Starch

Botanical Source

Synonyms AMYLUM;
STARCH, CORN;
STARCH, MAIZE;
STARCH, POTATO;
STARCH,TAPIOCA

IUPAC Name

CAS Reference 9005-25-8

E Number

Food Legislation

Council of Europe (CoE)	
Number	Comment
-	-

US Food and Drug Administration	
Number	Comment
182.90	Approved by the US FDA. FDA 21 CFR 182.90

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 corn, maize, tapioca, potato; used in gravies, sauces,salad dressing, pie filling, desserts.

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

Smoke Chemistry		
Published Source	Level Tested %	Comment
BAT	1.90000	At maximum application level this ingredient is not associated with significant increases in levels of Hoffmann analytes in smoke.

Ames Activity		
Published Source	Level Tested %	Comment
BAT	1.90000	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	1.90000	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	1.90000	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	1.90000	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.

Lorillard	0.00970	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
Lorillard	0.00970	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.

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.

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 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

Starch is listed as the suspected causal agent in one of the 395 cases of occupational asthma reported to the UK's SWORD (Surveillance of Work-related and Occupational Respiratory Disease) project for 1993 (Sallie *et al.*, 1994).

A woman repeatedly exposed [no further details] to corn starch developed hypersensitivity pneumonitis [lung inflammation] (Rabe *et al.*, 1991).

A female nurse suffered a range of symptoms of allergy, including anaphylaxis, in response to airborne cornstarch powder, having been occupationally exposed through the use of surgical gloves that contained it. A skin prick test with a slurry of cornstarch powder induced a "violent" response, confirming that this was the responsible allergen (Seggev *et al.*, 1990).

Organism	Test Type	Route	Reported Dose	Reference
mouse	LD_{50}	*i.p.*	6600 mg/kg	Pharmaceutical Chemistry Journal Vol. 15, Pg. 139, 1981

References

Pharmaceutical Chemistry Journal Vol. 15, Pg. 139, 1981

Rabe K F *et al.* (1991). Hypersensitivity pneumonitis due to corn starch: presentation of a case and experimental approach. Am. Rev. Resp. Dis. 143, A103 [Abstract].

Sallie B A *et al.* (1994). SWORD ’93. Surveillance of work-related and occupational respiratory disease in the UK. Occupational Medicine 44, 177-182.

Seggev J S *et al.* (1990). Anaphylaxis due to cornstarch surgical glove powder. Annals of Allergy 65(2), 152-155.