

Substance Information Document

Citronellal

1. Substance identity

Name	Citronellal
Synonyms	3,7-Dimethyl-6-octenal; Rhodinal; Citronellal (unspecified/racemic mixture)
IUPAC Name	3,7-dimethyloct-6-enal
CAS	106-23-0

2. Toxicological information

Expert groups, including ECHA, RIFM, EFSA and JECFA have concluded that Citronellal is not genotoxic. No carcinogenicity studies were available.

The skin and eye irritation potential of Citronellal was observed in various studies in rabbits. The results obtained from these studies indicate that the chemical is likely to cause skin and eye irritation.

In a Guinea Pig Maximization Test (GPMT), 50% of guinea pigs exhibited reactions indicative of sensitization with 3% citronellal. In a human maximization test conducted on 25 subjects, no reactions indicative of sensitization was observed with 4% citronellal (2760 µg/cm²). In a human repeat insult patch test (HRIPT), citronellal did not induce sensitization reactions at 6% or 7086 µg/cm². Based on the existing human data, RIFM expert panel considered citronellal to be a weak skin sensitizer with a defined NESIL of 7000 µg/cm².

Studies in laboratory animals suggest that Citronellal is of moderate-low acute oral, dermal and inhalation toxicity (Oral LD50 rats > 5000 mg/kg bw, Dermal LD50 rabbits > 2000 mg/kg, inhalation LC50 rats > 1390 mg/m³ bw). Limited information is available on the repeated-dose toxicity of Citronellal after oral, dermal or inhalation exposure.

Developmental and reproductive toxicity of citronellal was assessed by FEMA experts based on read-across analog citral, who concluded on respectively 60 mg/kg bw/day for developmental toxicity and 1000 mg/kg bw/day for reproductive toxicity as NOAEL.

Animal studies did not reveal cardiotoxicity.

JECFA	ALIPHATIC BRANCHED-CHAIN SATURATED AND UNSATURATED ALCOHOLS, ALDEHYDES, ACIDS, AND RELATED ESTERS (JECFA 52, 2004) (inchem.org)
FEMA	CITRONELLAL FEMA (femaflavor.org)

EFSA	<p>Scientific Opinion on Flavouring Group Evaluation 72, Revision 1 (FGE.72Rev1): Consideration of aliphatic, branched-chain saturated and unsaturated alcohols, aldehydes, acids, and related esters evaluated by the JECFA (61st meeting) structurally related to branched- and straight-chain unsaturated carboxylic acids, esters of these and straight-chain aliphatic saturated alcohols evaluated by EFSA in FGE.05Rev2 (wiley.com)</p> <p>Scientific Opinion on Flavouring Group Evaluation 72, Revision 2 (FGE.72Rev2): consideration of aliphatic, branched-chain saturated and unsaturated alcohols, aldehydes, acids and related esters evaluated by JECFA (61st, 68th and 69th meetings) and structurally related to flavouring substances in FGE.05Rev3 (wiley.com)</p>
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	Citronellal C10H18O - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

No substance-specific data were identified.

SCENIHR	-
EMA	-
PUBMED	RIFM fragrance ingredient safety assessment, citronellal, CAS registry number 106-23-0 - PubMed (nih.gov)