

ANALYSIS CERTIFICATE

PRODUCT: HEDIONE

BATCH: 4548203

BEST BEFORE DATE: 07/2027

| | RESULTS | SPECIFICATIONS MIN MAX | |
|-----------------------|-------------------------|------------------------|--------|
| ASPECT | LIQUID | | |
| COLOR | COLORLESS - PALE YELLOW | | |
| ODOUR | FLORAL, JASMIN | | |
| DENSITY 20°C (g/cm3) | | 0,996 | 1,008 |
| REFRACTIVE INDEX 20°C | | 1,4540 | 1,4650 |
| PURITY AS ISOMERS SUM | | 96,00 | |
| (%) | | | |

OTHER INFORMATION

REACH: 01-2119493355-31



GMO CERTIFICATE

| Product: HEDIONE |
|---|
| We hereby confirm the above mentioned product is not derived from genetically modified starting raw materials, or additives that are derived from genetically modified organisms, and do not contain detectable levels of genetically modified materials (known as PCR negative). |
| Therefore it is exempt from the requirements of EU Regulations 1829/2003EC and 1830/2003/EC. |
| |
| |
| 28/01/2019 |
| |
| |

The information provided in this document is based within the present knowledge of the supplier. The declaration of ingredients / substances is in accordance with impurities higher than 0,01%, and do not replace analytical determinations in the material (as it could have traces of impurities not intentionally added). This document has been issued by our computer system and has, therefore, not been signed.



CERTIFICATE OF CONFORMITY TO THE IFRA STANDARDS

Product : **Hedione**CAS : 24851-98-7
Reference : 100616600

We certify that the above-mentioned product has been assessed according to the most recent Amendment (51st, June 30th, 2023) of the IFRA Code of Practice, and the concentration levels listed below are the maximum dosage allowed in each IFRA category:

| Application | Maximum level of use (%) |
|--------------|--------------------------|
| Category 1 | 100.000 |
| Category 2 | 100.000 |
| Category 3 | 100.000 |
| Category 4 | 100.000 |
| Category 5A | 100.000 |
| Category 5B | 100.000 |
| Category 5C | 100.000 |
| Category 5D | 100.000 |
| Category 6 | 100.000 |
| Category 7A | 100.000 |
| Category 7B | 100.000 |
| Category 8 | 100.000 |
| Category 9 | 100.000 |
| Category 10A | 100.000 |
| Category 10B | 100.000 |
| Category 11A | 100.000 |
| Category 11B | 100.000 |
| Category 12 | 100.000 |

Ingredients - substances subject to restrictions:

Ingredients - substances subject to specifications:

Substances subject to prohibition:

This version of the certificate has been prepared with the information and data available at the time of its generation. The information provided herein is based on internal measurements, data obtained from our suppliers or bibliographic sources. The declaration of substances is in accordance with impurities higher than 0.001%, and does not replace analytical determinations in the material (as it could contain traces of impurities not intentionally added). This is a



CERTIFICATE OF CONFORMITY TO THE IFRA STANDARDS

computer-generated document and therefore not signed.



CERTIFICATE OF CONFORMITY TO THE IFRA STANDARDS

| IFRA Cat. | Finished Product Type (QRA) |
|-----------|---|
| 1 | Lip products of all types (solid and liquid lipsticks, balms, clear or colored, etc.) Children's toys |
| 2 | Deodorant and antiperspirant products of all types including any product with intended or reasonably foreseeable use on the axillae or labelled as such (spray, stick, roll-on, under-arm, deo-cologne and body spray, etc.) Body sprays (including body mist) |
| 3 | Eye products of all types(eye shadow, mascara, eyeliner, eye make-up, eye masks, eye pillows, etc.) including eye care and moisturize Facial make up and foundation Make-up remover for face and eyes Nose pore strips Wipes or refreshing tissues for face, neck, hands, body Body and face paint (for children and adults) Facial masks for face and around the eyes |
| 4 | Hydroalcoholic and non-hydroalcoholic fine fragrance of all types Eau de Toilette, Parfum, Cologne, solid perfume, fragrancing cream, etc.), aftershaves of all types (except creams and balms) Fragranced bracelets Ingredients of perfume kits and fragrance mixtures for cosmetic kits Scent pads, foil packs Scent strips for hydroalcoholic products |
| 5.A | Body creams, oils, lotions of all types Foot care products (creams & powders) Insect repellent (intended to be applied to the skin) All powders and talcs (excluding baby powders and talcs) |
| 5.B | Face toner Facial moisturizers and creams (including care products for beard and mustache) |
| 5.C | Hand cream Nail care products including cuticle creams, nail lacquer remover, etc. Hand sanitizers |
| 5.D | Baby cream/lotion, baby oil, baby powders and talcs |
| 6 | Toothpaste Mouthwash, including breath sprays Toothpowder, strips, mouthwash tablets |
| 7.A | Hair permanent or other hair chemical treatments (rinse-off) (e.g., relaxers), including rinse-off hair dyes |
| 7.B | Hair sprays of all types (pumps, aerosol sprays, etc.) Hair styling aids non sprays (mousse, gels, leave on conditioners) Hair permanent or other hair chemical treatments (leave-on) (e.g., relaxers), including leave-on hair dyes Shampoo - Dry (waterless shampoo) Hair deodorizer, hair perfume |
| 8 | Intimate wipes Intimate deodorant spray Tampons Baby wipes Toilet paper (wet) |
| 9 | Bar soap Shampoo of all type Cleanser for face (rinse-off) Conditioner (rinse-off) Liquid soap Body washes and shower gels of all types Baby wash, bath, shampoo Bath gels, foams, mousses, salts, oils and other products added to bathwater (such as bath bombs) Foot care products (feet are placed in a bath for soaking) Shaving creams of all types (stick, gels, foams, etc.) All depilatories (including facial) and waxes for mechanical hair removal Shampoos for pets |
| 10.A | Hand wash laundry detergent (including concentrates) Laundry pre-treatment of all types (e.g. paste, sprays, sticks) Hand dishwashing detergent (including concentrates) Hard surface cleaners of all types (bathroom and kitchen cleansers, furniture polish, etc.) Machine laundry detergents with skin contact (e.g. liquids, powders) including concentrates Toilet seat wipes Fabric softeners of all types excluding fabric softener sheets Household cleaning products, other types including fabric cleaners, soft surface cleaners, carpet cleaners, furniture polishes sprays and wipes, leather cleaning wipes, stain removers, fabric enhancing sprays, treatment products for textiles (e.g., starch sprays, fabric treated with fragrances after wash, deodorizers for textiles or fabrics) Floor wax Fragranced oil for lamp ring, reed diffusers, pot-pourri, liquid refills for air fresheners (non-cartridge systems), etc. Ironing water (Odorized distilled water) Dry cleaning kits (involving manual application on the textile) |
| 10.B | Animal sprays – sprays applied to animals of all types Air freshener sprays, manual, including aerosol and pump Aerosol/spray insecticides |
| 11.A | Feminine hygiene conventional pads, liners, interlabial pads Baby diapers Incontinence pant, pad Toilet paper (dry) |
| 11.B | Tights with moisturizers Scented socks, gloves Facial tissues (dry tissues) Napkins Pillow spray Paper towels Wheat bags Facial masks (paper/protective) e.g. surgical masks not used as medical device Fertilizers, solid (pellet or powder) |
| 12 | Candles of all types (including encased) Laundry detergents for machine wash with minimal skin contact (e.g. Liquid tabs, pods) Automated air fresheners and fragrancing of all types (concentrated aerosol with metered doses (range 0.05-0.5mL/spray), plug-ins, closed systems, solid substrate, membrane delivery, electrical, powders, fragrancing sachets, incense, liquid refills (cartridge), air freshening crystals, solid non aerosol car diffuser) Air delivery systems Cat litter Cell phone cases Deodorizers/maskers not intended for skin contact (e.g., fabric drying machine deodorizers, carpet powders) Dry cleaning kits (placed in the dryer) Dryer sheets and fabric softener sheets Fuels Insecticides (e.g., mosquito coil, paper, electrical, for clothing) excluding aerosols/sprays Joss sticks or incense sticks Dishwash detergent and deodorizers – for machine wash Olfactive board games Paints Plastic articles (excluding toys) Scratch and sniff Scent pack Scent delivery system (using dry air technology) Shoe polishes Rim blocks (toilet) Toilet gel Scent beads |



(according to Regulation (EU) No. 1907/2006)
Revision date: 31/05/2023 | Date of issue: 22/11/2016 | Version: 7

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product: HEDIONE FG

Chemical identification: Methyl 3-oxo-2-pentylcyclopentaneacetate

CAS: 24851-98-7
EC Number: 246-495-9
Registration number (REACH): 01-2119493355-31

Index No.:

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Relevant identified uses of the substance or mixture: Industrial uses. Formulation [mixing] of preparations..

Uses advised against: Other uses than those recommended.

Registration type: Full

Exposure scenarios available by Einecs, if applicable, in reach.lluche.com

1.3 Details of the supplier of the safety data sheet

Madar Corporation Limited 19 -20 Sandleheath Industrial Estate Fordingbridge SP6 1PA

1.4 Emergency telephone number

Tel. +44 (0)1425 655 555

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008

This substance is not classified as dangerous according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567.

2.2 Label elements

EC Number: 246-495-9

Methyl 3-oxo-2-pentylcyclopentaneacetate

Signal word: -

This substance is not classified as dangerous according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567.

2.3 Other hazards

Results of PBT and vPvB assessment

The product does not contain substances identified as PBT and/or vPvB in a concentration equal to or greater than 0,1 % (w/w).

Environmental endocrine disrupting properties.

The product does not contain substances identified as having environmental endocrine disrupting properties in a concentration equal to or greater than 0,1% (w/w).

Human health endocrine disrupting properties.

The product does not contain substances identified as having human health endocrine disrupting properties in a concentration equal to or greater than 0,1% (w/w).

SECTION 3: Composition/information on ingredients

3.1 Substances

| Concentration range of the constituent (% weight/weight) | EC number / Registration number | CAS | Chemical name | Hazard Class and Category Code; Hazard statement codes |
|--|------------------------------------|------------|--|---|
| ≥50% and ≤100 | 246-495-9 01-2119493355-31 | 24851-98-7 | Methyl 3-oxo-2-pentylcyclopentaneacetate | - |



(according to Regulation (EU) No. 1907/2006)
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The chemical identity of any impurity, stabilising additive, or individual constituent other than the main constituent:

| Concentration (%) | CAS | EC Number | Chemical name | Hazard Class and Category Code; Hazard statement codes |
|-------------------|-----------|-----------|------------------|--|
| <0.50 | 1211-29-6 | 214-918-6 | Methyl jasmonate | _ [1] |

[1] Constituent.

SECTION 4: First aid measures

4.1 Description of first aid measures

Consumption: If swallowed, rinse mouth with water.

Seek medical advice immediately and show this container or label.

Keep the person at rest. Do NOT induce vomiting.

Eye contact: Contact lenses should be removed. Hold eyelids open and flush with copious amounts of clean, fresh water and

seek medical advice.

Inhalation: Remove person to fresh air and keep at rest.

Skin contact: Remove contaminated clothing. Wash skin with mild soap and water, rinse abundantly. If symptoms persist, obtain

medical attention.

4.2 Most important symptoms and effects, both acute and delayed:

Read label before use. No additional information available.

4.3 Indication of any immediate medical attention and special treatment needed

Not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Carbon dioxide, dry chemical powder or appropriate foam.

For safety reasons do not use full water jet.

5.2 Special hazards arising from the substance or mixture

Not applicable.

5.3 Advice for firefighters

In case of fire in the surrounding area, follow the recommendations below:

- 1-Closed containers may build up pressure at elevated temperatures.
- 2-Avoid inhalation of fumes or vapours. Use appropriate respiratory protection.
- 3-Prevent run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate gloves to prevent skin exposure.

Avoid breathing vapours. Use a suitable respiratory apparatus if necessary. Avoid contact with eyes and skin.

Maintain adequate ventilation in the working area after spilling.

6.2 Environmental precautions

Avoid contaminating the environment via the sewers or water sources.

6.3 Methods and material for containment and cleaning up

Cover with an inert, inorganic, non-combustible absorbent material (e.g. dry-lime, sand, soda ash).

Ventilate area and wash spill site after material pickup is complete.

Dispose of in accordance with current laws and regulations.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep away from food, drink and animal feedingstuffs. Do not smoke.

Avoid contact with skin and eyes.

Handle in accordance with good industrial hygiene and safety practice. 19-20 Sandeneath Industrial Estate, Fordingbridge, Hampshire, SP6 1PA, UK



(according to Regulation (EU) No. 1907/2006)

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7.2 Conditions for safe storage, including any incompatibilities

Keep the product in its original container well sealed, in a dry and ventilated area, away from potential sources of ignition and protected from light. Store in accordance with local/national regulations and follow the warnings on the label.

Keep away from incompatible substances (see section 10).

7.3 Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Declaration of substances is not required.

8.2 Exposure controls

Personal protection equipment: Appropriate personal protective equipment shall be worn in accordance with Regulation (EU) 2016/425.

Engineering Controls-Ventilation: The areas where the product is handled and stored should be adequately ventilated.

Respiratory Protection: Use personal breathing apparatus whenever deemed necessary.

Skin Protection: Avoid contact with skin. Wear suitable gloves (EN 374).

Eye/Face protection: Chemical safety goggles are recommended. Wash contaminated goggles before reuse.

Predicted No Effect Concentration (PNEC): Intermittent releases: 186 µg/L

Freshwater: 37.2 μg/L Marine water: 3.72 μg/L

Sewage treatment plant (STP): 10 mg/L Sediment (freshwater): 1897 µg/kg sediment dw Sediment (marine water): 189.7 µg/kg sediment dw

Soil: 357.6 µg/kg soil dw

Derived no-effect level (DNEL): Worker. Inhalation. Systemic effects. Long term: 29.3 mg/m³

Worker. Inhalation. Systemic effects. Acute: no hazard identified Worker. Inhalation. Local effects. Long term: no hazard identified Worker. Inhalation. Local effects. Acute: no hazard identified Worker. Dermal. Systemic effects. Long term: 9.04 mg/kg bw/day Worker. Dermal. Systemic effects. Acute: no hazard identified Worker. Dermal. Local effects. Long term: no hazard identified Worker. Dermal. Local effects. Acute: no hazard identified Worker. Dermal. Local effects. Acute: no hazard identified Worker. Eyes. Local effects. Acute: no hazard identified

General population. Inhalation. Systemic effects. Long term: 8.69 mg/m³ General population. Inhalation. Systemic effects. Acute: no hazard identified General population. Inhalation. Local effects. Long term: no hazard identified General population. Inhalation. Local effects. Acute: no hazard identified General population. Dermal. Systemic effects. Long term: 5.43 mg/kg bw/day General population. Dermal. Systemic effects. Acute: no hazard identified General population. Dermal. Local effects. Long term: no hazard identified General population. Dermal. Local effects. Acute: no hazard identified General population. Oral. Systemic effects. Long term: 2.5 mg/kg bw/day General population. Oral. Systemic effects. Acute: no hazard identified General population. Eyes. Local effects. Acute: no hazard identified

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: LIQUID

Colour: COLORLESS - PALE YELLOW

Odour: FLORAL, JASMIN
Odour threshold: Not determined

pH value:

Evaporation rate:

Melting point:

Not determined

Not determined

Not determined

Not determined

Solling point:

> 300 °C

Flash point:

156 °C

Auto-ignition temperature:

Not determined

Decomposition temperature: 19-20 Sandle Net reference Estate, Fording bridge, Hampshire, SP6 1PA, UK



(according to Regulation (EU) No. 1907/2006)
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Vapour pressure: Not determined Vapour density: Not determined

Density: 0.996 - 1.008 g/cm³ (20 °C)

Water solubility: Not determined Partition coefficient: n-octanol/water: Not determined Not determined Viscosity: Kinematic viscosity: Not determined Oxidising properties: Not available. Explosive properties: Not available. Lower explosive limit: Not determined Upper explosive limit: Not determined

9.2 Other information

Additional information: Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity

Not available.

10.2 Chemical stability

Stable under normal operating conditions.

10.3 Possibility of hazardous reactions

Hazardous Polymerization: It does not undergo any dangerous reactions under normal conditions.

10.4 Conditions to avoid

Handle in accordance with good industrial hygiene and safety practice.

10.5 Incompatible materials

Oxidizing mineral acids, strong reducing agents, strong oxidizing agents.

10.6 Hazardous decomposition products

Carbon monoxide and other unidentified organic compounds may be formed upon combustion.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity (LD50):

Acute dermal toxicity (LD50):

Acute Inhalation toxicity (LC50 Gas):

Acute Inhalation toxicity (LC50 Dusts and Mists):

Acute Inhalation toxicity (LC50 Vapours):

Not classified for acute toxicity based on available data.

Not classified for acute toxicity based on available data.

Not classified for acute toxicity based on available data.

Not classified for acute toxicity based on available data.

Skin Irritation: Non irritating

Serious eye damage/irritation: Not considered an ocular irritant

See also sections 2 and 3.

11.2 Information on other hazards:

Endocrine disrupting properties.:

The product does not contain substances identified as having human health endocrine disrupting properties in a concentration equal to or greater than 0,1% (w/w).

SECTION 12: Ecological information

12.1 Toxicity

Acute aquatic toxicity: Not determined

Chronic aquatic toxicity: Not determined

See also sections 2 and 3.

12.2 Biodegradation:

Readily biodegradable (89%, 28 days)

12.3 Bioaccumulative potential:19-20 Sandleheath Industrial Estate, Fordingbridge, Hampshire, SP6 1PA, UK
Tel: 01425 655555 Email: technical@madarcorporation.co.uk



(according to Regulation (EU) No. 1907/2006)
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Not determined

12.4 Mobility in soil:

Not available.

12.5 Results of PBT and vPvB assessment:

The product does not contain substances identified as PBT and/or vPvB in a concentration equal to or greater than 0,1 % (w/w).

12.6 Endocrine disrupting properties.:

The product does not contain substances identified as having environmental endocrine disrupting properties in a concentration equal to or greater than 0,1% (w/w).

12.7 Other adverse effects:

Not available.

Do not allow the material to enter streams, sewers or other waterways.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Container disposal: Do not reuse empty containers.

Disposal conditions: Dispose of in accordance with all state and local environmental regulations. This material and its container

must be disposed of in a safe way.

SECTION 14: Transport information

International Carriage of Dangerous Goods by Road (ADR)

14.1 UN No.: Not applicable14.2 Proper Shipping Name: Not subject to ADR.

14.3 Class: 14.4 Packing Group: -

14.6 Special precautions for user:

Tunnel restriction code: Label: -

Sea Transport (IMDG)

14.1 UN No.: Not applicable14.2 Proper Shipping Name: Not restricted.

14.3 Class: 14.4 Packing Group: 14.5 Marine Pollutant: No

14.6 Special precautions for user:

IMDG-Code segregation group: -

EmS:

Label: -

Air Transport (ICAO/IATA)

14.1 UN No.: Not applicable14.2 Proper Shipping Name: Not restricted.

14.3 Class: 14.4 Packing Group: -

14.6 Special precautions for user:

Passenger aircraft: ACCEPTED
Cargo aircraft: ACCEPTED

SECTION 15: Regulatory information



(according to Regulation (EU) No. 1907/2006)

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Substances of very high concern:

The product does not contain substances included in the Substances of Very High Concern list (> 0,1 % w/w).

15.2 Chemical safety assessment

Not available.

SECTION 16: Other information

This material should only be used for industrial purposes.

Key literature references and sources for data:

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
- 3. EH40/2005. Workplace exposure limits with amendments.

Replaces version:6 (17/03/2021)

Reason for Change: Adjustment to Regulation (EU) 2020/878.

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and our company assumes no liability resulting from the use of this SDS. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment and must determine suitability of this information for his application.



TECHNICAL DATA SHEET

DATE: 18.09.2023 **PRODUCT:** HEDIONE FG

CAS-EINECS 24851-98-7 **CAS Nº** 24851-98-7

CHEMICAL IDENTIFICATION Methyl 3-oxo-2-pentylcyclopentaneacetate

FEMA 3408
INDEX NUM. / INVENTORY -

NUM.

EINECS / ELINCS 246-495-9 **FLASH POINT** 156°C

BOILING POINT >300°C (1013 HPA) **FORMULA** C13 H22 O3

M.W. 226,3

ORGANOLEPTIC PROPERTIES

APPEARANCE LIQUID

COLORLESS - PALE YELLOW

ODOUR FLORAL, JASMIN

| CHEMICAL AND PHYSICAL PROPERTIES | MIN | MAX | |
|----------------------------------|--------|--------|--|
| DENSITY 20°C (g/cm3) | 0,996 | 1,008 | |
| REFRACTIVE INDEX 20°C | 1,4540 | 1,4650 | |
| PURITY AS ISOMERS SUM (%) | 96,00 | | |

STORAGE CONDITIONS: It is recommended to store away from direct light in full sealed containers in a dry and well ventilated area.



VEAGAN DECLARATION

PRODUCT: **HEDIONE**

We hereby confirm the above mentioned product, is suitable for vegan consumption.

(The information provided in this document is based within the present knowledge of the supplier and/or Lluch Essence. This document has been issued by our computer system and has, therefore, not been signed.)

(It is the responsibility of the user to assure that the food legislative application of the flavor in the specific food is covered by the applied laws and regulations in the versions valid at the time of delivery.)

28/01/2019