

TECHNICAL DATA SHEET

COUMARIN

Synthetic sweet-balsamic aroma chemical with tonka bean and cut-hay character

1. RAW MATERIAL IDENTIFICATION

Product name	Coumarin
INCI name	COUMARIN
IUPAC name	2H-1-Benzopyran-2-one
Chemical / REACH name	Coumarin
Synonyms	1,2-Benzopyrone; Benzopyran-2-one; Cumarin
CAS number	91-64-5
EC number	202-086-7
RIFM ID	120
FEMA / JECFA / FLAVIS numbers	Not stated
Molecular formula	C ₉ H ₆ O ₂
Molecular weight	146.15 g/mol
Chemical group	Aromatic lactone / benzopyrone
Raw material origin	Synthetic; India
ISO 16128	0% natural origin

2. OLFACTORY CLASSIFICATION AND ODOUR PROFILE

Coumarin belongs to the Gourmand - Sweet and Balsamic olfactory families, with pronounced Powdery and Herbal - Agrestic - Mint characteristics. It acts as a base note and contributes warmth, fullness and persistence to a composition.

Its odour is sweet, warm and long-lasting, with recognisable nuances of freshly cut and dried hay, tonka bean and vanilla, supported by almond-like, powdery and mildly balsamic facets.



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3. DESCRIPTION AND FUNCTION IN FRAGRANCE COMPOSITIONS

Coumarin is a classic aroma chemical characterised by the odour of freshly cut and dried hay, tonka bean and sweet vanilla. Its profile includes warm almond-like, powdery and mildly balsamic nuances that provide softness and recognisable sweet warmth to a fragrance composition.

It occurs naturally in tonka bean, sweet clover, cinnamon and other botanical materials, while this product is of synthetic origin. Coumarin is one of the fundamental building blocks of fougère compositions and is also widely used in amber, tobacco, gourmand and powdery-floral fragrances.

Functional role in perfumery: A sweet, balsamic and powdery base note, a building block of fougère accords and a fragrance fixative. It connects aromatic, floral, woody and gourmand notes and increases their fullness and persistence.

4. APPLICATION AND OLFACTORY COMPATIBILITY

Recommended use in fragrances: For building fougère, tonka and hay accords, vanilla, amber and powdery base notes, and for increasing the warmth and persistence of fragrance compositions.

It is used to create and modify:

- classic and contemporary fougère accords;
- tonka bean and cut-hay compositions;
- aromatic lavender accords;
- vanilla, almond and gourmand compositions;
- sweet amber and oriental fragrances;
- powdery and powdery-floral accords;
- tobacco and leather compositions;
- chypre and woody-balsamic fragrances;
- fern, sweet-clover and dry-grass accords;
- fragrances for soaps, cosmetics and hygiene products.

It blends well with lavender, linalool, linalyl acetate, bergamot, geraniol, vetiver, patchouli, sandalwood materials, cedarwood, oakmoss, vanillin, ethyl vanillin, heliotropin, benzoin, labdanum, tobacco materials and musky aroma chemicals.



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5. RECOMMENDED USE

Recommended use level	0.10-5.00% in the fragrance concentrate
Lower concentrations	Below 0.10% for a subtle increase in warmth and sweetness
IFRA status	Restricted; apply the limit for the relevant finished-product category
IFRA Category 4	Maximum 1.50% in the finished product under the supplied 51st Amendment certificate

Because of its solid crystalline form, preparation of a 10% solution in ethanol, dipropylene glycol or another suitable perfumery solvent is recommended. Gentle warming with stirring may be necessary for complete dissolution. Check clarity and possible recrystallisation after cooling.

6. PHYSICOCHEMICAL AND TECHNICAL DATA

Appearance	Crystalline powder
Colour	White
Odour	Sweet, warm and long-lasting, with cut-hay, tonka bean and vanilla nuances
Melting point	Approximately 68 °C
Flash point	93 °C, closed-cup method
Purity	99.0-100.0%
Solubility	Slightly soluble in water; soluble in ethanol, perfumery oils and suitable organic solvents
Shelf life	24 months



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7. STABILITY AND COMPATIBILITY

Stable under the recommended storage conditions. Avoid prolonged exposure to air, light, moisture and elevated temperature. Compatibility, stability, colour, solubility and odour profile must be confirmed in the final formulation and intended packaging.

8. REGULATORY DATA AND STATUS

Declarable fragrance allergen: Coumarin. Its presence must be declared when the concentration exceeds 0.001% in leave-on products or 0.01% in rinse-off products.

Vegan status: Vegan; contains no animal-derived ingredients. GMO status: Does not contain and is not derived from GMOs.

Nanomaterials: Does not contain nanomaterials. Antioxidants and stabilisers: None added.

Solvents: None added.

Halal status: Compliant with Halal requirements. Kosher status: Certified.

9. STORAGE AND SHELF LIFE

Store at temperatures up to 25 °C in the original, well-filled and hermetically sealed packaging, protected from air, light, moisture and heat sources. Close the container immediately after use.

Shelf life: 24 months when stored in the original packaging under the recommended conditions.

10. SAFETY INFORMATION

Coumarin is intended for professional use as an ingredient in fragrance and cosmetic compositions. It must not be applied directly to the skin in concentrated form.

H302: Harmful if swallowed. H317: May cause an allergic skin reaction. H412: Harmful to aquatic life with long-lasting effects.

Avoid generating and inhaling dust. Wear suitable protective gloves and eye protection. Prevent contact with the skin and discharge into drains, soil or waterways. The final concentration must comply with the current IFRA certificate, the safety assessment and regulations of the target market.

11. DISCLAIMER

The information applies exclusively to the raw material described 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 for the intended application and target market. This document does not constitute regulatory approval or a guarantee of the properties of the finished product.