Fennel Oleoresin (Foeniculum vulgare) – Volatile Oil 10–20%

Foeniculum vulgare · Apiaceae

DOCUMENT	PRODUCT CODE	DOCUMENT NO.	REVISION	PRODUCT FORM
Technical Data Sheet	AP0495	TDS-AP0495	1.0 · 24 October 2026	Oleoresin

1 Product description

Fennel extract is produced from the fruit of Foeniculum vulgare (Apiaceae family) and supplied as an oleoresin, standardized to Volatile oil. Available grades: Typical 10–20%. Typical sourcing: Egypt, India. Intended for B2B formulation in nutraceuticals & supplements, cosmetics & personal care, food & beverage.

2 Identification

Botanical source	*Foeniculum vulgare* (Apiaceae)
Common name(s)	Fennel
Plant part used	Fruit
Typical origin	Egypt, India
Marker compound	Volatile oil (Monoterpenes & aromatic volatiles)
Manufacturing process	Extraction with food-grade solvents; solvent removed to JECFA residual-solvent limits
Standardisation	10–20% (HPLC)
Assay method	HPLC
Pharmacopoeia & standards	Ph. Eur. (EP), EMA herbal monograph, ESCOP monograph, WHO monograph

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 10–20%)	GC
Anethole content	Not more than 60% (basis of the SDS classification)	GC-MS
Estragole content	Not more than 5% (basis of the SDS classification)	GC-MS
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 10–20%	AP0495-T1020	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	European herbal tradition

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: Ph. Eur. (EP), EMA herbal monograph, ESCOP monograph, WHO monograph.
- **EU flavourings:** Estragole must not be added as such to food; maximum levels apply in foods containing flavourings or food ingredients with flavouring properties (Regulation (EC) No 1334/2008, Annex III).
- 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.

This Technical Data Sheet is issued by CHOLAD PRIVATE LIMITED (trading as Extrakte), C 22/4, 2nd & 3rd Floor, Sector-57, Noida-201301, Uttar Pradesh, India · +91 817 8117 600 · choladco@gmail.com · extrakte.com. The information is given in good faith and reflects our current knowledge of the product; it does not constitute a warranty of properties for any specific application. Refer to the Safety Data Sheet **SDS-AP0495** for hazard, handling and transport information. Certificates of Analysis are issued per lot and are available on request.