

Butyl acetate

Botanical Source

Synonyms n-BUTYL ACETATE

IUPAC Name

CAS Reference 123-86-4

E Number

Food Legislation

Council of Europe (CoE)

Number	Comment
194	Listed by the Council of Europe as acceptable for use in food at up to 30 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
127	1200	No safety concern at current levels of intake when used as a flavouring agent.

FEMA

FEMA No.	Comment
2174	Generally recognised as safe as a flavour ingredient:GRAS List Number 3

Natural Occurrence and Use in Food

Found in apple, banana, beer, black currant, cashew nuts, cheese, raspberry, apricot, blackberry, brandy, cantaloupe; used in cheeses, baked goods, candy.

Estimated Intake from Food and Drink

Daily Intake mg/kg/day	FEMA Possible Average Daily Intake mg
0.0028	6.16

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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	0.00150	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	0.00150	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	0.00150	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	0.00150	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	0.00150	The results indicate that the addition of the ingredient had no discernible effect on the inhalation toxicity of mainstream smoke.

Mouse Skin Painting		
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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.

Tobacco Product Related Chemical and Biological Studies for Ingredients Tested Single

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

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

In vitro

Test system	Test conditions	Endpoint	Activation	Result	References
Chinese hamster lung cells	Cells treated with up to 2 mg/plate for 48 hr and examined for chromosome aberrations and changes in chromosome number (polyploidy)	chromosome damage and chromosome number changes	Without	-ve (limited assay, not tested with S9)	Ishidate <i>et al.</i> 1984
<i>Salmonella typhimurium</i> TA97, TA98, TA100, TA1535, TA1537	Ames test. Concentrations up to 10 mg/plate, using a preincubation method.	mutation	With and without S9	-ve (a good quality study)	Zeiger <i>et al.</i> 1992 (cited in CCRIS, 2003)
<i>Salmonella typhimurium</i> TA92, TA94, TA98, TA100, TA1535, TA1537 (and possibly also TA2637)	Ames test. Concentrations up to 10 mg/plate	mutation	With and without S9	-ve (a good quality study)	Ishidate <i>et al.</i> 1984
<i>Salmonella typhimurium</i> TA98, TA100, TA1535, TA1537, TA1538	Concentrations up to 5 mg/plate, using a preincubation method	mutation	With and without S9	-ve (a good quality study)	Shimizu <i>et al.</i> 1985 (cited in Stouten & Bogaerts, 2002 and CCRIS, 2003)

<i>Escherichia coli</i> WP2 uvrA	Concentrations up to 5 mg/plate, using a preincubation method	mutation	With and without S9	-ve	Shimizu <i>et al.</i> 1985 (cited in Stouten & Bogaerts, 2002 and CCRIS, 2003)
<i>Saccharomyces cerevisiae</i> D61.M	0.25-0.4%. Examined for mitotic aneuploidy.	chromosome number changes	Without	-ve	Zimmerman <i>et al.</i> 1985

References

- CCRIS (2003). Chemical Carcinogenesis Research Information System. Available via <http://toxnet.nlm.nih.gov>.
- Ishidate M J *et al* (1984). Primary mutagenicity screening of food additives currently used in Japan. *Food and Chemical Toxicology*, 22, 623-636.
- Shimizu H *et al* (1985). The results of microbial mutation test for forty-three industrial chemicals. *Japanese Journal of Industrial Health*, 27, 400-419 (cited in Stouten & Bogaerts, 2002 and CCRIS, 2003).
- Stouten H & Bogaerts W (2002). DECOS and SCG basis for an occupational standard n-, iso-, sec-, and tert-butyl acetate. (2002:II). *Arbete och Halsa*, 11, 1.
- Zeiger E *et al* (1992). Salmonella mutagenicity tests: V. Results from the testing of 311 chemicals. *Environmental and Molecular Mutagenesis*, 19 Suppl 21, 2-141 (cited In CCRIS, 2003).
- Zimmerman F K *et al* (1985). Acetone, methyl ethyl ketone, ethyl acetate, acetonitrile and other polar aprotic solvents are strong inducers of aneuploidy in *Saccharomyces cerevisiae*. *Mutation Research*, 149, 3-351.