Black Pepper Oleoresin (Piper nigrum) – Volatile Oil 2–20%

Piper nigrum · Piperaceae

DOCUMENT	PRODUCT CODE	DOCUMENT NO.	REVISION	PRODUCT FORM
Technical Data Sheet	AP0941	TDS-AP0941	1.0 · 24 October 2026	Oleoresin

1 Product description

Black Pepper extract is produced from the fruit of Piper nigrum (Piperaceae family) and supplied as an oleoresin, standardized to Volatile oil. Available grades: Typical 2–20%. Typical sourcing: India, Vietnam. Intended for B2B formulation in nutraceuticals & supplements, cosmetics & personal care, food & beverage.

2 Identification

Botanical source	*Piper nigrum* (Piperaceae)
Common name(s)	Black pepper
Plant part used	Fruit
Typical origin	India, Vietnam
Marker compound	Volatile oil (Monoterpenes & aromatic volatiles)
Manufacturing process	Extraction with food-grade solvents; solvent removed to JECFA residual-solvent limits
Standardisation	2–20% (Clevenger (volatile oil))
Assay method	Clevenger (volatile oil)
Pharmacopoeia & standards	USP, Ayurvedic Pharmacopoeia of India

3 Specification

PARAMETER	SPECIFICATION	METHOD
Appearance	Viscous liquid to paste; brown to greenish-brown (characteristic)	Visual
Odour	Characteristic	Organoleptic
Identification	Conforms (GC fingerprint vs. reference)	GC / GC-MS
Content – Volatile oil	Not more than 20% (typical 2–20%)	GC
Relative density (20 °C)	Report (lot value on CoA)	ISO 279 / USP ‹841›
Refractive index (20 °C)	Report (lot value on CoA)	ISO 280 / USP ‹831›
Acid value	Report (lot value on CoA)	AOCS Cd 3d-63 / Ph. Eur. 2.5.1
Peroxide value	≤ 10 meq O_2/kg	AOCS Cd 8b-90 / Ph. Eur. 2.5.5
Water (Karl Fischer)	≤ 1.0%	USP ‹921›
Residual solvents	Complies with JECFA limits for oleoresins (e.g. acetone ≤ 30 mg/kg, hexane ≤ 25 mg/kg)	GC-HS
Lead (Pb)	≤ 3.0 mg/kg	ICP-MS
Arsenic (As)	≤ 2.0 mg/kg	ICP-MS
Cadmium (Cd)	≤ 1.0 mg/kg	ICP-MS
Mercury (Hg)	≤ 0.1 mg/kg	ICP-MS
Pesticide residues	Complies with USP ‹561› and Regulation (EC) No 396/2005	GC-MS/MS, LC-MS/MS
Aflatoxins	B1 ≤ 2 µg/kg; sum of B1, B2, G1, G2 ≤ 4 µg/kg	HPLC-FLD

Microbiology	Not applicable (anhydrous product); tested on request	—

Limits above are the standard release specification for this product class. Each lot is released against its Certificate of Analysis, which is the governing document and is available on request.

4 Grades & pack sizes

GRADE	SKU PREFIX	PACK SIZES
Typical 2–20%	AP0941-T220	Sample (50 g) · 250 g · 1 Kg · 5 Kg · 25 Kg

5 Packaging

- Samples: amber glass bottle with tamper-evident closure.
- Up to 1 Kg: nitrogen-flushed amber glass, aluminium or HDPE bottle.
- 5 Kg and above: HDPE jerrycan or lacquered steel drum.
- Packaging may vary by lot and is stated on the packing list.

6 Storage & shelf life

- Shelf life: 24 months from date of manufacture in the original, unopened packaging.
- Store tightly closed below 25 °C, protected from light and heat.
- After opening, blanket with nitrogen and use promptly to limit oxidation.

7 Applications

Industries	Nutraceuticals & Supplements, Cosmetics & Personal Care, Food & Beverage
Formulation focus	Flavour & Fragrance, Digestive & Gut Health
Traditional systems	Ayurveda

Use levels depend on the finished product and the target market. The customer is responsible for establishing safe and permitted use levels and for any claims made on finished products.

8 Regulatory & compliance

- Pharmacopoeia / standard references: USP, Ayurvedic Pharmacopoeia of India.
- Allergen information: not derived from a source listed in Annex II of Regulation (EU) No 1169/2011.
- Regulatory status for food, supplement, cosmetic or pharmaceutical use (e.g. EU novel food, US NDI/GRAS, FSSAI) must be confirmed by the customer for the intended market and use.

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