Substance Information Document

Methyl Dihydrojasmonate

1. Substance identity

Name	Methyl Dihydrojasmonate
Synonyms	3-Oxo-2-pentylcyclopentaneacetic acid methyl ester; Cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester; Methyl (2-pentyl-3-oxocyclopentyl)acetate; Methyl (3-oxo-2-pentylcyclopentyl)acetate; Methyl 3-oxo-2-pentyl-cyclopentaneacetate; Methyl 3-oxo-2-pentylcyclopentaneacetate
IUPAC Name	methyl 2-(3-oxo-2-pentylcyclopentyl)acetate
CAS	24851-98-7

2. Toxicological information

Methyl Dihydrojasmonate was evaluated in an Ames test using strains TA98, TA100, TA102, TA1535, TA1537 and was considered not mutagenic. Additionally, data from several mouse lymphoma assays (MLAs) are available. Most studies demonstrated negative effects both with and without metabolic activation at the highest dose tested.
The clastogenic activity of methyl dihydrojasmonate was evaluated in an *in vivo* micronucleus test. It was considered that methyl dihydrojasmonate was non-clastogenic.
Based on the data available, expert groups, including RIFM and ECHA have concluded that methyl dihydrojasmonate does not present a concern for genotoxicity.
Carcinogenicity data on methyl dihydrojasmonate are limited.
According to ECHA's registration dossier, methyl dihydrojasmonate has to be considered as nonirritant both for the for the skin and eyes as no significant inflammation was observed both in eye and skin based on studies in rabbits.
Methyl dihydrojasmonate did not reveal sensitising properties in guinea pigs (Buehler and maximization test). Based on this study, ECHA and RIFM experts considered that methyl dihydrojasmonate does not present a concern for skin sensitization.

Studies in laboratory animals suggest that methyl dihydrojasmonate is of moderate-low acute oral toxicity and repeated-dose toxicity (LD50 rats > 5000mg/kg bw, NOAEL 100 mg/kg bw/day 90 days in rats). Similar consideration for methyl dihydrojasmonate can be drawn for dermal and inhalation acute toxicity studies in laboratory animals (Dermal LD50 rabbits > 5000mg/kg bw; Inhalation LC50 > 4.96 mg/l in rats).

Limited information is available on the repeated-dose toxicity of methyl dihydrojasmonate after inhalation or dermal exposure.

Developmental and reproductive toxicity was assessed by RIFM experts, who concluded on a NOAEL of 120 mg/kg bw/day for developmental toxicity and 300 mg/kg bw/day as NOAEL for reproductive toxicity.

JECFA	Safety evaluation of certain food additives and contaminants, WHO FOOD ADDITIVES SERIES: 64 (inchem.org)
FEMA	7. GRAS Substances (3391-3423).pdf (femaflavor.org)
EFSA	Flavouring Group Evaluation 9, Revision 1: (FGE.09 Rev1) - Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols from chemical groups 8 and 30, and an ester of a phenol carboxylic acid from chemical group 25 - Scientific Opinion of the Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food - - 2009 - EFSA Journal - Wiley Online Library Flavouring Group Evaluation 9, Revision 2 (FGE.09Rev2): Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols from chemical group 8 and 30, and an ester of a phenol derivative from chemical group 25 - - 2010 - EFSA Journal - Wiley Online Library Scientific Opinion on Flavouring Group Evaluation 9, Revision 3 (FGE.09Rev3): Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols from chemical group 8 and 30, and an ester of a phenol derivative from chemical group 25 - - 2011 - EFSA Journal - Wiley Online Library Scientific Opinion on Flavouring Group Evaluation 9, Revision 4 (FGE.09Rev4): Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols from chemical group 8 and 30, and an ester of a phenol derivative from chemical group 25 - - 2012 - EFSA Journal - Wiley Online Library Scientific Opinion on Flavouring Group Evaluation 9, Revision 5 (FGE.09Rev5): Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols from chemical group 8 and 30, and an ester of a phenol derivative from chemical group 25 - - 2014 - EFSA Journal - Wiley Online Library Scientific Opinion on Flavouring Group Evaluation 9, Revision 6 (FGE.09Rev6): Secondary alicyclic saturated and unsaturated alcohols, ketones and esters containing secondary alicyclic alcohols

	from chemical group 8 and 30, and an ester of a phenol derivative from chemical group 25 - - 2015 - EFSA Journal - Wiley Online Library
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	Methyl dihydrojasmonate | C13H22O3 - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

No substance-specific data were identified.

SCENIHR	-
EMA	-
PUBMED	Update to RIFM fragrance ingredient safety assessment, methyl dihydrojasmonate, CAS Registry Number 24851-98-7 - PubMed (nih.gov) RIFM fragrance ingredient safety assessment, methyl dihydrojasmonate, CAS registry number 24851-98-7 - PubMed (nih.gov)