Substance Information Document

Ethyl isovalerate

1. Substance identity

Name	Ethyl isovalerate
Synonyms	3-Methylbutyric acid ethyl ester Butanoic acid, 3-methyl-, ethyl ester Ethyl 3-methylbutanoate Ethyl beta-methylbutyrate Ethyl isopentanoate Ethyl isovalerianate
IUPAC Name	ethyl 3-methylbutanoate
CAS	108-64-5

2. Toxicological information

Ethyl isovalerate was not irritating to the skin of 25 subjects when applied at 2% in petrolatum, under occlusion for 48 hours. No substance-specific data were identified on respiratory tract and eye irritation. No skin sensitisation was produced in a maximization test in which ethyl isovalerate at 2% in petrolatum. No substance-specific data were identified on respiratory tract sensitisation.

Very low order of acute oral and dermal toxicity (LD50 rat, oral >5000 mg/kg bw; LD50 rabbit, oral 7031 mg/kg bw and LD_{50} rabbit, dermal >5000 mg/kg bw) No substance-specific data were identified on inhalation toxicity.

No effect on body weight, food intake or blood or urine chemistry in groups of 12 rats/sex given diets providing ethyl isovalerate at 0, 12.1 (males) or 13.6 (females) mg/kg bw/day for 90 days. The rat NOAEL13 was 12.1 mg ethyl isovalerate/kg bw.

Ethyl isovalerate is considered, overall, to be “not genotoxic” (JECFA, 1998), based on the results of several *in vitro* assays. No substance-specific data were identified for carcinogenicity and reproductive and developmental toxicity.

JECFA	909. Esters/aliphatic acyclic prim. alcohols/branched-chain/aliphatic acyclic acids (WHO Food Additives Series 40) (inchem.org)
FEMA	3. GRAS Substances(2001-3124)_0.pdf (femaflavor.org)
EFSA	Scientific Opinion on the safety and efficacy of straight-chain primary aliphatic alcohols/aldehydes/acids, acetals and esters with esters containing saturated alcohols and acetals containing saturated aldehydes (chemical group 1) when used as flavourings for all animal species - - 2013 - EFSA Journal - Wiley Online Library

	Scientific Opinion of Flavouring Group Evaluation 500 (FGE.500): rum ether - - 2017 - EFSA Journal - Wiley Online Library
ECHA – REACH dossier	Registration Dossier - ECHA (europa.eu)
PUBCHEM	Ethyl isovalerate | C7H14O2 - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

An oral ND_{50} value of approximately 3900 mg/kg bw was reported for rabbits (10-35 males and/or females) treated by oral gavage with ethyl isovalerate.

In an investigation into the most common flavouring ingredients added to e-liquids on the Dutch market, ethyl isovalerate was identified in 9.5% of e-liquid samples and within several flavour categories[28]. 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 - PubMed (nih.gov) Aliphatic alcohols and alkyl esters: narcotic and lethal potencies to tadpoles and to rabbits - PubMed (nih.gov)