Benzyl carbinol

Botanical Source

Synonyms Phenethyl alcohol;
PHENYL ETHANOL (2-);
PHENYL ETHYL ALCOHOL (2-);
PHENYL ETHYL ALCOHOL (beta-);
PHENETHYLOL;
PHENYL-2-ETHANOL (1-);
BENZYL CARBINOL;
BENZYL METHANOL;P.E.A.(beta-);
HYDROXY ETHYL BENZENE (beta-);
PHENYL ETHYL ALCOHOL;
phenylethyl alcohol

IUPAC Name

CAS Reference 60-12-8

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
68	Listed by the Council of Europe as acceptable for use in food at up to 20 ppm.

US Food and Drug Administration	
Number	Comment
172.515	Approved by the US FDA. FDA 21 CFR 172.515

Joint FAO/WHO Expert Committee on Food Additives (JECFA)		
Number	ADI	Comment
987	1400	No safety concern at current levels of intake when used as a flavouring agent.

FEMA	
FEMA No.	Comment
2858	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food

Found in apple juice, banana, beef,

Estimated Intake from Food and Drink	
Daily Intake mg/kg/day	FEMA Possible Average Daily Intake mg
0.002316	5.95

Benzyl carbinol

Tobacco Product Related Chemical and Biological Studies for Ingredients Added in a Mixture

Smoke Chemistry		
Published Source	Level Tested %	Comment
BAT	0.00400	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.
Philip Morris	0.00020	An overall assessment of the data suggests that this ingredient did not add to the toxicity of smoke.

Ames Activity		
Published Source	Level Tested %	Comment
BAT	0.00400	Within the sensitivity and specificity of the system the Ames activity of the cigarette smoke condensate was not increased by the addition of the ingredient.
Philip Morris	0.00020	Within the sensitivity and specificity of the system the Ames activity of the cigarette smoke was not increased by the addition of the ingredient.

Micronucleus		
Published Source	Level Tested %	Comment
BAT	0.00400	Within the sensitivity of the in vitro micronucleus assay the activity of the cigarette smoke condensate was not increased by the addition of the ingredient.

Neutral Red		
Published Source	Level Tested %	Comment
BAT	0.00400	Within the sensitivity of the test system the in vitro cytotoxicity of the cigarette smoke condensate was not increased by the addition of the ingredient.
Philip Morris	0.00020	Within the sensitivity of the test system the in vitro cytotoxicity of the cigarette smoke was not increased by the addition of the ingredient.

Inhalation		
Published Source	Level Tested %	Comment
BAT	0.00400	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Lorillard	0.00020	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Philip Morris	0.00020	The data indicate that the addition of the ingredient, when added with one of three groups, did not increase the inhalation toxicity of the smoke.

Mouse Skin Painting		
Published Source	Level Tested %	Comment
Lorillard	0.00020	None of the changes appeared to be substantial enough to conclude that the tumour promotion capacity of the condensate was discernibly different between condensate produced from cigarettes with the ingredient in comparison with condensate from cigarettes without the ingredient.

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Benzyl carbinol

Tobacco Product Related Chemical and Biological Studies for Ingredients Tested Singly

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Benzyl carbinol

Toxicological Data on the Unburnt Ingredient

[+ve, positive; -ve, negative; ?, equivocal; with, with metabolic activation; without, without metabolic activation]

In vitro

Test system	Test conditions	Endpoint	Activation status	Results	Reference
Human white blood cells (lymphocytes)	Sister chromatid exchange (SCE) assay. 48-hr treatment with up to a toxic concentration of 5 or 6 mM (top dose not explicitly clear as graph and accompanying key did not correspond).	Chromosome effects	Without	-ve Cited as "equivocal response, or inadequately tested" in a report of the US EPA Gene-Tox Program (Tucker et al. 1993).	Norppa & Vainio, 1983
Human lymphocytes and HeLa cells	DNA damage and repair assay. No further details provided in citing source.	DNA damage/repair	Without	+ve	Cleaver, 1969; Cleaver & Painter, 1975
Baby hamster kidney cells	Tested for ability to induce DNA cross-linking (no further details provided in citing source).	DNA damage	Not specified	-ve	Rosenkranz et al. 1967
Salmonella typhimurium, strains TA98, TA100,	Ames assay, spot test. Tested at	Mutation	With and without S9	-ve	Florin et al. 1980

TA1535, TA1537	3 umol/plate.				
Salmonella typhimurium, strain TA100	Ames assay, tested at up to 12 mg/plate	Mutation	With and without S9	-ve	Zeiger & Pagano, 1984
Escherichia coli, polA+, polA1-	DNA-polymerase deficient assay system, disk diffusion procedure. No further details provided in citing source.	DNA damage (indicative test)	Without	-ve	Rosenkranz & Leifer, 1980
Escherichia coli B thy or B/r cells	Tested for ability to induce DNA single strand breaks. No further details provided in citing source.	DNA damage	Without	-ve	Nair et al 1975; Sleigh & Grigg, 1976
Escherichia coli B/r cells	Assay for inhibition of repair of radiation-induced DNA single-strand breaks. Tested at 0.25%.	DNA repair inhibition	Without	+ve (2-phenethyl alcohol inhibited repair of radiation-induced damage)	Nair et al. 1975
Bacillus subtilis, strain 168	Tested at a concentration of 0.3% for inhibition of genetic transformation.	Inhibition of genetic transformation	Without	+ve (the relevance of this unvalidated assay is unclear)	Urban & Wyss, 1969
Saccharomyces saké	Assay for induction of respiratory	(Mutation)	Not stated	+ve	Kojima et al. 1979a

	deficient mutants at a concentration of 0.1 %. Paper in Japanese, data table and abstract only in English.				
Saccharomyces saké, strain Kyokai no. 7	Assay for induction of respiratory deficient mutants. Tested up to a concentration of 0.2 %. Paper in Japanese, data table and abstract only in English.	(Mutation)	Not stated	+ve (apparently weak)	Kojima et al. 1979b
Saccharomyces cerevisiae	Assay for ability to induce cytoplasmic respiratory deficiency. No further details provided in citing source.	(Mutation)	Not stated	+ve	Smith et al. 1969; Wilkie & Maroudas, 1969
Mouse lymphoma cells, sea urchin embryos/eggs, trout sperm DNA, *Escherichia coli*, *Micrococcus radiodurans*, *Staphylococcus aureus*, *Saccharomyces cerevisiae*, *Schizosaccharomyces*	Various concentrations tested in additional studies for ability to inhibit DNA/RNA synthesis.	DNA damage (indicative tests)	Without	+ve (reversible in some cases)	Various references, cited in IUCLID, 2000

pombe, Caulobacter crescentus					

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