APRICOT EXTRACT/CONCENTRATE

SYNONYMS

Persic oil
Prunus armeniaca oil

CHEMICAL STRUCTURE

Ill defined (mixture of components)

CHEMICAL FORMULA

Ill defined (mixture of components)

IDENTIFIER DETAILS

CAS Number	:	68650-44-2
CoE Number	:	-
FEMA	:	2105
EINECS Number	:	272-046-1
E Number	:	-

CLP CLASSIFICATION

Ingredient CLP Classification: No

Endpoint	Classification	Category
Acute Oral Toxicity	-	-
Acute Dermal Toxicity	-	-
Acute Inhalation Toxicity	-	-
Skin Corrosive/irritant	-	-
Eye Damage/Irritation	-	-
Respiratory Sensitisation	-	-
Skin Sensitisation	-	-
Mutagenicity/Genotoxicity	-	-
Carcinogenicity	-	-
Reproductive Toxicity	-	-
Specific Target Organ Toxicity	-	-
Aspiration Toxicity	-	-

SPECIFICATIONS

Melting Point: Ill defined (mixture of components)

Boiling point: Ill defined (mixture of components)

PURPOSE

Flavouring substance

STATUS IN FOOD AND DRUG LAWS

CoE limits:

Beverages (mg/kg)	Food (mg/kg)	Exceptions (mg/kg)
-	-	-

Acceptable Daily Intake:

ADI (mg/kg)	ADI Set by	Date Set	Comments
-	-	-	-

FDA Status:[CFR21]

Section Number	Comments
182.40	Natural extractives (solvent free) used in conjunction with spices, seasonings and flavourings'.

HUMAN EXPOSURE

Natural Occurrence: The Apricot (*Prunus armeniaca*, syn. *Armeniaca vulgaris*) is a fruit-bearing tree native to China. It is related to the Plum, and classified with it in the subgenus *Prunus* of the genus *Prunus*. It is a small to medium sized tree with a dense, spreading canopy 8-12 m tall; its leaves are shaped somewhat like a heart, with pointed tips, and about 8 cm long and 3-4 cm wide. Its flowers are white to pinkish in colour. The fruit appears similar to a peach or nectarine, with a colour ranging from yellow to orange and sometimes a red cast; its surface is smooth and nearly hairless. Apricots are stone fruit (drupes), and have only one seed each, often called a "stone".

Reported Uses: Apricot is used in baked goods at 300 ppm, frozen dairy at 400 ppm, soft candy at 375 ppm, and non-alcoholic beverages at 150 ppm [Fenaroli 2005]

TOXICITY DATA

Carmines (2002), Rustemeier *et al*., (2002), Roemer *et al*., (2002) and Vanscheeuwijck *et al.,* (2002) reported on a testing program designed to evaluate the potential effects of 333 ingredients added to typical commercial blended test cigarettes on selected biological and chemical endpoints. The studies performed included a bacterial mutagenicity screen [Ames assay] a mammalian cell cytotoxicity assay [neutral red uptake], determination of smoke chemical constituents and a 90-day rat inhalation study. Based on the findings of these studies, the authors concluded that the addition of the combined ingredients, including apricot extract at levels up to 1786 ppm, "did not increase the overall toxicity of cigarette smoke" [Carmines (2002),

Rustemeier *et al*., (2002), Roemer *et al*., (2002) and Vanscheeuwijck *et al.,* (2002)].

In Vivo Toxicity Status

Inhalation Toxicity

The addition of apricot extract at 600 ppm to reference cigarettes, used in a 90 day-sub-chronic inhalation exposure in rats, led to a series of pathological changes to smoke exposure that were indistinguishable from those changes caused by the control cigarettes. This indicated that addition of apricot extract to a reference cigarette had no discernable effect upon the type or severity of the treatment related pathological changes associated with tobacco smoke exposure [Baker *et al.,* 2004]

Other relevant studies

Apricots are becoming more widely associated with allergic reacts especially oral allergy syndrome. A lipid transfer protein [LTP] in apricot was determined as the allergen in the serum of 30 patients with oral allergy syndrome. This LTP is also reported to be highly cross reactive with the LTP from peach [Pastorello *et al.,* 2000].
A recent study investigated the effect of cigarettes, containing various additives in three combinations, in a 90-day nose-only smoke inhalation study in rats. These ingredients included apricot extract at 1786 ppm, a level described as a multiple of its typical use in a US cigarette. The data from this study along with that from a number of other biological and chemical studies indicate that the addition of the combined ingredients “did not increase the inhalation toxicity of the smoke, even at the exaggerated levels used” [Vanscheeuwijck *et al.*, 2002].

Behavioural data

No data identified.

In Vitro Toxicity Status

Carcinogenicity and Mutagenicity

Roemer *et al.,* (2002) reported on a study in which cigarettes containing various additives in three different combinations were produced. Smoke condensates prepared from these cigarettes were then tested in two different *in vitro* assays. The mutagenicity of the smoke condensate was assayed in the *Salmonella* plate incorporation [Ames] assay with tester strains TA98, TA100, TA102, TA1535 and TA1537 in the presence and absence of an S9 metabolic activation system. The cytotoxicity of the gas/vapour phase and the particulate phase was determined in the neutral red uptake assay with mouse embryo BALB/c 3T3 cells. The authors concluded that the *in vitro* mutagenicity and cytotoxicity of the cigarette smoke was not increased by the

addition of the ingredients which included apricot extract at levels up to 1786 ppm [a multiple of its typical use in a US cigarette] [Roemer *et al.,* 2002].

Baker *et al.,* [2004]; examined the effects of the addition of 482 tobacco ingredients upon the biological activity and chemistry of mainstream smoke. The ingredients, essentially different groups of flavourings and casings, were added in different combinations to reference cigarettes. The addition of apricot extract at 600 ppm was determined not to have affected the mutagenicity of the total particulate matter (TPM) of the smoke in either the Ames, *in vitro* micronucleus assay or the neutral red assay when compared with that of the control cigarettes [Baker *et al.,* 2004].

Additional information concerning the in vitro mutagenicity of this material may be found in "An Interim report on data originating from Imperial Tobacco Limited's Genotoxicity testing programme September 2003" or "An updated report on data originating from Imperial Tobacco Limited's external Genotoxicity testing programme - Round 2 August 2007".

The mutagenicity of the smoke condensate was assayed in the *Salmonella* plate incorporation [Ames] assay with the tester strain TA98 in the presence of an S9 metabolic activation system. The cytotoxicity of the cigarette condensate was determined in the neutral red uptake assay and the (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H tetrazolium, inner salt assay (MTS assay) with the human hepatocellular liver carcinoma cell line, HEP-G2. It was concluded that the *in vitro* mutagenicity and cytotoxicity of the cigarette smoke was not increased by the addition of the ingredients, which included apricot extract at levels up to 254 ppm.

Other relevant studies

The anti oxidant properties of apricot extract was such that it was effective at protecting deoxyribose against hydroxyl radicals better than BHT or BHA [Murcia *et al.,* 2001].

In the rat *in situ* perfusion model the administration of an apricot extract enhanced the intestinal absorption of p-glycoproteins [Deferme *et al.,* 2002].

REFERENCES

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