

TECHNICAL DATA SHEET

METHYL DIHYDRO-JASMONATE (BHT FREE)

Synthetic jasmine aroma chemical with a delicate, transparent and highly diffusive floral character

1. RAW MATERIAL IDENTIFICATION

Product name	Methyl Dihydro-Jasmonate (BHT FREE)
Chemical name	Methyl Dihydrojasmonate
Synonyms	Hedione®; Methyl Dihydrojasmonate; Methyl Dihydroisojasmonate; MDJ
INCI name	METHYL DIHYDROJASMONATE
CAS number	24851-98-7
EC number	246-495-9
FEMA number	3408
IUPAC name	Methyl 2-(3-oxo-2-pentylcyclopentyl)acetate
Molecular formula	$C_{13}H_{22}O_3$
Molecular weight	226.32 g/mol
Chemical group	Cyclic keto ester; jasmonic acid derivative
Raw material origin	Synthetic
Raw material category	Aroma chemical
Special characteristic	BHT free

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2. OLFACTORY CLASSIFICATION AND ODOUR PROFILE

Fragrance note	Middle note
Primary olfactory family	Floral - Jasmine
Odour profile	Delicate, transparent and diffusive floral-jasmine odour with fresh, slightly fruity, green and creamy-lactonic nuances
Application	Fragrance compositions, fragrance bases and cosmetic products

3. DESCRIPTION AND FUNCTION IN FRAGRANCE COMPOSITION

Methyl Dihydro-Jasmonate (BHT FREE), also known under the trade name Hedione®, is one of the most important modern jasmine aroma chemicals. It has a delicate, airy and slightly fruity jasmine odour, with nuances of fresh white flowers, orange blossom, green petals and a subtle creamy-lactonic tone.

Unlike heavier and more distinctly animalic jasmine materials, it does not create a dense or dominant floral effect. It provides transparency, naturalness, spaciousness and gradual diffusion. Its strength lies in its ability to make a fragrance feel more open, harmonious and diffusive.

It is particularly important in jasmine and other white-floral accords. It can also soften citrus and green notes, connect the floral heart with a woody base and improve the overall balance of a fragrance. At higher concentrations, it provides a recognisable radiant, airy and elegant character.

The designation BHT FREE means that the product contains no butylated hydroxytoluene added as an antioxidant. This characteristic does not alter the basic olfactory profile, but permits use in formulations in which the absence of BHT is required.

Functional role in perfumery: Floral building material, diffusivity enhancer and composition modifier. It provides naturalness, volume and transparency to jasmine and white-floral accords, links the stages of fragrance development and allows other notes to develop more clearly without increasing the weight of the composition.

4. APPLICATION AND OLFACTORY COMPATIBILITY

Recommended use in fragrances: Intended for building transparent jasmine, white-floral and floral-fruity middle notes and for increasing the diffusivity, spaciousness and naturalness of fragrance compositions.

It is used to create and modify:

- jasmine and other white-floral accords;
- orange blossom, tuberose, gardenia and magnolia compositions;
- floral-fruity and citrus-floral fragrances;
- rose, muguet, lilac and peony accords;
- transparent, airy and modern floral compositions;
- green, tea and aromatic accords;
- fougère, chypre and woody-floral fragrances;
- musk and amber compositions requiring greater diffusivity;
- masculine and unisex fragrances;
- fragrances for soaps, cosmetics and household-care products.

It combines well with benzyl acetate, linalool, linalyl acetate, hydroxycitronellal, phenylethyl alcohol, indole, salicylates, ionones, citrus oils, jasmine materials, ylang-ylang, sandalwood, cedar, amber and musk materials.

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5. RECOMMENDED USE

Recommended use level	2.00-15.00% in the fragrance concentrate
Lower levels	Subtle floral modifier and diffusivity enhancer
Higher levels	Pronounced transparent jasmine and modern floral character
Method of use	May be added directly to the fragrance concentrate
Laboratory dilution	10% in ethanol, DPG or another suitable perfumery solvent

It may be used below 2% as a subtle modifier and above 15% when a pronounced transparent floral effect is required. The stated range is a formulation recommendation, not a regulatory maximum concentration.

IFRA certificate: According to the manufacturer's certificate issued in accordance with the 51st IFRA Amendment, the material is permitted up to 100% in the listed product categories. This is not a recommendation to use it at 100%; the final level must be determined according to the desired olfactory effect, safety assessment and intended use of the finished product.

6. PHYSICOCHEMICAL AND TECHNICAL DATA

Appearance	Liquid
Colour	Colourless to pale yellow
Relative density at 20 °C	0.998-1.006
Refractive index at 20 °C	1.457-1.462
Melting point	Below -20 °C
Boiling point	Approximately 303 °C
Flash point	156 °C, closed-cup method
Auto-ignition temperature	259 °C
Purity	96.0-100.0%; according to the SDS, at least 98.0%
Water solubility	Slightly soluble; approximately 574 mg/l at 20 °C
Solubility in ethanol	Soluble
Vapour pressure	0.002104 hPa at 25 °C
Log Pow	2.81 at 30 °C
Residual solvents	None
Storage	Up to 25 °C in the original, tightly closed container with minimal headspace, protected from air, light and heat sources
Shelf life	24 months

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7. STABILITY AND STORAGE

Stable under normal conditions of use and storage. Avoid prolonged exposure to air, light, elevated temperatures and strong oxidising agents. Carefully reseal opened containers and store them upright. Confirm stability and compatibility in the finished formulation and intended packaging.

8. REGULATORY DATA AND STATUS

BHT status: Contains no BHT added as an antioxidant.

Vegan status: Vegan; contains no animal-derived ingredients.

GMO status: Does not contain and is not derived from GMOs.

Nanomaterials: Not stated in the supplied TDS.

Endocrine disruptors: Contains no components identified as endocrine disruptors at a concentration of 0.1% or higher.

9. SAFETY INFORMATION

Methyl Dihydro-Jasmonate (BHT FREE) is intended for professional use as an ingredient in fragrance and cosmetic compositions. Direct application of the undiluted material to the skin is not recommended.

According to the supplied SDS, the product is not classified as hazardous under Regulation (EC) No 1272/2008 - CLP. No GHS pictograms, signal word or hazard statements are required.

Acute oral toxicity	LD ₅₀ > 5,000 mg/kg, rat
Acute dermal toxicity	LD ₅₀ > 5,000 mg/kg, rabbit
Skin irritation	No data available
Serious eye damage / irritation	No data available
Respiratory or skin sensitisation	No data available
Phototoxicity	No data available
PBT status	No data available
vPvB status	Not considered to be very persistent or very bioaccumulative

During professional handling, avoid contact with skin and eyes, inhalation of vapour or aerosol and release into the environment. Use suitable protective gloves and eye protection when required by the risk assessment and ensure adequate ventilation.

10. 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.