

Substance Information Document

Ethyl propionate

1. Substance identity

Name	Ethyl propionate
Synonyms	Ethyl propanoate Propanoic acid, ethyl ester Propionic acid, ethyl ester
IUPAC Name	ethyl propanoate
CAS	105-37-3

2. Toxicological information

Ethyl propionate has a low acute toxicity following inhalation, oral or dermal treatment in laboratory animals and humans. When Sprague-Dawley rats were exposed to a “near saturated” atmosphere of ethyl propionate for up to 6 hours, 50% of males and females died within 35 minutes and 32 minutes, respectively, after the start of exposure. Signs of toxicity included laboured breathing, lethargy, muscle incoordination, lacrimation, nasal/oral discharge and loss of reflexes; surviving animals recovered within 24 hours of exposure. Oral LD50 values of 10.8 and 9.8 mL/kg bw [9600 and 8700 mg/kg bw] were reported for male and female rats, respectively. An oral LD50 value and ND50 value of 5720 and 3064 mg/kg bw, respectively, were reported for rabbits. The lowest lethal oral dose was reported to be of 3200-3950 mg/kg bw for rabbits. These data indicate that ethyl propionate has a very low order of acute oral toxicity in rats and rabbits. Regarding repeated-dose toxicity, no substance-specific data were identified.

No evidence of genotoxic activity was seen in bacteria or cultured mammalian cells. No *in vivo* genotoxicity, carcinogenicity or reproductive and developmental toxicity data have been identified.

Ethyl propionate has a low acute toxicity following inhalation, oral or dermal treatment in humans. Laboured breathing and nasal/oral discharge were observed when Sprague-Dawley rats were exposed to a “near saturated” atmosphere of ethyl propionate for up to 6 hours. In an acute dermal toxicity test, undiluted ethyl propionate was severely irritating when applied to the clipped, intact skin of New Zealand white rabbits under 24-hour covered contact. Moderate irritation was reported when neat ethyl propionate was applied to the intact or abraded skin of rabbits under 24-hour covered contact. However, undiluted ethyl propionate was not irritating when applied to the clipped, intact skin of New Zealand white rabbits for four hours, under covered contact indicating that the duration of covered contact is a key determinant in the extent and severity of the observed local skin effects. In humans, ethyl propionate at 2% in petrolatum was not irritating in a 48-hour closed patch test. Iritis and moderate conjunctival irritation were observed in New Zealand white rabbits but were fully reversible within two days when undiluted ethyl propionate (0.1 mL) was instilled into one eye. The maximum

mean eye irritation (Draize) score, reported after four hours, was 16.3 (out of a maximum of 110). No respiratory tract or skin sensitisation reactions have been reported.

JECFA	WHO Evaluation of certain food additives and contaminants
FEMA	3. GRAS Substances(2001-3124)_0.pdf (femaflavor.org)
EFSA	Scientific Opinion on Flavouring Group Evaluation 213, Revision 2 (FGE.213Rev2): Consideration of genotoxic potential for α,β-unsaturated alicyclic ketones and precursors from chemical subgroup 2.7 of FGE.19 - - 2015 - EFSA Journal - Wiley Online Library
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	Ethyl propionate C5H10O2 - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

In an investigation into the most common flavouring ingredients added to e-liquids on the Dutch market, ethyl propionate (reportedly providing a strong, ethereal, fruity, rum-like flavour) was identified in 10.9% of e-liquid samples. The investigators noted that such flavourings increase e-cigarette attractiveness and use and thereby exposure to potentially toxic ingredients.

SCENIHR	-
EMA	-
PUBMED	Myers RC, Tyler TR. Acute Toxicologic Evaluation of N-Butyl Propionate. Journal of the American College of Toxicology. 1982;1(3s):192-193. doi:10.1177/109158189200100339s Comprehensive overview of common e-liquid ingredients and how they can be used to predict an e-liquid's flavour category - PubMed (nih.gov)