

TECHNICAL DATA SHEET

CINNAMIC ALDEHYDE

Synthetic spicy-balsamic aromatic unsaturated aldehyde

1. RAW MATERIAL IDENTIFICATION

Product name	Cinnamic Aldehyde
Chemical name	3-Phenylprop-2-enal
INCI name	CINNAMAL
Synonyms	Cinnamaldehyde; Trans-Cinnamaldehyde; 3-Phenylpropenal
CAS number	104-55-2
EC / EINECS number	203-213-9
Molecular formula	C ₉ H ₈ O
Molecular weight	132.16 g/mol
Raw material type	Synthetic aroma chemical - aromatic unsaturated aldehyde
Origin	Synthetic
Country of origin	India
ISO 16128	100% non-natural-origin ingredients

2. OLFACTORY CLASSIFICATION AND ODOUR PROFILE

Cinnamic Aldehyde belongs to the Spicy / Balsamic / Aldehydic olfactory family. It functions primarily as a middle note and gives fragrance compositions a strong, warm and immediately recognisable cinnamon character.

Its odour is intense, warm and distinctly spicy, with dominant cinnamon and cassia notes, sweet aldehydic warmth and a mild balsamic-resinous background. Owing to its high olfactory strength, even relatively low levels can clearly define the spicy character of a composition.



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3. DESCRIPTION AND FUNCTION IN FRAGRANCE COMPOSITION

Cinnamic Aldehyde is a synthetic aroma chemical with a powerful, warm and characteristic cinnamon odour. It is one of the principal materials used to build cinnamon and cassia accords, combining a dominant spicy note with sweet and mildly balsamic-resinous tones.

In fragrance compositions it functions primarily as a middle note. Its high olfactory strength allows it to define the spicy profile at comparatively low levels and to connect lighter top notes with warmer amber, balsamic and woody components.

It is particularly important in cinnamon and cassia reconstructions, where it acts as a key aroma chemical. It is also widely used in spicy oriental and amber compositions and in gourmand accords that combine cinnamon with vanilla, caramel, chocolate or other warm sweet notes.

It combines well with eugenol and isoeugenol in complex spicy accords, and with vanillin, benzoin and labdanum in warm balsamic structures. With patchouli, sandalwood and other woody materials it supports deeper oriental compositions, while citrus notes can reduce its heaviness and provide a brighter spicy opening.

Because of its very high olfactory strength and sensitising potential, precise and controlled dosing is required. Excessive levels can quickly become dominant, sharp and strongly cinnamon-phenolic, suppressing other elements of the composition.

Functional role in perfumery: A powerful spicy middle note, principal building material for cinnamon and cassia accords, and a modifier that links citrus, floral, amber, balsamic, woody and gourmand elements.

4. APPLICATION AND OLFATORY COMPATIBILITY

Recommended use in fragrances: For cinnamon and cassia reconstructions and for spicy, amber, oriental, gourmand, woody and floral-spicy compositions.

It is suitable for:

- cinnamon and cassia accords;
- spicy and oriental compositions;
- amber and balsamic fragrances;
- gourmand and confectionery accords;
- floral-spicy compositions;
- woody-spicy structures;
- cinnamon-vanilla, caramel and chocolate accords;
- cosmetic and functional fragrance compositions.

It combines particularly well with eugenol, isoeugenol, vanillin, benzoin, labdanum, patchouli, sandalwood, citrus notes and warm woody accords.

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5. RECOMMENDED USE

Recommended use in fragrances	Cinnamon and cassia reconstructions; spicy, amber, oriental, gourmand, woody and floral-spicy compositions
Typical concentrations	The supplied TDS does not state a recommended maximum use level; determine the concentration according to the required intensity and regulatory limits
IFRA status	The concentration in the finished formulation must comply with the current IFRA certificate for the relevant finished-product category

Cinnamal has significant sensitising potential and must be dosed carefully. Its presence in finished cosmetic products must also be assessed against current fragrance-allergen declaration requirements. Preliminary testing of compatibility, stability, colour and odour profile is recommended.

6. PHYSICOCHEMICAL AND TECHNICAL DATA

Appearance	Oily liquid
Colour	Colourless to pale yellow
Odour	Strong, cinnamon-like, sweet and spicy
Olfactory character	Intensely warm and spicy, with dominant cinnamon and cassia, sweet aldehydic character and mild balsamic depth
Relative density at 25 °C	1.048-1.052
Refractive index at 20 °C	1.618-1.623
Flash point	120 °C, closed cup
pH	5.22
Dynamic viscosity	4.5 mPa·s
Trans isomer	Minimum 98.5%
Cis isomer	Maximum 1.0%
Total isomer content by GC	99.0-100.0%
Solubility	Soluble in methanol, diethyl ether and acetone
Antioxidants	Contains no added antioxidants

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7. STABILITY AND COMPATIBILITY

Stable when correctly stored in the original, tightly closed container, protected from light, heat and air. It combines well with other spicy, balsamic, amber, woody, citrus and gourmand materials, especially eugenol, vanillin, benzoin, labdanum, patchouli, citrus notes and warm woody accords. Compatibility, colour, stability and odour profile must be confirmed in the finished formulation and intended packaging.

8. REGULATORY DATA AND STATUS

Vegan status: Vegan; no materials of animal origin are used in the manufacturing process.

GMO status: Contains no GMOs and is not derived from GMO raw materials.

ISO 16128 status: 100% non-natural-origin ingredients.

IFRA status: Use must comply with current IFRA requirements for the relevant finished-product category.

Allergen status: Cinnamal is a declarable fragrance allergen. Its concentration in the finished cosmetic product must be assessed and declared when the applicable regulatory conditions are met.

Halal status: Halal compliant. Kosher status: Meets Kosher requirements.

Nanomaterials: Contains no nanomaterials. BSE/TSE status: No BSE/TSE risk; materials of animal origin are not used at any stage of manufacture.

Animal testing: The product has not been tested on animals.

Palm oil: Contains no palm oil, palm-kernel oil or their derivatives.

9. STORAGE AND SHELF LIFE

Store in the original, tightly closed container, protected from prolonged exposure to light, heat and air. Close the container immediately after use.

Recommended storage temperature: Maximum 25 °C.

Shelf life: 24 months under the prescribed storage conditions.

10. SAFETY INFORMATION

Cinnamic Aldehyde is intended for industrial and professional use in fragrances, cosmetics and flavours. Avoid direct contact with the undiluted material.

Use appropriate protective equipment, avoid contact with skin and eyes and ensure adequate ventilation. Consult the current SDS before use and follow all applicable handling and exposure-control measures.

The final concentration must comply with the current IFRA certificate, the safety assessment of the finished product and the regulations of the target market.

11. DISCLAIMER

The information applies solely to the described raw material and does not replace the specification, COA, IFRA documentation or SDS issued by the specific manufacturer. The user is responsible for verifying suitability, stability, safety and regulatory compliance in the intended application and target market. This document does not constitute regulatory approval or a guarantee of finished-product properties.