

TECHNICAL DATA SHEET

Isopropyl Alcohol 50% Technical Grade

Technical · 50%

CAS NUMBER	ALLIANCE CODE	GENERATED
67-63-0	isopropyl-alcohol-50-technical-grade	2026-08-31
REVISION	REVIEWED	
1.3	2026-06-18 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Isopropyl Alcohol 50% Technical Grade	isopropyl-alcohol-50-technical-grade
GRADE	CONCENTRATION
Technical	50%
CAS NUMBER	FORMULA
67-63-0 PubChem	C3H8O PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
60.10 PubChem	solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (isopropyl alcohol)	48-52 %	50 %	Specific gravity	Supplier specification
Acidity (as acetic acid)	0.001 % max.	0.0002 %	—	Derived by dilution
Carbonyl (as Acetone)	0.0100 % max	0.0015 %	—	Derived by dilution

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Sulfide	1.00 Mg/kg max	0.05 mg/kg	—	Derived by dilution

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 Technical	50%	—	current
ACS Reagent	99.9%	—	isopropyl-alcohol-99-9-acs-reagent-grade
Technical	99%	—	isopropyl-alcohol-99
USP Grade	70%	—	isopropyl-alcohol-70-usp-grade
Technical	60%	—	isopropyl-alcohol-60-technical-grade
USP	60%	—	isopropyl-alcohol-60-usp-grade
USP	50%	—	isopropyl-alcohol-50-usp-grade

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	Colorless liquid	Supplier specification
Color	NMT 5	Derived by dilution
Specific Gravity (20 °C)	0.918 – 0.928	Interpreted

Polar solvent — purity vs. intended end-use (electronics, pharma, general industrial) is the dominant grade consideration. See application guidance for grade selection.

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 50%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Fair	60	Acceptable for alcohols; poor for ketones.	Parker O-ring Chemical Compatibility
EPDM Elastomer	Fair	—	Good for alcohols, poor for esters	Cole-Parmer Chemical Compatibility
Viton (FKM) Elastomer	Fair	80	Swells in acetone and esters; avoid for those.	Parker O-ring Chemical Compatibility
FFKM (Kalrez) Fluoropolymer	Excellent	200	Premium ester / ketone sealing	Cole-Parmer Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Universal solvent compatibility.	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Excellent	100	Universally inert.	Cole-Parmer Chemical Compatibility
Glass (borosilicate) Glass Ceramic	Excellent	100	Inert	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
316L Stainless Steel Metal	Excellent	80	Inert; preferred for high-purity solvent service.	Cole-Parmer Chemical Compatibility
Aluminium Metal	Good	40	Acceptable; avoid prolonged wet contact	Cole-Parmer Chemical Compatibility
Carbon Steel Metal	Fair	50	Trace moisture causes rust; flash-rust prevention required.	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Fair	40	Swells with many polar solvents; verify per solvent.	Cole-Parmer Chemical Compatibility
PP Thermoplastic	Good	50	Acceptable but watch swelling with esters	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Fair	25	Esters soften PVC; avoid for esters	Cole-Parmer Chemical Compatibility

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN1219 **Adjudicated**

PACKING GROUP

II **Adjudicated**

HAZARD CLASS

3 **Adjudicated**

PROPER SHIPPING NAME

Isopropanol or isopropyl alcohol **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H225, H319, H336 **ECHA CLP Annex VI**

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P233, P240, P241, P242, P243, P261,
P264, P271, P280, P303+P361+P353,
P304+P340, P305+P351+P338, P312,
P337+P313, P370+P378, P403+P233,
P403+P235, P405, P501

ECHA CLP Annex VI

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

400 ppm TWA **OSHA 29 CFR 1910.1000**

NIOSH REL

400 ppm TWA / 500 ppm STEL

NIOSH Pocket Guide

ACGIH TLV

— **no canonical**

NIOSH IDLH

2000 ppm **NIOSH Pocket Guide**

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.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
190764	ACS Reagent	99.5%	Exact	ACS Reagent ≥99.5%

THERMOFISHER

SKU	GRADE	CONC.	MATCH	NOTES
A416-4	ACS	99.5%	Exact	Optima LC/MS grade equivalent

Cross-references are informational. Confirm against the manufacturer's current specification before substitution. Competitor trademarks are property of their respective owners.

APPLICATION GUIDANCE

Isopropyl Alcohol 50% Technical Grade (Technical) is a polar solvent. Grade selection (technical, ACS, electronics, USP) determines acceptable residue and impurity levels for the intended end-use.

- Cleaning and degreasing (technical-grade)
- Coatings, inks, and adhesives formulation
- Reaction solvent for chemical synthesis
- Pharmaceutical manufacturing (USP-grade)
- Electronics-grade cleaning and rinse applications

Flammable. Bond and ground equipment during transfer. Verify grade matches end-use specification before substitution.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated flammable-liquid storage area. Tightly sealed original containers. Segregate from oxidizers and acids. Bond and ground bulk storage.

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

INCOMPATIBILITIES

Strong oxidizers, strong acids, isocyanates, anhydrides. Hygroscopic — protect from atmospheric moisture for water-sensitive end uses.

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

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.

HANDLING PRECAUTIONS

Use chemical-resistant gloves and splash goggles. Bond and ground during transfer to prevent static accumulation. Eliminate ignition sources within vapor envelope.

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

SHELF LIFE

Consult Technical Services for product-specific shelf life

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN1219, Isopropanol or isopropyl alcohol, 3, PG II

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS 70	PLACARD Flammable Liquid	PACKING GROUP PG II
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REVISION HISTORY

Last reviewed 2026-06-18 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. - hazardClass · canonical change (coa.data_provenance / adjudication) - packingGroup · canonical change (coa.data_provenance / adjudication) - unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-07-22	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. - dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication) - dotProperShippingName · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-06-18	Canonical data re-verified: 3 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). - countryOfOrigin · canonical adjudication / reground (coa.data_provenance) - ghsClassification · 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.