

**Synonyms:** D-Limonene, Limonene

### PRODUCT OVERVIEW

D-Limonene Technical Grade from Alliance Chemical is a 100% pure, naturally derived solvent characterized by its clear to pale yellow appearance and distinct citrus odor. With an assay of 97.5% (wt%), this technical grade solvent is primarily used in the formulation of paints and coatings due to its effective solvent properties. It is also popular in cleaning products and fragrances.

**Grade Significance:** Technical Grade D-Limonene is suitable for industrial applications where high purity is not critical but effective solvency and performance are required. While not intended for direct human contact or food/pharmaceutical applications without further purification, it offers a cost-effective solution for many solvent-based processes.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	97.5	95	—	GC-FID
Color (APHA)	APHA	20	—	50	ASTM D1209
Refractive Index 20C	RIU	1.473	1.471	1.474	USP <831>
Specific Gravity (20°C)	g/mL	0.841	0.84	0.844	USP <841>
Residue After Ignition	%	0.01	—	0.05	USP <281>
Water Content	%	0.03	—	0.1	Karl Fischer

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

### PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance</b>	Clear to pale yellow liquid, citrus-like odor	<b>Odor</b>	Citrus, orange-like
<b>Form</b>	Liquid	<b>Boiling Point</b>	175°C (347°F)
<b>Melting / Freezing Point</b>	-96°C (-141°F)	<b>Flash Point</b>	48°C (118°F)
<b>Solubility</b>	Insoluble in water, soluble in organics	<b>Molecular Formula</b>	C <sub>10</sub> H <sub>16</sub>
<b>Molecular Weight</b>	136.23 g/mol	<b>Vapor Pressure (20°C)</b>	0.5 mmHg
<b>Viscosity (25°C)</b>	0.89 cP	<b>Refractive Index (20°C)</b>	1.474
<b>Density (25°C)</b>	0.845 g/mL	<b>Decomposition Temp.</b>	Not expected to decompose below 200°C under normal conditions

## APPLICATIONS

- 1. Paints and Coatings** — D-Limonene acts as a solvent in paints and coatings, aiding in the dissolution of resins and providing a more environmentally friendly alternative to traditional petroleum-based solvents. Its solvency and pleasant odor make it a desirable component in these formulations.
- 2. Cleaning Products** — D-Limonene is used in cleaning products to dissolve oils, grease, and grime, making it effective for degreasing and general cleaning applications. Its natural origin and citrus scent are appealing to consumers seeking environmentally conscious cleaning solutions.
- 3. Food and Beverage** — As a natural flavoring agent, D-Limonene imparts a citrus flavor and aroma to food and beverage products. It is often used in citrus-flavored candies, baked goods, and beverages, providing a natural alternative to synthetic flavorings.
- 4. Fragrances and Perfumes** — D-Limonene is incorporated into perfumes and fragrances for its pleasant citrus scent, contributing a fresh and uplifting note to fragrance compositions. It blends well with other fragrance ingredients and enhances the overall scent profile.
- 5. Adhesives** — D-Limonene can be used as a solvent in adhesive formulations. Its ability to dissolve certain polymers and resins makes it useful in creating solvent-based adhesives for various applications.
- 6. Agriculture** — D-Limonene is used in some agricultural applications, such as a pesticide for controlling certain insects. It can also be used as a cleaning agent for agricultural equipment.

## STORAGE & HANDLING

Proper storage of D-Limonene Technical Grade is crucial due to its flammability (H226: Flammable liquid and vapor). It should be stored in tightly closed containers in a cool, dry, and well-ventilated area, away from heat, sparks, open flames, and other sources of ignition. This minimizes the risk of fire and maintains product quality.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents.
- Ensure proper ventilation when handling to minimize inhalation exposure.
- Use appropriate personal protective equipment (PPE) such as gloves and goggles.

## AVAILABLE PACKAGING

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

## SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H226: Flammable liquid and vapor [Warning Flammable liquids]
- H304: May be fatal if swallowed and enters airways [Danger Aspiration hazard]
- H315: Causes skin irritation [Warning Skin corrosion/irritation]
- H317: May cause an allergic skin reaction [Warning Sensitization, Skin]
- H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]
- H412: Harmful to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

**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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