

PRODUCT IDENTIFICATION



Product Name: 100% Pure Castor Oil

CAS Number: 8001-79-4

Molecular Formula: $C_{18}H_{34}O_2$

Molecular Weight: 282.47 g/mol

Grade: Technical

Purity / Concentration: 100%

Synonyms: Ricinus Communis Oil, Castor Seed Oil

PRODUCT OVERVIEW

Alliance Chemical offers 100% pure technical grade Castor Oil, a highly viscous, pale yellow liquid derived from Ricinus communis. With a high assay of 99.8% and a low color profile of 4 APHA, this product provides consistent quality for industrial and formulation needs.

Grade Significance: Technical grade indicates that this product is manufactured for industrial and manufacturing applications where high purity is required, though it is not intended for direct food or pharmaceutical consumption.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	99.8	99	100.5	Titration with standardized NaOH
Color (APHA)	APHA	4	—	8	APHA/Hazen visual comparison
Specific Gravity (20°C)	g/mL	0.963	0.959	0.97	Pycnometer or densitometer at 20°C
Residue After Ignition	%	0.05	—	0.1	Gravimetric residue after ignition at 550°C
Water Content	%	0.2	—	0.5	Karl Fischer titration
Aluminum (Al)	ppm	0.1	—	0.5	ICP-OES
Arsenic (As)	ppm	0.1	—	0.3	ICP-OES or ICP-MS
Calcium (Ca)	ppm	0.5	—	1	ICP-OES
Chromium (Cr)	ppm	0.1	—	0.5	ICP-OES
Cobalt (Co)	ppm	0.05	—	0.2	ICP-OES
Copper (Cu)	ppm	0.1	—	0.5	ICP-OES
Heavy Metals (as Pb)	ppm	0.2	—	0.7	ICP-OES or ICP-MS
Iron (Fe)	ppm	0.05	—	0.2	ICP-OES
Lead (Pb)	ppm	0.1	—	0.5	ICP-OES
Magnesium (Mg)	ppm	0.5	—	1	ICP-OES
Manganese (Mn)	ppm	0.1	—	0.5	ICP-OES
Nickel (Ni)	ppm	0.1	—	0.5	ICP-OES
Potassium (K)	ppm	0.5	—	2	ICP-OES
Sodium (Na)	ppm	0.5	—	2	ICP-OES
Zinc (Zn)	ppm	0.2	—	1	ICP-OES
Ammonium (NH ₄ ⁺)	ppm	1	—	2	Ion chromatography
Chloride (Cl ⁻)	ppm	1	—	3	Ion chromatography
Nitrate (NO ₃ ⁻)	ppm	2	—	5	Ion chromatography
Phosphate (PO ₄ ³⁻)	ppm	2	—	5	Ion chromatography
Sulfate (SO ₄ ²⁻)	ppm	10	—	20	Ion chromatography

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Pale yellow viscous liquid, translucent smooth	Odor	Mild, characteristic odor
Form	Liquid	Boiling Point	313°C (595.4°F)
Melting / Freezing Point	-18°C (-0.4°F)	Flash Point	246°C (474.8°F)
Solubility	Organic solvent soluble, water insoluble	Molecular Formula	C ₁₈ H ₃₄ O ₂
Molecular Weight	282.47 g/mol	Vapor Pressure (20°C)	0.01 mmHg
Viscosity (25°C)	900-1000 cP	Refractive Index (20°C)	1.465
Density (25°C)	0.961 g/mL		

APPLICATIONS

1. **Personal Care** — Functions as a high-quality emollient and moisturizer in skin and hair care formulations, providing deep hydration and a smooth texture.
2. **Industrial Lubrication** — Utilized as a high-viscosity lubricant for machinery and equipment, offering reliable performance under demanding mechanical conditions.
3. **Polymer Manufacturing** — Acts as an effective plasticizer in the production of flexible plastics, enhancing the durability and pliability of the final material.
4. **Pharmaceuticals** — Serves as a stable carrier for drug formulations and is widely used in the manufacturing of softgel capsules.

STORAGE & HANDLING

Castor oil should be stored in a cool, dry, and well-ventilated area away from strong oxidizing agents to maintain its chemical integrity. Proper sealing prevents contamination and moisture absorption, ensuring the oil remains stable and effective for its intended industrial application.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to avoid chemical interaction.
- Keep away from strong oxidizing agents and acids.
- Ensure proper ventilation when handling to avoid inhalation of vapors.
- Wear appropriate personal protective equipment (PPE) such as gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Not Classified

No GHS pictograms assigned.

Hazard Statements:

- Not Classified: Not classified as hazardous under GHS based on available data.

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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