Substance Information Document

Alpha-irone

1. Substance identity

Name	Alpha-irone
Synonyms	- Methyl alpha-ionone - 6-Methyl-alpha-ionone - (*E*)-4-(2,5,6,6-tetramethylcyclohex-2-en-1-yl)but-3-en-2-one
IUPAC Name	(E)-4-(2,5,6,6-tetramethylcyclohex-2-en-1-yl)but-3-en-2-one
CAS	79-69-6

2. Toxicological information

EFSAs' Panel on Food Contact Materials, Enzymes, Flavourings and Processing Aids concluded that the concern for a genotoxic potential could be ruled out. Alpha-irone is considered a skin sensitizer with a defined NESIL (No Expected Sensitization Induction Level) of 1700 µg/cm^2. Based on ultraviolet/visible (UV/Vis) spectra alpha-irone is not expected to be phototoxic/photoallergenic.

An acute toxicity study revealed an oral-rat LD_{50} of 5000 mg/kg. There is no recent repeated dose toxicity data on alpha-irone available. In Oser et al. (1965) rats of each sex received alpha-irone in their diets for 90 days at a daily concentration designed to provide 5 mg/kg bw for males and 6 mg/kg bw for females. The NOEL was 5 mg/kg bw per day from that study. Read-across compounds beta-ionone (CAS # 14901-07-6), alpha-ionone (CAS # 127-41-3), and (E)-beta -ionone (CAS # 79-77-6) have sufficient repeated dose toxicity data and the most conservative NOAEL of 10 mg/ kg/day was considered for the repeated dose toxicity endpoint in the RIFM (Research Institute for Fragrance Materials) assessment. There are no developmental toxicity data on alpha-irone. Read-across material (E)-beta-ionone has sufficient developmental toxicity data. The NOAEL for maternal and developmental toxicity was considered to be 50 mg/kg/day, based on reduced fetal body weight and increased incidences of 2 ossification parameters at 160 mg/kg/day.

There are no inhalation data available on alpha-irone; however, in an acute, 2-week inhalation study for read-across analog beta-ionone (CAS # 14901-07-6), a NOAEC of 7.9 mg/m^3 is reported.

Joint FAO/WHO Expert Committee on Food Additives concluded no safety concern at current levels of intake when used as a flavouring agent.

JECFA	WHO_TRS_891.pdf;jsessionid=91361095DFED3639FD20973B5B9BEC9D
FEMA	3. GRAS Substances(2001-3124)_0.pdf (femaflavor.org)
EFSA	Scientific Opinion on Flavouring Group Evaluation 210 Revision 2 (FGE.210Rev2): Consideration of genotoxic potential for α,β-unsaturated alicyclic ketones and precursors from chemical subgroup 2.4 of FGE.19 - - 2015 - EFSA Journal - Wiley Online Library
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	alpha-Irone | C14H22O - PubChem (nih.gov)
CIR	
OSHA	

3. Addictiveness and attractiveness

No substance specific information were found.

SCENIHR	
EMA	
PUBMED	