Substance Information Document

Methyl phenylacetate

1. Substance identity

Name	Methyl phenylacetate
Synonyms	Benzeneacetic acid, methyl ester Methyl benzeneacetate Methyl alpha-toluate Phenylacetic acid, methyl ester Acetic acid, phenyl-, methyl ester
IUPAC Name	methyl 2-phenylacetate
CAS	101-41-7

2. Toxicological information

As revealed via a RIFM fragrance ingredient safety assessment, methyl phenylacetate has been evaluated for genotoxicity, repeated dose toxicity, reproductive toxicity, local respiratory toxicity, phototoxicity and skin sensitization (Api et al 2018, Food Chem Toxicol 122 Suppl 1: S453-S460). Methyl phenylacetate was not mutagenic in Salmonella typhimurium strains TA97a, TA98, TA100, TA1535, and TA102 at concentrations up to 5000 µg/plate. Similarly, in a GLP- and OECD TG 487-compliant in vitro micronucleus study in human peripheral blood lymphocytes, concentrations up to 1500 µg/mL were not genotoxic. Repeated dose, reproductive, and local respiratory toxicity endpoints were completed using the TTC approach for a Cramer Class I material (1.8 mg/day) because of insufficient data – exposure to methyl phenylacetate is below the TTC for each endpoint (0.03 mg/kg/day, 0.03 mg/kg/day, and 1.4 mg/day, respectively). Data on methyl phenylacetate (and its read-across analog methyl benzoate; CAS 93-58-3) reveal it does not present a safety concern at the current, declared levels of use for the skin sensitization endpoint. In addition, methyl phenylacetate is not expected to be phototoxic/photoallergenic based on its UV spectra. Furthermore, methyl phenylacetate exhibited low acute toxicity in orally-exposed rats and dermally-exposed rabbits with LD_{50} values of 2550 and 2400 mg/kg, respectively (Food and Cosmetics Toxicology, 12 (941), 1974).

JECFA	No safety concern at then-current intake (threshold: 1.8 mg/day): https://inchem.org/documents/jecfa/jecmono/v50je11.htm
FEMA	Evidence of safety at then-daily per capita intake (23 µg/day): https://www.femaflavor.org/sites/default/files/Adams%20et%20al.%2C%202005%20%28phenethyl%29.pdf
EFSA	No European production figures were available, thus European exposure estimate could not be calculated. Accordingly, its safety of use in Europe could not be assessed using the Procedure: https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2009.1024

ECHA – REACH dossier	https://echa.europa.eu/registration-dossier/-/registered-dossier/16699
PUBCHEM	https://pubchem.ncbi.nlm.nih.gov/compound/Methyl-phenylacetate
CIR	-
OSHA	-

3. Addictiveness and attractiveness

No substance-specific information could be identified.

SCENIHR	-
EMA	-
PUBMED	-