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Short review

RIFM fragrance ingredient safety assessment, Benzyl acetate, CAS Registry Number 140-11-4



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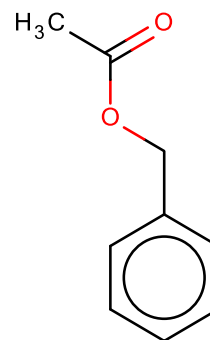
Environmental toxicity

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Version: 050515. This version replaces any previous versions.

Name: Benzyl acetate

CAS Registry Number: 140-11-4



Abbreviation list:

2-Box Model – a RIFM, Inc. proprietary *in silico* tool used to calculate fragrance air exposure concentration
97.5th percentile – The concentration of the fragrance ingredient is obtained from examination of several thousand commercial fine fragrance formulations. The upper 97.5th percentile concentration is calculated from these data and is then used to estimate the dermal systemic exposure in ten types of the most frequently used personal care and cosmetic products. The dermal route is the major route in assessing the safety of fragrance ingredients. Further explanation of how the data were obtained and of how exposures were determined has been previously reported by Cadby et al. (2002) and Ford et al. (2000).

AF – Assessment Factor

BCF – Bioconcentration factor

DEREK – Derek nexus is an *in silico* tool used to identify structural alerts

DST – Dermal Sensitization Threshold

ECHA – European Chemicals Agency

EU – Europe/European Union

GLP – Good Laboratory Practice

IFRA – The International Fragrance Association

LOEL – Lowest Observable Effect Level

MOE – Margin of Exposure

MPPD – Multiple-Path Particle Dosimetry. An *in silico* model for inhaled vapors used to simulate fragrance lung deposition

NA – North America

NESIL – No Expected Sensitization Induction Level

NOAEC – No Observed Adverse Effect Concentration

NOAEL – No Observed Adverse Effect Level

NOEC – No Observed Effect Concentration

OECD – Organisation for Economic Co-operation and Development

OECD TG – Organisation for Economic Co-operation and Development Testing Guidelines

PBT – Persistent, Bioaccumulative, and Toxic

PEC/PNEC – Predicted Environmental Concentration/Predicted No Effect Concentration

QRA – quantitative risk assessment

REACH – Registration, Evaluation, Authorisation, and Restriction of Chemicals

RIFM – Research Institute for Fragrance Materials

RQ – Risk Quotient

TTC – Threshold of Toxicological Concern

UV/Vis Spectra – Ultra Violet/Visible spectra

VCF – Volatile Compounds in Food

VoU – Volume of Use

vPvB – (very) Persistent, (very) Bioaccumulative

WOE – Weight of Evidence

RIFM's Expert Panel* concludes that this material is safe under the limits described in this safety assessment.

This safety assessment is based on RIFM's Criteria Document (Api et al., 2015) and should be referred to for clarifications.

Each endpoint discussed in this safety assessment reviews the relevant data that were available at the time of writing (version number in the top box is indicative of the date of approval based on a two digit month/day/year), both in the RIFM database (consisting of publicly available and proprietary data) and through publicly available information sources (i.e., SciFinder and PubMed). Studies selected for this safety assessment were based on appropriate test criteria such as, acceptable guidelines, sample size, study duration, route of exposure, relevant animal species, most relevant testing endpoints, etc. A key study for each endpoint was selected based on the most conservative end-point value (e.g., PNEC, NOAEL, LOEL, and NESIL).

*RIFM's Expert Panel is an independent body that selects its own members and establishes its own operating procedures. The Expert Panel is comprised of internationally known scientists that provide RIFM guidance relevant to human health and environmental protection.

Summary: The use of this material under current use conditions is supported by the existing information.

This material was evaluated for genotoxicity, repeated dose toxicity, developmental toxicity, reproductive toxicity, local respiratory toxicity, phototoxicity, skin sensitization potential as well as environmental safety. Repeated dose toxicity was determined to have the most conservative systemic exposure derived NO[A]EL of 14.5 mg/kg/day, based on a dietary 2-year chronic toxicity study conducted in rats, that resulted in a MOE of 145 considering 78.7% absorption from skin contact and 100% from inhalation. A MOE of >100 is deemed acceptable.

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