

Molasses, sugar cane

Botanical Source	Saccharum officinarum
Synonyms	SYRUP, DARK; TREACLE, BLACK; MOLASSES, BLACKSTRAP
IUPAC Name	
CAS Reference	68476-78-8 8052-35-5
E Number	

Food Legislation

Council of Europe (CoE)	
Number	Comment
2100	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
	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food
Found in refined sugars; common food item.

Estimated Intake from Food and Drink	
Daily Intake mg/kg/day	FEMA Possible Average Daily Intake mg
621.4689	

Molasses, sugar cane

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

Smoke Chemistry		
Published Source	Level Tested %	Comment
BAT	5.35000	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.
Philip Morris	0.02180	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	5.35000	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	0.02180	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	5.35000	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	5.35000	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	0.02180	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
Philip Morris	0.02180	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.
BAT	5.35000	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.

Mouse Skin Painting		
Published Source	Level Tested %	Comment

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.

Molasses, sugar cane

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.

Molasses, sugar cane

Toxicological Data on the Unburnt Ingredient

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

In vivo

Species	Test conditions	Endpoint	Results	Reference
Mouse (number unspecified)	Animals were fed a water extract of molasses, providing a dose equivalent to that contained in 40 mg of gadakhu (a paste-like tobacco preparation containing 35% molasses). Bone marrow cells examined for chromosome aberrations 24 hr later.	Chromosome damage	[Presumably] -ve (Result not specifically reported in this brief abstract and no raw data were presented.)	Das & Dash, 1992

References

Das R.K. & Dash B.C. (1992). Evaluation of genotoxicity of gadakhu and its ingredients in-vivo in the mouse. Eleventh International Congress of Cytology. Acta Cytology 36, 775-776.

Setliff J.A. & Mower H.F. (1977). Mutagens in decomposition products of carbohydrates. Fed. Proc. Fed. Am. Seoc. Exp. Biol. 36, 304.