

PRODUCT IDENTIFICATION



Product Name: 100% Pure Castor Oil ACS Grade

CAS Number: 8001-79-4

Molecular Formula: $C_{18}H_{34}O_3$

Molecular Weight: 298.46 g/mol

Grade: ACS Grade

Purity / Concentration: 100%

Synonyms: Ricinus Communis Oil, Castor Bean Oil

PRODUCT OVERVIEW

Alliance Chemical offers high-quality 100% Pure Castor Oil in ACS Grade, characterized by its consistent chemical profile and a low APHA color value of 2. This viscous, pale yellow liquid is widely valued for its exceptional stability and performance in demanding industrial, cosmetic, and pharmaceutical applications.

Grade Significance: ACS Grade signifies that this product meets the rigorous purity standards set by the American Chemical Society, ensuring high consistency and reliability for sensitive laboratory and industrial processes.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Color (APHA/Hazen)	APHA	2	—	3	Spectrophotometry
Color Lovibond 5	Y/R	8.24	—	20	AOCS Cc 13e-92
Refractive Index 20C	—	1.478	1.473	1.477	Refractometry
Specific Gravity (25°C)	g/mL	0.96	0.959	0.963	IS: 548
Viscosity 25C	cP	7.08	6.3	8.9	Brookfield
Moisture	%	0.15	0	0.25	Karl Fischer
Non-Volatile Residue	%	0.36	0	0.7	Gravimetric
Acid Value	mg KOH/g	1.15	0	2	Titration
Free Acid	%	0.59	0	1	Titration
Hydroxyl Value	mg KOH/g	163.5	160.0	168.0	USP 44 <401>
Insolubles	%	0.01	0	0.02	Filtration
Iodine Value	g I2/100g	88.3	82	90	Wijs
Peroxide Value	meq/kg	3.07	—	5	USP 44 <401>
Ricinoleic Acid	%	85.27	85	92	GC
Saponification Value	mg KOH/g	178.8	176.0	185.0	Titration

Values based on 2 batches tested. ND = Not Detected.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Pale yellow viscous	Odor	Mild, characteristic odor
Form	Liquid	Boiling Point	313°C (595.4°F)
Melting / Freezing Point	-10°C (14°F)	Flash Point	254°C (489.2°F)
Specific Gravity	0.961	Solubility	Insoluble in water
Molecular Formula	C ₁₈ H ₃₄ O ₃	Molecular Weight	298.46 g/mol
Vapor Pressure (20°C)	0.01 mmHg	Viscosity (25°C)	800-1000 cP
Refractive Index (20°C)	1.460	Density (25°C)	0.961 g/mL

APPLICATIONS

- 1. Industrial Lubricants** — Utilized as a high-performance lubricant for machinery and equipment due to its superior viscosity and thermal stability.
- 2. Cosmetics and Personal Care** — Widely incorporated into skin care formulations for its natural moisturizing properties and ability to soothe dry skin.
- 3. Pharmaceuticals** — Serves as a reliable carrier for active ingredients, ensuring consistent delivery and stability in various medical formulations.
- 4. Biofuel Production** — Acts as a key feedstock for biodiesel production, favored for its high oil content and favorable chemical composition.

STORAGE & HANDLING

Proper storage is essential to prevent oxidative degradation, which can increase the peroxide value and negatively impact the oil's purity. Store in a cool, dry, well-ventilated area away from direct sunlight to maintain the integrity of the chemical properties and ensure shelf-life stability.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent contamination.
- Avoid contact with strong oxidizing agents.
- Maintain temperature below 25°C to ensure stability.
- Use appropriate personal protective equipment (PPE) when handling.

AVAILABLE PACKAGING

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

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **WARNING**

No GHS pictograms assigned.

Hazard Statements:

- 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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