

Technical Data Sheet (TDS)

- Cinnamic Aldehyde

Product Number: CA-20260215 | **CAS No.:** 104-55-2 | **Revision Date:** 15 FEB 2026 **Brand:** SIGALD |

Molecular Formula: C₉ H₈ O | **Molecular Weight:** 132.16 g/mol

1. Product Overview

Cinnamic Aldehyde (trans-Cinnamaldehyde) is a naturally occurring aromatic aldehyde, the main active component of cinnamon bark oil and cassia oil. It is a light yellow clear liquid with a characteristic strong and rich cinnamon/balsamic fragrance, manufactured by high-purity distillation of natural plant essential oils or synthetic synthesis (petrochemical/biological method), meeting food, cosmetic, fragrance, pharmaceutical and industrial grade standards.

As a high-value fine chemical raw material, Cinnamic Aldehyde has excellent fragrance properties, natural antibacterial/fungicidal activity and good chemical reactivity. It is widely used in flavor & fragrance, food, cosmetic, pharmaceutical, agricultural and fine chemical industries, with the advantages of pure cinnamon fragrance, high purity and stable performance (stabilized with antioxidant to prevent oxidation and polymerization). Its natural antibacterial property makes it a popular green additive in food and daily chemical fields.

Core Characteristics: High purity (≥98.0%); characteristic strong cinnamon fragrance; natural broad-spectrum antibacterial/fungicidal activity; good chemical reactivity for organic synthesis; food/cosmetic/pharmaceutical grade available; stabilized with BHT to prevent oxidation/polymerization; miscible with most organic solvents; limited water solubility.

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

Item	Specification (Grade: Food/Cosmetic/Pharmaceutical/Industrial)	Result (This Batch)
Appearance	Yellow to light brown clear liquid	Light yellow clear liquid
Assay (Cinnamic Aldehyde)	≥98.0%	98.7%
Melting Point	-8 ~ -6°C	-7.1°C
Boiling Point	246 ~ 248°C	247.2°C
Refractive Index (20°C)	1.6180 ~ 1.6220	1.6201
Relative Density (20/20°C)	1.046 ~ 1.052	1.049
Flash Point (Closed Cup)	≥100°C	102°C
Water Content	≤0.1%	0.03%
Heavy Metals (Pb)	≤5 ppm	0.9 ppm
Heavy Metals (As)	≤1 ppm	0.2 ppm
Residue on Ignition	≤0.05%	0.01%
Odor	Characteristic strong cinnamon/balsamic fragrance, no off-odor	Conforms to standard
Solubility	Miscible with ethanol, ether, most organic solvents; slightly soluble in water	Conforms to standard
Antioxidant Content (BHT)	≤0.01% (stabilizer)	0.005%
Antibacterial Rate (E. coli, 2h)	≥99% (1‰ concentration)	99.6%

3. Product Advantages



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1. **High Purity & Stable Quality:** Assay $\geq 98.0\%$, low impurity and water content; each batch has consistent physical and chemical indicators; stabilized with BHT to prevent oxidation, polymerization and peroxide formation, extending shelf life and ensuring performance stability in various application scenarios.
2. **Natural & Safe (Controlled Dosage):** Natural grade derived from cinnamon/cassia essential oils (FDA GRAS certified for food use with limited dosage); various grades meet international safety standards for food, cosmetic and pharmaceutical use (strict dosage control for sensitive applications).

4. Application Fields

4.1 Flavor & Fragrance Industry

- **Perfume & Cosmetic Fragrance:** Core raw material for cinnamon, spicy, woody and oriental fragrances; used in perfume, cologne, shampoo, body wash, soap, candle and air freshener, with strong and long-lasting fragrance expression.
- **Food & Beverage Flavor:** Key flavoring agent for candy, pastry, ice cream, dairy products, beverage and baked goods (complies with food additive use standards with strict dosage limit); the core raw material for cinnamon flavor formulation, widely used in food and beverage industry.

4.2 Food Industry

- **Natural Food Preservative:** Green antibacterial/fungicidal additive for food and beverage (limited dosage); effectively inhibits the growth of bacteria and mold, extending product shelf life; no chemical preservative residues, meeting green food standards.
- **Flavor Enhancer:** Minor additive for condiments (cinnamon powder, sauce, marinade) to enhance cinnamon flavor and improve product taste.

5. Usage Methods & Dosage

Application Field	Recommended Dosage (w/w)	Note
Perfume formulation	2-8%	Blend with other fragrance raw materials
Cosmetic fragrance (shampoo/body wash/soap)	0.05-0.5%	Controlled concentration to avoid irritation
Food flavor formulation	0.001-0.05%	FDA/GB limited dosage, food grade only
Food preservative	0.01-0.1%	Broad-spectrum antibacterial, food grade only
Pharmaceutical synthesis	According to reaction process	Pharmaceutical grade only
Agricultural fungicide	0.1-0.5%	Industrial grade, dilute before use
Household antibacterial cleaner	0.05-0.2%	Industrial/cosmetic grade

6. Packaging & Storage

6.1 Packaging Specifications

- **Lab/Small Scale:** 100 mL, 500 mL dark glass bottles (sealed) – for R&D and small-batch use
- **Commercial Medium Scale:** 5 kg, 25 kg HDPE plastic drums (sealed, dark) – for cosmetic/fragrance/food use
- **Bulk Large Scale:** 200 kg HDPE plastic drums, 1000 kg IBC totes (inner lining with anti-corrosion film, dark) – for industrial/pharmaceutical synthesis
- **Custom Packaging:** Available upon customer request (e.g., 1 L dark glass/HDPE containers; food grade packaging for food flavor/preservative use)

7. Safety & Protection

1. The product is a Class 4 combustible liquid and a skin/eye irritant/sensitizer; keep away from heat, sparks and open flames in all handling, storage and transport processes.