

Acetophenone

Botanical Source

Synonyms METHYL PHENYL KETONE;
ACETYL BENZENE;
ACETYL BENZOL;
PHENYL METHYL KETONE;
BENZOYL METHIDE

IUPAC Name

CAS Reference 98-86-2

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
138	Listed by the Council of Europe as acceptable for use in food at up to 10 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
806	18	No safety concern at current levels of intake when used as a flavouring agent.

FEMA	
FEMA No.	Comment
2009	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food
Found in apple, cheese, apricot, banana, cauliflower; used in chewing gum.

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

0.00047	5.55
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Tobacco Product Related Chemical and Biological Studies for Ingredients Added in a Mixture

Smoke Chemistry		
Published Source	Level Tested %	Comment
BAT	0.00450	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.
Philip Morris	0.00040	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	0.00450	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	0.00040	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	0.00450	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	0.00450	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	0.00040	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	0.00450	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Lorillard	0.00008	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Philip Morris	0.00040	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	0.00001	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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Gaworski CL, Heck JD, Bennett MB, Wenk ML. Toxicologic evaluation of flavor ingredients added to cigarette tobacco: skin painting bioassay of cigarette smoke condensate in SENCAR mice. *Toxicology.* 1999; 139(1-2):1-17.

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Tobacco Product Related Chemical and Biological Studies for Ingredients Tested Singly

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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	Result	References
Chinese hamster lung cells	Chromosome aberration assay. Tested up to 1.2 mg/ml without S9 and 1.0 mg/ml with S9.	Chromosome damage.	With and without S9.	+ve (with S9 only)	Sofuni <i>et al.</i> 1985
<i>Salmonella typhimurium</i> , strains TA98, TA100, TA1535, TA1537; <i>Escherichia coli</i> , strain WP2 uvrA/pKM101	Ames assay. Tested up to 5 mg/plate (toxic).	Mutation.	With and without S9.	-ve	JETOC, 2000
<i>Salmonella typhimurium</i> , strains TA98, TA100, TA2637	Ames assay. Tested up to 5 mg/plate (toxic).	Mutation.	With and without S9.	-ve	Nohmi <i>et al.</i> 1985
<i>Salmonella typhimurium</i> , strains TA97, TA102	Ames assay. Tested up to 1 mg/plate.	Mutation.	With and without S9.	-ve	Fujita & Sasaki, 1987
<i>Salmonella typhimurium</i> , various strains	Ames assays. Various conditions.	Mutation.	With and without activating fractions.	-ve	Bibra, 1991 (citing four studies)
<i>Salmonella typhimurium</i> , strain TA1535/pSK1002	SOS/umu assay. Tested at 680 µg/ml.	DNA damage.	With and without activating fraction.	-ve	RTECS, 2007

<i>Escherichia coli</i>	REC assay. Conditions not specified.	DNA damage (indicative test).	Without.	-ve	Fluck et al. 1976
<i>Bacillus subtilis</i> , strains H17, M45	REC assay. Tested at 21 µg/disk. However, did not produce a zone of inhibition and so no conclusion can be drawn.	DNA damage (indicative test).	Not known.	No test.	Oda <i>et al.</i> 1978

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