Ethyl Octanoate

Botanical Source

Synonyms ETHYL OCYLATE;
ETHYL CAPRYLATE

IUPAC Name ETHYL OCTANOATE

CAS Reference 106-32-1

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
392	Listed by the Council of Europe as acceptable for use in food at up to 50 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
33	-	No safety concern at levels of intake when used as a flavouring agent.

FEMA	
FEMA No.	Comment
2449	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food
Found in apple, banana, cheese, apricot, blackberry, broccoli, butter; used in frozen goods.

Estimated Intake from Food and Drink	
Daily Intake mg/kg/day	FEMA Possible Average Daily Intake mg
0.0006214	1.6480

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Tobacco Product Related Chemical and Biological Studies

Smoke Chemistry		
Published Source	Level Tested %	Comment
Philip Morris	0.00020	An overall assessment of the data suggests that this ingredient did not add to the toxicity of the smoke.
BAT	0.00470	At maximum application level this ingredient is not associated with significant increases in levels of Hoffman analytes in smoke.

Ames Activity		
Published Source	Level Tested %	Comment
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.
BAT	0.00470	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.

Micronucleus		
Published Source	Level Tested %	Comment
BAT	0.00470	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	0.00470	Within the sensitivity of the test system the in vitro cytotoxicity of the cigarette smoke 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 condensate was not increased by the addition of the ingredient.

Inhalation		
Published Source	Level Tested %	Comment
BAT	0.00470	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Lorillard	0.00001	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 results indicate that the addition of the ingredient when added with one of the three groups, did not increase the inhalation toxicity of mainstream smoke.

References

Baker RR, Pereira da Silva JR, Smith G. The effect of tobacco ingredients on smoke chemistry. Part I: Flavourings and additives. Food Chem Toxicol. 2004; 42 Suppl:S3-37.

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Baker RR, Massey ED, Smith G. An overview of the effects of tobacco ingredients on smoke chemistry and toxicity. Food Chem Toxicol. 2004; 42 Suppl:S53-83.

Carmines EL. Evaluation of the potential effects of ingredients added to cigarettes. Part 1: cigarette design, testing approach, and review of results. Food Chem Toxicol. 2002; 40(1): 77-91.

Rustemeier K, Stabbert R, Haussmann HJ, Roemer E, Carmines EL. Evaluation of the potential effects of ingredients added to cigarettes. Part 2: chemical composition of mainstream smoke. Food Chem Toxicol. 2002; 40(1): 93-104.

Roemer E, Tewes FJ, Meisgen TJ, Veltel DJ, Carmines EL. Evaluation of the potential effects of ingredients added to cigarettes. Part 3: in vitro genotoxicity and cytotoxicity. Food Chem Toxicol. 2002; 40(1): 105-111.

Vanscheeuwijck PM, Teredesai A, Terpstra PM, Verbeeck J, Kuhl P, Gerstenberg B, Gebel S, Carmines EL. Evaluation of the potential effects of ingredients added to cigarettes. Part 4: subchronic inhalation toxicity. Food Chem Toxicol. 2002; 40(1): 113-131.

Gaworski CL, Dozier MM, Heck JD, Gerhart JM, Rajendran N, David RM. Brennecke LH, Morrissey R. Toxicologic evaluation of flavor ingredients added to cigarette tobacco: 13 week inhalation exposures in rats. Inhal. Toxicol. 1998; 10:357-381

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

References
Baker RR, Bishop LJ. The pyrolysis of tobacco ingredients. J. Anal. Appl. Pyrolysis 2004, 71, 223-311.

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Toxicological Data on the Unburnt Ingredient

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

In vivo
No relevant data identified

In vitro

Test system	**Test conditions**	**Endpoint**	**Activation**	**Result**	**References**
Salmonella typhimurium TA92, TA1535, TA100, TA1537, TA94 and TA98	Up to 10 mg ethyl caprylate/plate was tested in an Ames assay.	Mutation	with and without S9	-ve	Ishidate M. *et al*. 1984
Chinese hamster fibroblasts	Up to 2 mg ethyl caprylate was tested in a chromosomal aberration assay.	Chromosome damage	without	-ve	Ishidate M. *et al*. 1984
Bacillus subtilis M45 and H17	Ethyl caprylate was tested in a rec-assay at 17 µg/disc. [results taken from table in Japanese paper]	DNA damage	without	-ve	Oda *et al.* 1978.

References

Ishidate M. *et al*. (1984). Fd Chem. Toxic. 22, 623.

Oda Y. *et al*. (1978). Osaka Furitsu KEKHSEH 9, 177.