

TECHNICAL DATA SHEET

C 06 HEXYL ALDEHYDE NATURAL

Natural aldehydic-green aroma chemical with a freshly cut grass and green-leaf character

1. RAW MATERIAL IDENTIFICATION

Product name	C 06 Hexyl Aldehyde Natural
Chemical name	Hexanal
Synonyms	Aldehyde C-6; Hexyl Aldehyde; Hexaldehyde; Caproaldehyde; Caproic Aldehyde; n-Hexanal
INCI name	HEXANAL
CAS number	66-25-1
EC number	200-624-5
FEMA number	2557
JECFA number	92
IUPAC name	Hexanal
Molecular formula	$C_6H_{12}O$
Molecular weight	100.16 g/mol
Chemical group	Saturated straight-chain aliphatic aldehyde
Raw material origin	Natural, according to the documentation of the specific manufacturer
Raw material category	Natural aroma chemical

The designation Natural refers to the origin and production method of the specific commercial product and must be supported by the manufacturer's documentation.

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2. OLFACTORY CLASSIFICATION AND ODOUR PROFILE

Fragrance note	Top note
Primary olfactory family	Aldehydic
Secondary olfactory family	Green
Odour profile	Powerful, penetrating, aldehydic, fatty-green and grassy, with nuances of freshly cut grass, green leaves and unripe apple

C 06 Hexyl Aldehyde Natural is a natural aroma chemical with an exceptionally powerful aldehydic-green odour profile. In concentrated form, it displays a penetrating, fatty, sharp and slightly waxy character. When properly diluted, it develops recognisable nuances of freshly cut grass, crushed green leaves, unripe apple peel and green fruit.

3. DESCRIPTION AND FUNCTION IN FRAGRANCE COMPOSITION

Hexanal is one of the fundamental aroma chemicals used to create realistic green and vegetative effects. It provides freshness, naturalness, sharpness and an immediate green impact. It is particularly useful for linking fruity notes with the green, citrus, floral and aromatic parts of a fragrance.

The material has very high olfactory strength and is therefore used in small quantities. Excessive dosing may produce a fatty, rancid, metallic or aggressively grassy effect. It is most pronounced in the opening of the composition, while its intensity gradually diminishes during evaporation.

4. APPLICATION AND OLFACTORY COMPATIBILITY

C 06 Hexyl Aldehyde Natural is used as a powerful modifier of green, fruity, aldehydic and citrus top notes. Its primary role is to create the effect of freshly cut grass, green leaves, unripe fruit and freshly cut plant stems.

Suitable for:

- green and vegetative accords;
- freshly cut grass accords;
- leaf and plant-stem compositions;
- green apple, pear and unripe-fruit fragrances;
- citrus and citrus-green compositions;
- floral, muguet and jasmine accords;
- aromatic, fougère and chypre fragrances;
- tea and herbal accords;
- soaps, detergents and air-care products.

It combines well with cis-3-hexenol, cis-3-hexenyl acetate, trans-2-hexenal, galbanum, citrus oils, linalool, linalyl acetate, dihydromyrcenol, jasmine materials, muguet ingredients and fruity esters.

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5. RECOMMENDED USE

Indicative use level	Traces up to 0.50%; most commonly 0.001-0.10% in the fragrance concentrate
0.001-0.01%	Subtle green impact and increased naturalness of the composition
0.01-0.10%	Clearly expressed leaf, grass and unripe-fruit effect
0.10-0.50%	Dominant aldehydic-green effect in dedicated accords
Pre-dilution	1% in DPG or ethanol; a 0.1% solution may be used for trace dosing

The stated levels are indicative perfumery concentrations, not regulatory limits. The final use level must be determined according to the current IFRA Standards, manufacturer documentation, product category and safety assessment of the finished formulation.

6. PHYSICOCHEMICAL AND TECHNICAL DATA

Appearance	Clear, mobile liquid
Colour	Colourless to pale yellow
Relative density	Approximately 0.808-0.817
Refractive index at 20 °C	Approximately 1.402-1.407
Melting point	Approximately -56 °C
Boiling point	Approximately 128-131 °C
Flash point	Approximately 32 °C, Tag Closed Cup method
Solubility	Very slightly soluble in water; miscible with ethanol, propylene glycol, most fixed oils and common organic perfumery solvents
Volatility	Relatively high; develops rapidly in the top notes

The stated physicochemical values are standard approximate ranges. Exact specifications, measurement temperatures and methods are defined by the documentation of the specific manufacturer.

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7. STABILITY AND FORMULATION COMPATIBILITY

Hexanal is sensitive to oxidation caused by exposure to air, light and elevated temperature. During ageing, acidity may increase and the odour profile may change. Stability, colour, odour and compatibility must be confirmed in the intended finished formulation and packaging.

8. REGULATORY DATA AND STATUS

Intended use: Professional use in fragrance, cosmetic and functional fragrance formulations.

Natural origin: Natural status must be confirmed by the manufacturer's specification and the appropriate statement of origin.

IFRA status: According to currently available information, no specific quantitative IFRA restriction has been established for hexanal. Nevertheless, all current IFRA requirements must be applied and a safety assessment of the finished product must be performed.

9. STORAGE AND SHELF LIFE

Store in a tightly closed, nearly full container in a cool, dry and dark place, protected from air, heat and direct sunlight. An inert-gas atmosphere is recommended for prolonged storage.

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

10. SAFETY INFORMATION

C 06 Hexyl Aldehyde Natural is a concentrated perfumery raw material intended for professional use. It is not used on its own as a finished fragrance product and must not be applied undiluted directly to the skin.

Concentrated hexanal is a flammable liquid and vapour. It may cause skin irritation and serious eye irritation, while concentrated vapours may irritate the respiratory system. The exact classification must be taken from the current SDS for the specific product.

When handling the material:

- wear suitable protective gloves and eye protection;
- ensure good ventilation in the working area;
- avoid contact with skin and eyes;
- avoid inhalation of concentrated vapours;
- keep away from heat, sparks, open flames and other ignition sources;
- keep the container tightly closed and out of reach of children.

A flash point of approximately 32 °C means that a flammable vapour-air mixture may form at moderate room temperatures. The material must therefore not be heated or used near ignition sources.

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 identity, origin, purity, 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.