



VIRGIN COCONUT OIL

Virgin coconut oil is obtained from the fresh, mature kernel of *Cocos nucifera* L. by cold pressing and purely mechanical means, without chemical refining, bleaching or deodorising. Produced from premium fresh Sri Lankan coconuts, it is water-clear when melted, white and solid below about 25 °C, and retains the characteristic fresh coconut aroma and taste. Its high lauric acid content and low free fatty acid level make it suitable for direct consumption and for demanding food, cosmetic and pharmaceutical formulations.

APPLICATIONS

Bakery and confectionery, cocoa-butter alternatives, coatings and fillings, dairy blends, spreads and margarines, ice cream and ice-cream coatings and specialty fat formulations.	Direct culinary use and functional nutrition, and cosmetic and pharmaceutical products where an unrefined, cold-pressed oil with a natural coconut profile is required.
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ORGANIC COLD-PRESSED VIRGIN COCONUT OIL · UNREFINED

Specification:

IDENTITY, PHYSICAL AND CHEMICAL CHARACTERISTICS

ITEM OF TEST	TEST RESULTS	METHOD / REFERENCE
APPEARANCE	Water-clear liquid when melted, free from sediment and foreign matter; white solid below 25 °C	Visual; PNS/PCA 2021-10/02, cl. 5
COLOUR	Colourless (water-clear)	Visual; PNS/PCA 2021-10/02
ODOUR, TASTE	Characteristic fresh coconut aroma and flavour (nutty, acid or latik notes); free from foreign and rancid odour and taste	Organoleptic; PNS/PCA 2021-10/02; Codex CXS 210-1999, cl. 3.2
BOTANICAL ORIGIN, production method	Fresh kernel of <i>Cocos nucifera</i> L.; cold-pressed by mechanical means only, unrefined, unbleached, undeodorised	Codex CXS 210-1999, cl. 2.1 and 2.2 (cold-pressed oils)
FATTY ACID COMPOSITION, % of total fatty acids	C6:0 nd – 1.0; C8:0 3.2 – 10.0; C10:0 3.5 – 8.0; C12:0 45.0 – 56.0; C14:0 16.0 – 22.3; C16:0 7.5 – 11.4; C18:0 2.0 – 5.0; C18:1 4.8 – 10.0; C18:2 0.5 – 2.5; C18:3 nd – 0.2; ≥ C20 nd – 0.1	ISO 12966-4 (GLC); PNS/PCA 2021-10/02, Table 2
RELATIVE DENSITY, 40 °C / water at 20 °C	0.908 – 0.921	IUPAC 2.101; Codex CXS 210-1999, Table 2
REFRACTIVE INDEX, n_D 40 °C	1.448 – 1.450	ISO 6320; Codex CXS 210-1999, Table 2
IODINE VALUE	6.3 – 10.6 g I ₂ /100 g	ISO 3961 (Wijs); Codex CXS 210-1999 (PNS/PCA VCO: 4.0 – 12.0)
SAPONIFICATION VALUE	248 – 265 mg KOH/g oil	ISO 3657; Codex CXS 210-1999, Table 2
UNSAPONIFIABLE MATTER, max.	0.60 %	ISO 3596; PNS/PCA 2021-10/02 (Codex CXS 210-1999 max. 15 g/kg)
MOISTURE AND VOLATILE MATTER, max.	0.10 %	ISO 662; PNS/PCA 2021-10/02 (AOAC 984.20, Karl Fischer)
INSOLUBLE IMPURITIES, max.	0.05 %	ISO 663; PNS/PCA 2021-10/02; Codex CXS 210-1999, Appendix
FREE FATTY ACIDS, as lauric acid, max.	0.20 %	AOCS Ca 5a-40; PNS/PCA 2021-10/02
ACID VALUE, max.	4.0 mg KOH/g oil	ISO 660; Codex CXS 210-1999, Appendix (cold-pressed and virgin oils)
PEROXIDE VALUE, max.	3.0 meq O ₂ /kg	ISO 3960; PNS/PCA 2021-10/02 (Codex CXS 210-1999 virgin oils: 15 meq O ₂ /kg)

Virgin coconut oil quality parameters follow the Philippine National Standard for virgin coconut oil PNS/PCA 2021-10/02, whose moisture, free fatty acid and peroxide value limits are tighter than the general provisions for cold-pressed and virgin oils in the Codex Standard for Named Vegetable Oils CXS 210-1999; the fatty acid ranges also satisfy the Codex ranges for coconut oil (Table 1). Batch results are reported in the certificate of analysis.

RESIDUE LIMITS

ITEM OF TEST	TEST RESULTS	METHOD / REFERENCE
LEAD (Pb), max.	0.1 mg/kg	Reg. (EU) 2023/915 (fats and oils, 0.10 mg/kg)
ARSENIC (As), max.	0.1 mg/kg	PNS/PCA 2021-10/02; AAS / ICP-MS
CADMIUM (Cd), max.	0.05 mg/kg	BB Chemicals specification; AAS / ICP-MS
MERCURY (Hg), max.	0.03 mg/kg	BB Chemicals specification; cold vapour AAS
HEXACHLOROCYCLOHEXANE (α-, β-, γ-HCH), max.	0.2 mg/kg	BB Chemicals specification; GC-MS
DDT AND ITS METABOLITES, max.	0.2 mg/kg	BB Chemicals specification; GC-MS
OTHER PESTICIDE RESIDUES	Within the maximum residue levels of Reg. (EC) No 396/2005 for the country of destination	Reg. (EC) No 396/2005; GC-MS / LC-MS/MS on request
AFLATOXIN B ₁ , max.	0.005 mg/kg	BB Chemicals specification; HPLC
BENZO[A]PYRENE, max.	0.002 mg/kg	BB Chemicals specification; HPLC-FLD / GC-MS
3-MCPD ESTERS / GLYCIDYL ESTERS	Not formed in unrefined cold-pressed oil; EU maximum levels of 1,250 / 1,000 µg/kg observed	Reg. (EU) 2023/915, Annex I, 4.1 and 4.2 (coconut oil in scope); GC-MS
CAESIUM-137, max.	On request	Gamma spectrometry, on customer request
STRONTIUM-90, max.	On request	Beta spectrometry, on customer request

The lead limit and the provisions on 3-MCPD esters and glycidyl esters follow Regulation (EU) 2023/915, which covers oils and fats from coconut; the remaining toxic element, pesticide, aflatoxin and benzo[a]pyrene limits are BB Chemicals specification values. Batch results are reported in the certificate of analysis.

MICROBIOLOGICAL CHARACTERISTICS

ITEM OF TEST	TEST RESULTS	METHOD / REFERENCE
AEROBIC PLATE COUNT, max.	100 CFU/g	PNS/PCA 2021-10/02, Table 5; ISO 4833-1
YEASTS AND MOULDS IN TOTAL, max.	10 CFU/g	PNS/PCA 2021-10/02, Table 5; ISO 21527-2
COLIFORM BACTERIA	< 10 CFU/g (< 3.0 MPN/g)	PNS/PCA 2021-10/02, Table 5; ISO 4832 / ISO 4831
Escherichia coli	< 10 CFU/g (< 3.0 MPN/g)	PNS/PCA 2021-10/02, Table 5; ISO 7251
Salmonella spp.	Absent in 25 g	PNS/PCA 2021-10/02, Table 5; ISO 6579-1

Limits follow the microbiological table of the Philippine National Standard for virgin coconut oil PNS/PCA 2021-10/02 (values per weight or volume equivalent); Regulation (EC) No 2073/2005 sets no microbiological criteria for vegetable oils. Sample preparation according to ISO 6887-4.

Botanical name: Cocos nucifera L.

CN / HS code: 1513 11 (crude coconut oil); refined and other coconut oil and fractions 1513 19

Regulatory status: edible virgin vegetable oil under Codex CXS 210-1999 and PNS/PCA 2021-10/02; no food additives permitted

Appearance: water-clear when melted, white solid below 25 °C, characteristic coconut odour

Processing: cold pressing of fresh kernel, purified only by settling, filtration and centrifuging; not refined, not irradiated

Applications: bakery and confectionery, cocoa-butter alternatives, coatings and fillings, dairy blends, spreads and margarines, ice cream, culinary use, cosmetics and pharmaceuticals

Packaging: cartons with a 20 kg liner bag; steel or plastic drums 190 – 200 kg net; IBCs up to 1,000 kg

Storage & transport: closed original containers in dry, clean premises at max. +25 °C, protected from sunlight, heat and odours; avoid repeated melting and solidification

Shelf life: as agreed per order and confirmed for each consignment in the certificate of analysis

COMPLIANCE & DOCUMENTATION

- The product meets the definition of a cold-pressed virgin oil in the Codex Standard for Named Vegetable Oils CXS 210-1999 and the requirements of the Philippine National Standard for virgin coconut oil PNS/PCA 2021-10/02.
- The maximum levels of Regulation (EU) 2023/915 applicable to coconut oil are observed, as are the hygiene requirements of Regulation (EC) No 852/2004 on the hygiene of foodstuffs.
- The oil is not refined, bleached or deodorised and contains no food additives, antioxidants or processing aids; it is neither hydrogenated nor chemically modified.
- Non-GMO within the meaning of Regulations (EC) No 1829/2003 and (EC) No 1830/2003; not irradiated.
- Coconut is not listed as an allergen in Annex II to Regulation (EU) No 1169/2011; for consignments destined for the United States, coconut must be declared as a tree nut on the final label.
- Organic certification under Regulation (EU) 2018/848, kosher and halal statements and third-party audit certificates of the producing mill are available on request.
- Each consignment is accompanied by a certificate of analysis with batch-specific results.

References: Codex Standard for Named Vegetable Oils CXS 210-1999, fao.org; PNS/PCA 2021-10/02 “Virgin coconut oil for human consumption — Specification”, fda.gov.ph; Codex Standard for Edible Fats and Oils CXS 19-1981, fao.org; Commission Regulation (EU) 2023/915, eur-lex.europa.eu.

This specification is issued for information purposes and does not constitute a warranty. Batch-specific values are confirmed in the certificate of analysis accompanying each consignment.