Substance Information Document

sclareolide

1. Substance identity

Name	sclareolide
Synonyms	(3aR)-(+)-Sclareolide Norambreinolide 12-Norambreinolide
IUPAC Name	(3aR,5aS,9aS,9bR)-3a,6,6,9a-tetramethyl-1,4,5,5a,7,8,9,9b-octahydrobenzo[e][1]benzofuran-2-one
CAS	564-20-5

2. Toxicological information

Sclareolide is a sesquiterpene lactone natural product derived from various plant sources including Salvia sclarea, Salvia yosgadensis, and cigar tobacco.

Oral acute toxicity studies showed Oral LD50 value is greater than 5000 mg/kg b.w. in rats and squirrel monkeys. Nonetheless, the study was performed in 1965, before GLP had been implemented. Inhalation acute toxicity studies were not performed on the grounds that exposure of humans via inhalation is not likely taking into account the vapour pressure of the substance and/or the possibility of exposure to aerosols, particles or droplets of an inhalable size. Likewise, dermal acute toxicity studies were not performed conducted because the substance does not meet the criteria for classification as acute toxicity or STOT SE by the oral route and no systemic effects have been observed in in vivo studies with dermal exposure (e.g., skin irritation, skin sensitisation).

In a study using Sprague-Dawley rats administered with sclareolide at a dose of 0 or 10 mg/kg bw per day for 14 days there were no deaths or outward clinical signs of toxicity reported in any of the animals. The authors did not consider these observations to be of any toxicological significance because they were not accompanied by any evidence of histopathology. No treatment-related effects were reported in the treated rats on gross pathological and histological examinations of the liver and kidneys. Following a 28-day oral exposure in Wistar rats, no adverse effects were observed with a no observed adverse effect levels (NOAELs) of 1000 mg/kg bw/day.

An OECD 471 complaint bacterial reverse mutation assay conducted on sclareolide under GLP conditions, sclareolide is non-mutagenic to any of the five strains of *Salmonella typhimurium viz*., TA1537, TA1535, TA98, TA100, and TA102 in the presence and absence of S9 metabolic activation system.

With regards to toxicity to reproduction, oral administration of Sclareolide at 1000 mg/kg b. wt./day (limit dose) did not produce any treatment-related effect on systemic, performance of parent male and female rats and growth of pups. Hence, the NOAEL for parental toxicity, reproductive, fertility toxicity and for offspring toxicity was 1000 mg/kg b. wt./day.

JECFA	ALICYCLIC, ALICYCLIC-FUSED AND AROMATIC-FUSED RING LACTONES (JECFA 52, 2004) (inchem.org)
FEMA	SCLAREOLIDE | FEMA (femaflavor.org)
EFSA	Flavouring Group Evaluation 80 (FGE.80) - Consideration of alicyclic, alicyclic-fused and aromatic-fused ring lactones evaluated by JECFA (61st meeting) structurally related to a aromatic lactone evaluated by EFSA in FGE.27 (2008) - Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food (AFC) - - 2008 - EFSA Journal - Wiley Online Library
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	Sclareolide | C16H26O2 - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

Substance-related data are not available.

SCENIHR	-
EMA	-
PUBMED	RIFM fragrance ingredient safety assessment, sclareolide, CAS Registry Number 564-20-5 - ScienceDirect