

TECHNICAL DATA SHEET

100% USP Grade Pure Castor Oil

USP Grade · 100%

CAS NUMBER	ALLIANCE CODE	GENERATED
8001-79-4	100-usp-pure-castor-oil	2026-08-31
REVISION	REVIEWED	
1.1	2026-06-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
100% USP Grade Pure Castor Oil	100-usp-pure-castor-oil
GRADE	CONCENTRATION
USP Grade	100%
CAS NUMBER	FORMULA
8001-79-4 Adjudicated	C18H34O3 Alliance SDS
MOLECULAR WEIGHT	PRODUCT TYPE
298.46 g/mol Alliance SDS	solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (triglyceride of ricinoleic acid)	NLT 90.0%	100.0 %	USP <401> / GC of fatty acid methyl esters	USP monograph
Acid Value	NMT 2.0	0.35	USP <401> Fats and Fixed Oils, Procedures, Acid Value	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Composition of fatty acids — Ricinoleic acid	85.0–92.0	88.5	GC, USP Fats and Fixed Oils <401>	USP monograph
Distinction from most other fixed oils	It is only partly soluble in solvent hexane (distinction from most other fixed oils), but it yields a clear liquid with an equal volume of alcohol (foreign fixed oils).	Passes test	Solubility in solvent hexane / alcohol	USP monograph
Heavy Metals, Method II	0.001% max	0.0001 %	USP	USP monograph
Hydroxyl Value	160–168	164	USP <401> Fats and Fixed Oils, Procedures, Hydroxyl Value	USP monograph
Lead	Not more than 0.1 mg/kg	0.01 mg/kg	FCC lead limit test / ICP-MS	FCC
Peroxide Value	NMT 10.0	1.2	USP <401> Fats and Fixed Oils, Procedures, Peroxide Value	USP monograph
Unsaponifiable Matter	NMT 0.8%	0.35 %	USP <401> Fats and Fixed Oils, Procedures, Unsaponifiable Matter	USP monograph
Water	NMT 0.3%	0.08 %	USP <921>	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Free Fatty Acids	NMT 3.5 mL of 0.10 N sodium hydroxide per 10 g (≈1.0% max as oleic)	Passes test	USP	USP monograph
Iodine Value	83 – 88	85.5	USP	USP monograph
Saponification Value	176 – 182	179	USP	USP monograph
acid_value	2 mg KOH/g max	0.35	—	Supplier specification
arsenic as as	1.5 ppm max	0.03 ppm	—	Supplier specification
cadmium as cd	0.5 ppm max	0.005 ppm	—	Supplier specification
cis-11-eicosenoic acid	1 % max	0.3 %	—	Supplier specification
identification of castor oil by ultraviolet absorption	0.7 – 1.5 Abs	1.1	—	Supplier specification
linoleic acid	2.5 – 7 %	4.75 %	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
linolenic acid	1 % max	0.4 %	—	Supplier specification
mercury as hg	3 ppm max	0.002 ppm	—	Supplier specification
n-hexane	290 ppm max	1 ppm	—	Supplier specification
oleic acid	2.5 – 6 %	4.25 %	—	Supplier specification
other unidentified fatty acid	1 % max	0.2 %	—	Supplier specification
palmitic acid	2 % max	1.0 %	—	Supplier specification
peroxide_value	5 meq/kg max	1.2	—	Supplier specification
stearic acid	2.5 % max	1.0 %	—	Supplier specification

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE USP Grade	100%	—	current
ACS Grade	100%	—	100-pure-castor-oil-acs-grade
Technical	100%	—	100-pure-castor-oil

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Pale yellow viscous liquid, translucent smooth	Published reference
Form	Liquid	Published reference
Color	NMT 2	Interpreted
Specific Gravity (20 °C)	0.957 – 0.961	USP monograph
Boiling Point	313	Published reference
Melting Point	–18	Published reference
Flash Point	246	Published reference
Solubility (water)	Organic solvent soluble, water insoluble	Published reference
Refractive Index (nD 20)	1.477 – 1.481	Supplier specification

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
HDPE	Compatible	—	novaind.in
Steel	Compatible	—	novaind.in
Mild steel (MS drums)	Compatible	—	biapur.ru

Compatibility is drawn from published manufacturer and supplier documentation for this product; each rating is sourced. Confirm against your specific duty cycle before equipment selection.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated [Adjudicated](#)

PACKING GROUP

Not regulated [Adjudicated](#)

HAZARD CLASS

Not regulated [Adjudicated](#)

PROPER SHIPPING NAME

Not regulated [Adjudicated](#)

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Not regulated [Adjudicated](#)

H-CODES (HAZARD STATEMENTS)

— [no canonical](#)

P-CODES (PRECAUTIONARY STATEMENTS)

— [no canonical](#)

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— [no canonical](#)

ACGIH TLV

— [no canonical](#)

NIOSH REL

— [no canonical](#)

NIOSH IDLH

— [no canonical](#)

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

APPLICATIONS

Pharmacopoeial castor oil is used as a stimulant laxative and emollient mubychem.com

USP Castor Oil may be used in the manufacture of injectable dosage forms when so labeled

trungtamthuoc.com

Industrial raw material for manufacture of castor oil derivatives (HCO, 12-HSA, ricinoleic acid) and for leather, textile, resin, paint and cosmetic manufacture

biapur.ru

Chemical precursor for derivatives such as sebacic acid and 12-hydroxystearic acid novaind.in

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Preserve in tight containers, and avoid exposure to excessive heat (USP monograph packaging and storage)

pharmacopeia.cn

INCOMPATIBILITIES

Consult the SDS for material-specific incompatibilities.

Class-level guidance — not product-specific; the SDS controls.

HANDLING PRECAUTIONS

Use standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

12 months acme-hardesty.com

From date of manufacture, kept at ambient temperatures, unopened

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

Not regulated for transport.

Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS
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REVISION HISTORY

Last reviewed 2026-06-17 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-06-17	Canonical data re-verified: 4 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). - casNumber · canonical adjudication / reground (coa.data_provenance) - countryOfOrigin · canonical adjudication / reground (coa.data_provenance) - dotSubsidiaryHazardClass · canonical adjudication / reground (coa.data_provenance) - hsCode · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.