Substance Information Document

Ethyl nonanoate

1. Substance identity

Name	Ethyl nonanoate
Synonyms	Ethyl nonylate Ethyl pelargonate Nonanoic acid, ethyl ester Wine ether
IUPAC Name	ethyl nonanoate
CAS	123-29-5

2. Toxicological information

Only limited ADME and toxicity data were identified on ethyl nonanoate.
Moderate skin irritation was observed in rabbits treated with 100% ethyl nonanoate for 24 hours, whereas there was no skin irritation when human subjects were treated with up to 20% for 24 hours.
No evidence of skin sensitisation was seen in 25 subjects exposed to 12% ethyl nonanoate in a human maximization test. Based on limited substance-specific, and also read-across data, the RIFM (Research Institute for Fragrance Materials) Expert Panel considered ethyl nonanoate to be a skin sensitiser with a NESIL of 4700 µg/cm2.
No acute or repeated-dose inhalation toxicity data were identified. Ethyl nonanoate was of very low acute systemic toxicity by the oral route in rats and guinea-pigs (LD50 values >20,000 mg/kg bw), and by the dermal route in rabbits (LD50 >5000 mg/kg bw).
In a limited subchronic study involving only a single tested dose level, no adverse effects were observed in rats fed diets containing 1% ethyl nonanoate for 16 weeks (providing about 500 mg/kg bw/day).
No concerns for genotoxicity were noted by the RIFM Expert Panel based on existing substance-specific data and read-across studies. No substance-specific carcinogenicity or reproductive or developmental toxicity data were identified.
In a combined repeated-dose toxicity and reproduction/developmental toxicity screening test for read-across material ethyl hexanoate, rats were dosed at up to 1000 mg/kg bw/day by oral gavage. NOAELs for both systemic toxicity and reproductive/developmental toxicity were considered to be 1000 mg/kg bw/day and this value was used by RIFM to derive an oral reference dose of 3.33 mg/kg bw/day for ethyl nonanoate.

JECFA	WHO_TRS_868.pdf;jsessionid=B4D00DA9FBCF91D21499A26A9DBCA3E1
FEMA	3. GRAS Substances(2001-3124)_0.pdf (femaflavor.org)
EFSA	-
ECHA – REACH dossier	-
PUBCHEM	Ethyl nonanoate | C11H22O2 - PubChem (nih.gov)

CIR	Final Report of the Cosmetic Ingredient Review Expert Panel on the Safety Assessment of Pelargonic Acid (Nonanoic Acid) and Nonanoate Esters (personalcarecouncil.org)
OSHA	-

3. Addictiveness and attractiveness

No substance-specific addictiveness data were identified.
In an investigation into the most common flavouring ingredients added to e-liquids on the Dutch market, ethyl nonanoate (reportedly providing a fatty-waxy, oily, wine-cognac, grape, tropical, nut-like flavours) was identified in 1.50% of e-liquid samples, at a concentration of 1.0 mg/10mL in the "alcohol" flavour category. The investigators noted that such flavourings increase e-cigarette attractiveness and use and thereby exposure to potentially toxic ingredients.

SCENIHR	-
EMA	-
PUBMED	Comprehensive overview of common e-liquid ingredients and how they can be used to predict an e-liquid's flavour category - PMC (nih.gov)