

Technical Data Sheet (TDS)

- Geraniol

Revision Date: 22 FEB 2026 **CAS Number:** 106-24-1 **Formula:** C₁₀ H₁₈ O **Molecular Weight:** 154.25 g/mol

1. Product Overview

Geraniol is a high-purity monoterpene alcohol with a **strong, classic rose-like floral and sweet green odor**, a key raw material in the fragrance, flavor, cosmetic and pharmaceutical industries. It exists as a trans-isomer and is widely found in natural essential oils (rose, geranium, lemon grass). Our synthetic Geraniol features high purity, consistent odor and stable quality, supplied with BHT antioxidant to prevent oxidation. It is compliant with international IFRA, FDA and EU REACH regulations, and is used as a fragrance core material, flavoring agent, cosmetic active and pharmaceutical intermediate, as well as a natural insect repellent raw material.

Core Characteristics: High purity (≥98.0%); authentic rose floral odor; supplied with antioxidant for stability; excellent compatibility; multi-industry applicability; compliant with global regulatory standards.

2. Technical Specifications (Complies with IFRA/Food/Cosmetic Industrial Standards)

Item	Specification	Test Method
Appearance	Colorless to pale yellow clear liquid	Visual Inspection
Assay (Purity)	≥ 98.0% (w/w)	Gas Chromatography (GC)
Odor	Characteristic rose-like floral, sweet green odor	Sensory Evaluation (IFRA Method)
Relative Density (20/20°C)	0.888-0.894 g/cm ³	Hydrometer Method
Refractive Index (20°C)	1.476-1.482	- Abbe Refractometer
Boiling Point	229-231 °C	Distillation Method
Flash Point (Closed Cup)	≥ 100°C	Pensky-Martens Method
Water Content	≤ 0.1% (w/w)	Karl Fischer Titration
Acid Value (as KOH)	≤ 0.5 mg/g	KOH Titration
Heavy Metals (Pb)	≤ 5 ppm	Atomic Absorption Spectrometry (AAS)
Residue on Evaporation	≤ 0.1% (w/w)	Gravimetric Method
Viscosity (25°C)	3.0-3.5 mPa·s	Rotational Viscometer
Antioxidant Content	BHT 0.05-0.1% (w/w, optional)	GC
Solubility	Slightly soluble in water; miscible with ethanol, ether, essential oils and vegetable oils	Shake Flask Method

3. Product Advantages

- Authentic Floral Odor:** Strong, natural rose-like floral note with sweet green undertones, consistent with natural plant essential oils, ideal for high-end fragrance and cosmetic formulation.
- High Purity & Stability:** Assay ≥98.0%, supplied with BHT antioxidant to prevent oxidation and odor degradation; consistent physical and odor properties across batches.
- Excellent Compatibility:** Miscible with all common fragrance raw materials (esters, alcohols, aldehydes, terpenes), cosmetic bases and essential oils; compatible with non-ionic/anionic/cationic surfactants (excluding strong oxidizers/acids).



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- Multi-Functional Application:** Serves as a core fragrance material, flavoring agent, cosmetic moisturizer and pharmaceutical intermediate; also acts as a natural insect repellent (effective against mosquitoes/flies).
- Regulatory Compliance:** Meets IFRA fragrance standards, China GB 2760 (food flavor), EU REACH and US FDA regulations; specified maximum use level in cosmetics (IFRA) to avoid skin sensitization.
- Cost-Efficient:** Low effective dosage in formulations; synthetic grade offers cost advantage over natural essential oil with higher Geraniol purity and stable supply.

4. Application Fields

4.1 Fragrance Industry

- Fine fragrances (perfumes, eau de toilette, cologne): Core material for floral (rose, geranium, jasmine) fragrance profiles; acts as a middle note and fragrance fixative to enhance scent longevity.
- Functional fragrances (air fresheners, candles, incense, car fresheners): Adds classic rose floral note to daily fragrance products.
- Household product fragrances (dish soap, laundry detergent, body wash): Sweet floral scent with long-lasting effect, popular in personal care and home care products.

4.2 Flavor Industry

- Food flavoring: Used in fruit-flavored (strawberry, peach, melon) and floral-flavored foods, beverages, baked goods and confectionery (compliant with GB 2760/FDA, low dosage).
- Essential oil blending: Blended with rose, geranium and lavender essential oils to create high-grade floral essential oil products.

5. Usage Methods & Dosage

5.1 Recommended Dosage (w/w, adjust based on formulation type; IFRA compliant)

Application Field	Dosage Range	Key Function
Fine Fragrances (Perfume/EDT)	2.0-8.0%	Middle note, fragrance fixative, core floral material
Cosmetic Formulations	0.1-0.5%	Floral scent additive, mild moisturizer (IFRA limit)
Household Product Fragrances	0.5-3.0%	Floral fragrance raw material
Food Flavoring	0.001-0.03%	Fruit/floral flavor enhancer
Essential Oil Blending	5.0-20.0%	Floral note core component
Insect Repellent Formulations	5.0-15.0%	Natural insect repellent active
Chemical Synthesis	10.0-60.0%	Key intermediate

6. Packaging & Storage

6.1 Packaging Specifications

- 1 L / 5 L Sealed dark glass bottles (laboratory/small-scale fragrance/flavor use, with BHT antioxidant);
- 25 L HDPE plastic drums (industrial/cosmetic use, opaque, with BHT antioxidant);
- 200 L stainless steel drums (bulk industrial use, with BHT antioxidant);
- Custom packaging** (100 mL-1000 L) available upon request (food-grade packaging for flavor use, antioxidant-free option for synthesis).

7. Safety & Handling

- The product is a skin irritant/sensitizer, eye irritant and combustible liquid; avoid direct undiluted contact with skin/eyes, and keep away from open flame and high temperature.
- Routine Handling:** Wear nitrile rubber gloves and chemical safety goggles; operate in a well-ventilated area; wash hands thoroughly with soap and water after use.
- Large-Scale Handling:** Wear a lab coat/protective clothing and a half-face respirator with organic vapor cartridge; use local exhaust ventilation to reduce vapor concentration.