

Substance Information Document

4-ethylguaiacol

1. Substance identity

Name	4-ethylguaiacol
Synonyms	4-Ethyl-2-methoxyphenol 2785-89-9 4-Ethylguaiacol 2-Methoxy-4-ethylphenol p-Ethylguaiacol
IUPAC Name	4-ethyl-2-methoxyphenol
CAS	2785-89-9

2. Toxicological information

4-ethylguaiacol has been pre-registered for 2010; no ECHA dossier available as of November 30, 2022. Data from read-across analog guaiacol (CAS # 90-05-1) show that 4-ethylguaiacol is not expected to be genotoxic. Data from analog eugenol (CAS # 97-53-0) provide a calculated Margin of Exposure (MOE) > 100 for the repeated dose toxicity endpoint. The NOAEL for repeated dose toxicity of eugenol is 300 mg/kg/day from a dietary 13-week subchronic toxicity study conducted in rats, based on reduced body weights. The US NTP concluded that hepatocellular tumors observed following eugenol administration were considered to be associated with the dietary administration of eugenol, but because of the lack of a dose-response effect in male mice and the marginal combined increases in female mice, there was equivocal evidence of carcinogenicity. Eugenol was not carcinogenic to rats. Hepatotoxicity might have played a role in the development of hepatic tumors in B6C3F1 mice, which are sensitive to the development of liver tumors by non-genotoxic mechanisms. There are insufficient reproductive toxicity data on 4-ethylguaiacol or any read-across materials. The reproductive and local respiratory toxicity endpoints were evaluated using the Threshold of Toxicological Concern (TTC) for a Cramer Class I material; exposure to 4-ethylguaiacol is below the TTC (0.03 mg/kg/day and 1.4 mg/day, respectively). Data from analog 2-methoxy-4-propylphenol (CAS # 2785-87-7) provided 4-ethylguaiacol a No Expected Sensitization Induction Level (NESIL) of 1700 µg/cm² for the skin sensitization endpoint. The phototoxicity/photoallergenicity endpoints were evaluated based on ultraviolet/visible (UV/Vis) spectra; 4-ethylguaiacol is not expected to be phototoxic/photoallergenic.

JECFA	PHENOL AND PHENOL DERIVATIVES (inchem.org)
FEMA	4-ETHYLGUAIACOL FEMA (femaflavor.org)
EFSA	-
ECHA – REACH dossier	-
PUBCHEM	4-Ethyl-2-methoxyphenol C9H12O2 - PubChem (nih.gov)
CIR	-

OSHA	-
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3. Addictiveness and attractiveness

Substance-related data are not available.

SCENIHR	-
EMA	-
PUBMED	Api AM et al. RIFM fragrance ingredient safety assessment, 4-ethylguaiacol, CAS Registry Number 2785-89-9. Food Chem Toxicol. 2022 Mar;161 Suppl 1:112854. doi: 10.1016/j.fct.2022.112854.