

Citronella oil

Botanical Source

Synonyms CITRONELLA CEYLAN OIL

IUPAC Name

CAS Reference 8000-29-1

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
39	Listed by the Council of Europe as acceptable for use in food.

US Food and Drug Administration	
Number	Comment
182.20	Approved by the US FDA. FDA 21 CFR 182.20

Joint FAO/WHO Expert Committee on Food Additives (JECFA)		
Number	ADI	Comment
-	-	

FEMA	
FEMA No.	Comment
2308	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food
Found in citronella, used in alcoholic beverages, ice cream and baked goods

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

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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	0.00120	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.
Philip Morris	0.00010	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	0.00120	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	0.00010	Within the sensitivity and specificity of the system the Ames of the cigarette smoke was not increased by the addition of the ingredient

Micronucleus		
Published Source	Level Tested %	Comment
BAT	0.00120	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	0.00120	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	0.00010	Within the sensitivity and specificity 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	0.00120	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.
Philip Morris	0.00010	The data indicates that the addition of the ingredient, when added with one of three groups, did not increase the inhalation toxicity of the 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.
Baker RR, Pereira da Silva JR, Smith G. The effect of tobacco ingredients on smoke chemistry. Part II: casing ingredients. Food Chem Toxicol. 2004; 42 Suppl:S39-52.
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.

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Tobacco Product Related Chemical and Biological Studies for Ingredients Tested Singly

References
Baker RR, Bishop LJ. The pyrolysis of non-volatile tobacco ingredients using a system that simulates cigarette combustion conditions. J. Anal. Appl. Pyrolysis 2005, 74, 145-170.

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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

Species	Test conditions	Endpoint	Results	Reference
Mouse, DDY, ICR (groups of 6 males)	Animals were given a single intraperitoneal (i.p.) injection of 700 mg/kg bw, or four i.p. injections of 175 mg/kg bw. Bone marrow cells examined for micronuclei 24 hr later.	Chromosome damage	-ve	Ishidate et al. 1988a

In vitro

Test system	Test conditions	Endpoint	Activation status	Results	Reference
Chinese hamster lung fibroblast cell culture	Citronella oil incubated at 150 ug/ml for 48 hr, cells examined for chromosome aberrations. Review paper. No mention of cytotoxicity.	Chromosome damage [Numerical chromosome changes were also apparently assessed.]	Without	-ve, but a significant increase in polyploid cells was reported. (limited study as no activation was used)	Ishidate et al. 1988b
<i>Salmonella typhimurium</i> , strains TA98,	Ames test. No further details given.	Mutation	With and without S9	-ve	Ishidate et al. 1988a

TA100, TA1535, TA1537, TA1538					
<i>Bacillus subtilis</i> , strains H17 (rec ⁺), M45 (rec ⁻)	Rec assay for differential killing. No further details given.	DNA damage (indicative test)	With and without S9	+ve	Ishidate et al. 1988a

References

Ishidate M et al. (1988a). Results of mutagenicity screening of food additives (part 9). Tokishikoroji Foramu 11, 663-669.

Ishidate M et al. (1988b). A comparative analysis of data on the clastogenicity of 951 chemical substances tested in mammalian cell cultures. Mutation Research 195, 151-213.