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Polyvinyl alcohol

Taiwan Reporting Repository

October 2026

Prepared by British American Tobacco

Version	Revision Description	Evaluator	Date
1	Initial Taiwan reporting repository	I Williams	04 Oct 2026

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Identification & Characterisation

Table 1. Identification & Characterisation details of **Polyvinyl alcohol**.

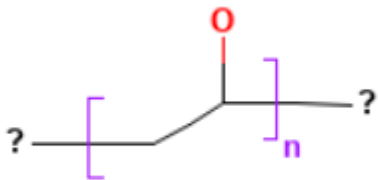
			Reference
Ingredient Name	Common Name	Polyvinyl alcohol	PubChem ¹
Synonyms of Common Name		Poly(vinyl alcohol)	PubChem ¹
CAS Number		9002-89-5	PubChem ¹
EINECS Number		680-790-7 618-340-9	ECHA ²
Aroma Chemical or Natural		Aroma Chemical	
Molecular Formula		(C ₂ H ₄ O) _x	PubChem ¹
Structural Formula			PubChem ¹
Canonical SMILE		Not applicable as a single canonical structure because PVA is a polymer with variable chain length and degree of hydrolysis	N/A
Molecular Weight		Variable and grade-dependent; JECFA evaluation discusses food-additive material by specification rather than one discrete molecular weight	JECFA/WHO ³
Cramer Class		Not applicable; polymeric material outside the usual discrete-organic-chemical Cramer decision tree	N/A

Table 2. Physico-chemico properties of **Polyvinyl alcohol**.

			Reference
Melting Point (°C)	>200 °C; other melting points: 212-267 °C		PubChem ¹
Boiling Point (°C)	340°C at 760 mm Hg /approximately/		PubChem ¹
Solubility in Water (g/L)	Soluble in water		PubChem ¹
Flammability limits (% v/v)	Flammable when exposed to heat or flame.		PubChem ¹
(Auto) Ignition Temp. (°C)			PubChem ¹

¹ [Poly\(vinyl alcohol\) - PubChem](#)

² [Substance Information - ECHA](#)

³ [WHO | JECFA](#)

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		ECHA CompTox
Decomposition Temp. (°C)	>200 °C When heated to decomposition it emits acrid smoke and irritating fumes.	PubChem ¹
Stability	Stable under recommended storage conditions.	PubChem ¹
Vapour Pressure	Negligible	PubChem ¹ ECHA CompTox
Log K _{ow}	N/A	PubChem ¹ ECHA CompTox
Henry's Law constant (or air-water partition coefficient) (atm m ³ /mole)	N/A	PubChem ¹ ECHA CompTox

Table 3. Regulatory or authoritative status of **Polyvinyl alcohol**.

		Reference
FEMA Number	Not Listed	FEMA flavour library
CoE Number	Not Listed	EC No. 1334/2008 Database
Not Listed	Not Listed	EC No. 1334/2008 Database
JECFA Number	1203	JECFA
ADI	JECFA: 0-50mg/kg bw/day	JECFA
Intake (EFSA/JECFA)	JECFA	JECFA
History of Use	Used as a coating, binder, sealing and surface-finishing agent in foods; also has a history of use in cosmetics, food-contact materials, pharmaceutical and medical applications	WHO/JECFA
FDA	Approved for use in food under 175.105, 175.300, 175.320, 176.170, 176.180, 177.1200, 177.1670, 177.2260, 177.2800, 178.3910 and 181.30	FDA Substances added to food
Substance of Very High Concern (SVHC) Candidate list	Not Listed	ECHA SVHC Candidate list
ECHA Authorisation List	Not Listed	ECHA Authorisation list

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ECHA Health hazard classification (see Annex VII for human health hazards) ⁴	No Harmonised or CMR notifications.	ECHA
IARC classification	Not Listed	IARC
NTP classification	Not Listed	NTP RoC
EPA classification	Not Listed	EPA IRIS
Endocrine Disruptor Lists	Not Listed	Endocrine disruptor lists
Occupational limits	Not Listed	GESTIS
EU BAP Ingredient	Not Listed	EU No. 1334/2008
California Prop 65	Not Listed	OEHHA
Oral Allergy/ Intolerance	Not Listed	EU No. 1169/2011

⁴ According to the human health (including physical hazard) classifications in the ECHA C&L Inventory (<http://echa.europa.eu/information-on-chemicals/cl-inventory-database>); environmental classifications are beyond the scope of this monograph.

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Taiwan Referencing Convention

Each of the following sections requires a *brief description of reference, formal citation, and 'A' number designated*. Only one reference needs to be provided per section (essentially, presence or absence of data).

If ingredient specific references cannot be identified for any of the sections below, insert 'N/A' where appropriate.

Each reference cited in the following sections must have a unique identifier, starting with an 'A', followed by 4 digits. This is the prescribed format of Taiwan's regulatory authority.

Once saved on a local drive and named according to convention, references must be stored in the following folder location on SharePoint:

[Taiwan 'A' References](#)

As of 31st December 2024, the latest reference was saved as A0690. The next reference identified for any given Taiwan Reporting Repository must follow chronologically, A0691, A0692, etc. Please check the Taiwan 'A' references folder⁵ on SharePoint for the next unique identifier in sequence.

Once the following sections are completed, with references collated. All references must be merged into one pdf. This pdf should then be titled using the same naming convention described above (i.e. the next 4 digit 'A' number in sequence).

It is this final 'A' reference that must be provided to Tox Enablers, along with a completed Reporting Repository.

Upon completion, the Evaluator is responsible for saving a finalised Taiwan Reporting Repository in the Taiwan Reporting folder⁶.

All previous Taiwan Reporting Repositories are saved in the following folder on the H Drive:

<H:\Group\R&D\S&RA\Ings Comp Team\Disclosure RD158\2017\Taiwan\Tox Profiles>

⁵ <https://bat.sharepoint.com/:f:/r/sites/GBIN-CPS900/Shared%20Documents/Tox%20Reporting/Taiwan%20Reporting/Taiwan%20%27A%27%20References?csf=1&web=1&e=uon5Cu>

⁶ <https://bat.sharepoint.com/:f:/r/sites/GBIN-CPS900/Shared%20Documents/Tox%20Reporting/Taiwan%20Reporting?csf=1&web=1&e=n4SkXb>

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Dermal/ Inhalation Carcinogenicity

Brief description of reference: N/A. No ingredient-specific reference identified.

Formal citation: N/A

'A' number designated: N/A

Inhalation Studies

Brief description of reference: N/A. No ingredient-specific reference identified.

Formal citation: N/A

'A' number designated: N/A

In vitro Toxicology

Brief description of reference:

Polyvinyl alcohol was evaluated in a range of in vitro genotoxicity assays reviewed by JECFA. The available studies included bacterial reverse mutation (Ames) tests and mammalian cell genotoxicity assays. Overall, polyvinyl alcohol did not demonstrate evidence of genotoxic activity in the in vitro tests reviewed, and these data formed part of JECFA's overall safety evaluation of the substance.

Formal citation:

World Health Organization (WHO). 2004. Polyvinyl Alcohol. In: Safety Evaluation of Certain Food Additives and Contaminants. WHO Food Additives Series No. 52. Prepared by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). Geneva: World Health Organization. Available via the JECFA toxicological monograph.

'A' number designated: A0708

Other Toxicological Information

Brief description of reference: JECFA reviewed absorption, distribution and excretion, acute toxicity, short-term and long-term toxicity, carcinogenicity, genotoxicity, reproductive toxicity and human observations. Oral absorption was low; more than 98% of a radiolabelled gavage dose was excreted in faeces within 48 hours in rats.

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Formal citation: World Health Organization (WHO). 2004. Polyvinyl Alcohol. WHO Food Additives Series 52. Joint FAO/WHO Expert Committee on Food Additives (JECFA).

'A' number designated: A0708

Pyrolysis

Brief description of reference: Ingredient-specific thermal-decomposition data are available. Py/GC/MS work reported temperature-dependent product profiles, including water, acetaldehyde, 2-butenal and 2,4-hexadienal at 573 K, and acetaldehyde, cyclic olefinic compounds and aromatic hydrocarbons at 1173 K. These are laboratory pyrolysis conditions and are not equivalent to cigarette smoke chemistry.

Formal citation: Li Y, Xia Z-X, Ma L-K, He Z-C (2021). Study on the thermal decomposition behavior and products of poly(vinyl alcohol) and its LiClO₄ composites via Py/GC/MS. Journal of Thermal Analysis and Calorimetry. doi:10.1007/s10973-021-11019-3.

'A' number designated:

A0709

Reproductive & Developmental Toxicity

Brief description of reference: A two-generation reproductive toxicity study was conducted in rats administered polyvinyl alcohol in the diet at doses of 0, 2000, 3500, or 5000 mg/kg bw/day. No treatment-related adverse effects on mating performance, fertility, pregnancy indices, estrous cycling, sperm parameters, litter characteristics, pup development, or reproductive organ histopathology were observed in either the F1 or F2 generations. The study was conducted according to GLP and OECD principles. The NOEL for reproductive and developmental toxicity was 5000 mg/kg bw/day, the highest dose tested.

Formal citation: World Health Organization (WHO). 2004. Polyvinyl Alcohol. WHO Food Additives Series 52. Joint FAO/WHO Expert Committee on Food Additives (JECFA).

'A' number designated: A0708

Smoke Chemistry

Brief description of reference: No ingredient-specific study evaluating the effect of polyvinyl alcohol addition on cigarette mainstream smoke chemistry was identified in the sources reviewed.

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Formal citation: N/A

'A' number designated: N/A

Toxicological Data on Unburnt Ingredient

Brief description of reference:

A substantial oral toxicology database for unburnt polyvinyl alcohol is summarised by JECFA. The Committee established an ADI of 0-50 mg/kg bw/day for the specified food-additive material.

Formal citation: World Health Organization (WHO). 2004. Polyvinyl Alcohol. WHO Food Additives Series 52. Joint FAO/WHO Expert Committee on Food Additives (JECFA).

'A' number designated: A0708

Transfer Studies

Brief description of reference: No ingredient-specific transfer study from tobacco or cigarette components into mainstream smoke was identified.

Formal citation: N/A

'A' number designated: N/A

Addictive Properties

Brief description of reference: No ingredient-specific evidence indicating addictive or dependence-producing properties was identified.

Formal citation: N/A

'A' number designated: N/A

Cardiovascular Toxicity

Brief description of reference: No dedicated ingredient-specific cardiovascular toxicity study was identified as a representative source for this endpoint.

Formal citation: N/A

'A' number designated: N/A

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List of Potential Sources of Reference

Below are two sections detailing potential sources of reference. The Primary Sources are those most likely to have a reference for individual ingredients for the sections above (Transfer Studies, Smoke Chemistry, etc). Other Sources are those from the standard Tox Data Repository template that *may* contain appropriate references.

The evaluator should not limit their search to the references cited in these sections. Search engines such as [Scopus](#) (free registration required), [PubMed](#), [Embase](#) (free registration required), [ScienceDirect](#) should also be used in the absence of data from references cited herein.

Using Advanced Search options, search strings such as “Chemical Name” AND “*in vitro*” should identify any suitable references if available (variations on search strings may be needed).

If references are identified from academic search engines, search strings should be documented in the appropriate sections above, as should formal citations.

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Primary Sources of Reference

Harm reduction in nicotine addiction, A report of the tobacco advisory group of the Royal College of Physicians, 2007.

Richard R. Baker, José R. Pereira da Silva, Graham Smith. The effect of tobacco ingredients on smoke chemistry. Part I: Flavourings and additives. Food and Chemical Toxicology, Volume 42, Supplement, 2004, Pages 3-37, ISSN 0278-6915. <https://www.sciencedirect.com/science/article/abs/pii/S0278691503001893>

Richard R. Baker, José R. Pereira da Silva, Graham Smith. The effect of tobacco ingredients on smoke chemistry. Part II: Casing ingredients. Food and Chemical Toxicology. Volume 42, Supplement, 2004, Pages 39-52. <https://www.sciencedirect.com/science/article/abs/pii/S0278691503002448>

Richard R Baker, Eian D Massey, Graham Smith. An overview of the effects of tobacco ingredients on smoke chemistry and toxicity. Food and Chemical Toxicology. Volume 42, Supplement, 2004, Pages 53-83. <https://www.sciencedirect.com/science/article/abs/pii/S0278691504000043>

Richard R Baker, Louise J Bishop. The pyrolysis of tobacco ingredients. Journal of Analytical and Applied Pyrolysis. Volume 71, Issue 1, 2004, Pages 223-311, ISSN 0165-2370. <https://www.sciencedirect.com/science/article/abs/pii/S0165237003000901>

Richard R. Baker, Louise J. Bishop. The pyrolysis of non-volatile tobacco ingredients using a system that simulates cigarette combustion conditions. Journal of Analytical and Applied Pyrolysis. Volume 74, Issues 1-2, 2005, Pages 145-170, ISSN 0165-2370. <https://www.sciencedirect.com/science/article/abs/pii/S0165237005000495>

Rodgman and Perfetti, The chemical components of tobacco and tobacco smoke, CRC Press, 2009. ISBN 978-1-4200-7883-1.

Smokeless tobacco and some tobacco-specific N-nitrosamines, IARC Monograph 89, 2007.

Tobacco smoke and involuntary smoking, IARC Monograph 83, 2004.

US Department of Health and Human Services. The Health Consequences of Smoking. Nicotine Addiction, A Report of the Surgeon General, US Government Printing Office, Washington DC, 1988.

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Other Sources of Reference

Burdock GA (2010). Fenaroli's Handbook of Flavor Ingredients. 6th Edition. CRC Press, Boca Raton. ISBN 978-1-4200-9077-2.

California Office of Environmental Health Hazard Assessment (OEHHA) Proposition 65 list, Accessed [month-year]: <https://oehha.ca.gov/proposition-65/proposition-65-list>

European Chemicals Agency (ECHA). Accessed [month-year]: <https://echa.europa.eu/home>

European Chemicals Agency (ECHA). Authorisation List, Accessed [month-year]: <https://echa.europa.eu/authorisation-list>

European Chemicals Agency (ECHA). Candidate List of substances of very high concern (SVHC) for Authorisation, Accessed [month-year]: <https://echa.europa.eu/candidate-list-table>

European Commission list of flavourings and source materials as laid down in Part I of Annex I of Regulation (EC) No 1334/2008. Database, Accessed [month-year], available: https://webgate.ec.europa.eu/foods_system/main/?event=display

European Food Safety Authority (EFSA). Accessed [month-year]: <https://www.efsa.europa.eu/en>

European Medicines Agency (EMA). Medicines Database (2022), Accessed [month-year]: <https://www.ema.europa.eu/en/medicines>

European Union Regulation (EC) No 1334/2008 of the European Parliament and of the Council of 16 December 2008 on flavourings and certain food ingredients with flavouring properties for use in and on foods and amending Council Regulation (EEC) No 1601/91, Regulations (EC) No 2232/96 and (EC) No 110/2008 and Directive 2000/13/EC, Accessed [month-year]: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32008R1334>

European Union Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004, Annex II, Accessed [month-year]: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32011R1169>

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Endocrine Disruptor Lists (2022). Last updated Apr-2022: <https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu>

Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS). Accessed [month-year]: https://iris.epa.gov/AtoZ/?list_type=alpha

Flavor and Extract Manufacturers Association of the United States (FEMA). Flavor Ingredient Library, Accessed [month-year]: <https://www.femaflavor.org/flavor-library>

Institute for Occupational Safety and Health of the German Social Accident Insurance (GESTIS) Database. Last updated May 2022: <https://limitvalue.ifa.dguv.de/>

International Agency for Research on Cancer (IARC) list of classifications, Volumes 1-132, Accessed [month-year]: <https://monographs.iarc.who.int/list-of-classifications>

Joint FAO/WHO Expert Committee on Food Additives (JECFA) Portal, Accessed [month-year]: <https://apps.who.int/food-additives-contaminants-jecfa-database/>

National Toxicology Program (NTP). Fifteenth Report on Carcinogens (RoC), last updated 21 December 2021: <https://ntp.niehs.nih.gov/whatwestudy/assessments/cancer/roc/index.html>

United States Food & Drug Administration (US FDA) Substances Added to Food inventory. Last updated 13 October 2022: <https://www.accessdata.fda.gov/scripts/fdcc/?set=FoodSubstances>