BENZALDEHYDE

MODULE 1

SUBSTANCE INFORMATION SHEET

BENZALDEHYDE

CAS number	100-52-7
Natural Origin	N/A
Chemical Formula	C7-H6-O
Synonymes	Benzene methylal; Benzene carbonal; Benzoic aldehyde; Benzene carboxaldehyde
E number	N/A
FEMA GRAS number	2127

General Information

Council of Europe (CoE)

Number	Comment
101	N/A

US Food & Drug Administration (FDA)

Number	Comment
21 CFR 182.60	Approved by U.S. FDA as Food Additives Generally Recognized as Safe (GRAS)

Joint FAO/WHO Expert Committee on Food Additives (JECFA)

Number	ADI	Comment
22	0-5 mg/kg bw	No safety concern at current levels of intake when used as a flavoring agent

European Food Safety Authority (EFSA)

Number	Comment
05.013	Benzyl alcohols/aldehydes/acids/esters/acetals. Benzyl and benzoate esters included. May also contain aliphatic acyclic or alicyclic ester or acetal component.

Flavors & Extracts Manufacturers Association (FEMA)

Number	Comment
2127	Generally Recognized as Safe as a flavor ingredient - GRAS 3

Uses and Exposure

Benzaldehyde is uses in many industries, including food, perfumery, dye, agriculture and medicine. In the food industry, Benzaldehyde is used as a flavoring agent and adjuvant.

Estimated Intake from Food and Drink

Daily Intake
The total benzaldehyde daily intake is estimated at 600 µg/kg bw/day in the USA and 160 µg/kg bw/day in Europe[1].

Summary of the Toxicological Investigations on the Use of the Substance in Tobacco Products

Smoke Chemistry

Internal Studies	Level Tested ppm	Comment
Carmines for Philip Morris	1, 4, 12	The effect of the addition of benzaldehyde as part of a mixture at concentrations up to 12 ppm on the composition of the cigarette smoke was investigated.
Philip Morris	100, 1,000 and 10,000	The effect of the addition of benzaldehyde at concentrations up to 10,000 ppm on the composition of the cigarette smoke was investigated.

Neutral Red Uptake Assay (NRU)

Internal Studies	Level Tested ppm	Comment
Carmines for Philip Morris	1, 4, 12	The effect of the addition of benzaldehyde as part of a mixture at concentrations up to 12 ppm on the cytotoxicity, as measured by the Neutral Red Uptake assay, was investigated.
Philip Morris	100, 1,000 and 10,000	The effect of the addition of benzaldehyde at concentrations up to 10,000 ppm on the cytotoxicity, as measured by the Neutral Red Uptake assay, was investigated.

AMES Assay

Internal Studies	Level Tested ppm	Comment
Carmines for Philip Morris	1, 4, 12	The effect of the addition of benzaldehyde as part of a mixture at concentrations up to 12 ppm on the mutagenic response, as measured by the Salmonella reverse mutation assay, was

		investigated.
Philip Morris	100, 1,000 and 10,000	The effect of the addition of benzaldehyde at concentrations up to 10,000 ppm on the mutagenic response, as measured by the Salmonella reverse mutation assay, was investigated.

Mouse Lymphoma Assay (MLA)

Internal Studies	Level Tested ppm	Comment
N/A	N/A	N/A

In vivo Micronucleus

Internal Studies	Level Tested ppm	Comment
Philip Morris	100, 1,000 and 10,000	The effect of the addition of benzaldehyde at concentrations up to 10,000 ppm on the clastogenic/aneugenic response, as measured by the in vivo Micronucleus Assay, was investigated.

Inhalation studies

Internal Studies	Level Tested ppm	Comment
Carmines for Philip Morris	1, 4, 12	The effect of the addition of benzaldehyde as part of a mixture at concentrations up to 12 ppm on the toxicity of cigarette smoke, as suggested in a 90-day inhalation study, was investigated.

References

1. Safety evaluation of certain food additives and contaminants, WHO Food Additives series 48: Benzyl derivatives. http://www.inchem.org/documents/jecfa/jecmono/v48je14.htm