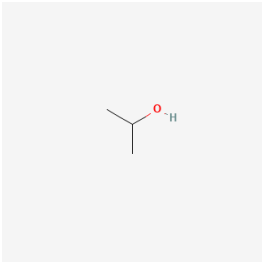
Technical Data Sheet

# Isopropyl Alcohol 60% USP Grade

USP · 60%

| Alliance Code | Revised | Revision |
|---|---|---|
| isopropyl-alcohol-60-usp-grade | 2026-10-20 | 1.10 |

| | | |
|---|---|---|
| CAS number<br>67-63-0 | UN number<br>UN1219 | Hazard class · packing group<br>3 · PG II |
| <br>Structure · PubChem | Grade<br>USP · 60% | Signal word<br>**Danger** |
| Hazards<br>Flammable · Irritant / harmful · H225 H319 H336 | | |
| Proper shipping name<br>Isopropanol or isopropyl alcohol | | |

## IDENTITY & COMPOSITION

PRODUCT NAME
Isopropyl Alcohol 60% USP Grade

ALLIANCE CODE
isopropyl-alcohol-60-usp-grade

GRADE
USP

CONCENTRATION
60% v/v

CAS NUMBER
67-63-0 PubChem

FORMULA
C3H8O PubChem

MOLECULAR WEIGHT
60.10 PubChem

PRODUCT TYPE
Solution

## SPECIFICATIONS

| TEST | SPECIFICATION | TYPICAL | METHOD | SOURCE |
|---|---|---|---|---|
| Assay (isopropyl alcohol) | 58-62 % v/v | — | Specific gravity | Interpreted |
| Color APHA | 5 max | — | — | Interpreted |
| Water (v/v) | 38 – 42 % v/v | — | — | Interpreted |
| Limit of Non-Volatile Residue | 0.01% max | — | — | Interpreted |
| Acidity | NMT 0.42 mL of 0.020 N sodium hydroxide | — | Titration with 0.020 N sodium hydroxide, 50 mL sample | Interpreted |
| Each other individual known impurity (ethyl ether, acetone, diisopropyl ether, 1-propanol, 2-butanol) | 0.059 % max | — | Gas chromatography | Interpreted |
| Methanol | 0.012 % max | — | Gas chromatography | Interpreted |
| Total organic impurities | 0.59 % max | — | Gas chromatography | Interpreted |
| Titrable Base | 0.000053 meq/g max | — | — | Interpreted |
| Carbonyl compounds (as acetone) | 0.0011 % max | — | — | Interpreted |
| Composition | 60 % isopropyl alcohol by volume of finished solution, in deionized water | — | By formulation; batch weights (scale ticket) | Interpreted |

Values are reproduced from the current product reference. Source labels do not by themselves establish a supplier guarantee or a test result for your lot. Confirm applicable acceptance limits and request lot-specific documentation.

## AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

| GRADE | CONCENTRATION | TYPICAL ASSAY | SKU |
|---|---|---|---|
| THIS GRADE USP | 60% | — | current |
| ACS Reagent | 99.9% | — | isopropyl-alcohol-99-9-acs-reagent-grade |
| Technical | 99% | — | isopropyl-alcohol-99 |
| USP Grade | 91% | — | isopropyl-alcohol-91 |
| USP Grade | 70% | — | isopropyl-alcohol-70-usp-grade |
| Technical | 60% | — | isopropyl-alcohol-60-technical-grade |
| Technical | 50% | — | isopropyl-alcohol-50-technical-grade |
| USP | 50% | — | isopropyl-alcohol-50-usp-grade |

Typical assay for each grade is the average of its recent lots. Confirm a grade meets your specification before substituting it.

## PHYSICAL & CHEMICAL PROPERTIES

| PROPERTY | VALUE | SOURCE |
|---|---|---|
| Appearance | Clear, colorless liquid with alcohol odor | Adjudicated |
| Odor | Alcohol-like odor | Adjudicated |
| Specific Gravity | 0.898 at 20/20 °C (water = 1) | Adjudicated |
| Density | 0.8968 g/cm$^3$ at 20 °C | Adjudicated |
| Boiling Point | 82–100 °C (180–212 °F) boiling range | Adjudicated |
| Flash Point | About 12 °C (53 °F), closed cup | Adjudicated |
| Vapor Density | 2.1 (air = 1) | Adjudicated |
| Solubility (water) | Completely miscible with water | Adjudicated |

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 ≈ 60%

| 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 |

| MATERIAL | RATING | MAX T (°C) | NOTES | SOURCE |
|---|---|---|---|---|
| Borosilicate Glass<br>Glass Ceramic | Excellent | 100 | Universally inert. | Cole-Parmer Chemical Compatibility |
| 316L Stainless Steel<br>Metal | Excellent | 80 | Inert; preferred for high-purity solvent service. | Cole-Parmer Chemical Compatibility |
| Aluminium<br>Metal | Good | 40 | Acceptable; avoid prolonged wet contact | Cole-Parmer Chemical Compatibility |
| Carbon Steel<br>Metal | Fair | 50 | Trace moisture causes rust; flash-rust prevention required. | Cole-Parmer Chemical Compatibility |
| HDPE<br>Thermoplastic | Fair | 40 | Swells with many polar solvents; verify per solvent. | Cole-Parmer Chemical Compatibility |
| PP<br>Thermoplastic | Good | 50 | Acceptable but watch swelling with esters | Cole-Parmer Chemical Compatibility |
| PVC<br>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

HAZARD CLASS

3 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Isopropanol or isopropyl alcohol Adjudicated

### GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H225, H319, H336 ECHA C&L Inventory

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 C&L Inventory

### OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

400 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV

200 ppm TWA / 400 ppm STEL Adjudicated

NIOSH REL

400 ppm TWA / 500 ppm STEL NIOSH Pocket Guide

NIOSH IDLH

2000 ppm NIOSH Pocket Guide

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

## HEALTH & FIRE HAZARD

### ACUTE TOXICOLOGY

$LD_{50}$ ORAL (RAT)

4,700–5,840 mg/kg (isopropyl alcohol)

Adjudicated

$LD_{50}$ DERMAL (RABBIT)

12,800–16,400 mg/kg (isopropyl alcohol)

Adjudicated

$LC_{50}$ INHALATION (RAT, 4 H)

72.6 mg/L (isopropyl alcohol vapor)

Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

## APPLICATIONS

Cleaning and degreasing solution; surface and equipment wipe-down; general solvent blend. Adjudicated

**Restrictions on Use:** For external and surface use only. Do not drink. Highly flammable: keep away from heat and open flame.

## STORAGE & HANDLING

RECOMMENDED STORAGE

Keep tightly closed in a cool, well-ventilated flammables area away from ignition sources and oxidizers. Ground and bond containers.

Adjudicated

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.

INCOMPATIBILITIES

Strong oxidizing agents (peroxides, nitric acid, perchlorates, hypochlorites), strong acids, acid anhydrides, halogens, and alkali metals (release hydrogen).

Adjudicated

SHELF LIFE

Consult Technical Services for product-specific shelf life

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)

```
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 | PLACARD | PACKING GROUP |
|---|---|---|
| 70 | Flammable Liquid | PG II |

## REVISION HISTORY

Last reviewed 2026-10-20 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

| VERSION | DATE | CHANGE | TRIGGER |
|---|---|---|---|
| 1.10 | 2026-10-20 | Canonical data updated: 2 fields changed via the provenance/adjudication pipeline.<br>• `density` · canonical change (coa.data_provenance / adjudication)<br>• `specificGravity` · canonical change (coa.data_provenance / adjudication) | `canonical_change` |
| 1.9 | 2026-10-14 | Canonical data updated: 1 field changed via the provenance/adjudication pipeline.<br>• `recommended_use` · canonical change (coa.data_provenance / adjudication) | `canonical_change` |

| VERSION | DATE | CHANGE | TRIGGER |
|---|---|---|---|
| 1.8 | 2026-10-08 | Canonical data updated: 19 fields changed via the provenance/adjudication pipeline.<br>• odor · canonical change (coa.data_provenance / adjudication)<br>• solubility · canonical change (coa.data_provenance / adjudication)<br>• vaporDensity · canonical change (coa.data_provenance / adjudication)<br>• explosiveLimits · canonical change (coa.data_provenance / adjudication)<br>• autoIgnitionTemperature · canonical change (coa.data_provenance / adjudication)<br>• oel_acgih_tlv · canonical change (coa.data_provenance / adjudication)<br>• incompatible_materials · canonical change (coa.data_provenance / adjudication)<br>• conditions_to_avoid · canonical change (coa.data_provenance / adjudication)<br>• hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication)<br>• storage_precautions · canonical change (coa.data_provenance / adjudication)<br>• rcra_waste_codes · canonical change (coa.data_provenance / adjudication)<br>• cercla_rq · canonical change (coa.data_provenance / adjudication)<br>• dot_transport_note · canonical change (coa.data_provenance / adjudication)<br>• synonyms · canonical change (coa.data_provenance / adjudication)<br>• flashPoint · canonical change (coa.data_provenance / adjudication)<br>• boilingPoint · canonical change (coa.data_provenance / adjudication)<br>• specificGravity · canonical change (coa.data_provenance / adjudication)<br>• recommended_use · canonical change (coa.data_provenance / adjudication)<br>• restrictions_on_use · canonical change (coa.data_provenance / adjudication) | canonical_change |
| 1.7 | 2026-10-05 | Canonical data updated: 3 fields changed via the provenance/adjudication pipeline.<br>• oel_niosh_rel · canonical change (coa.data_provenance / adjudication)<br>• oel_idlh · canonical change (coa.data_provenance / adjudication)<br>• oel_osha_pel · canonical change (coa.data_provenance / adjudication) | canonical_change |
| 1.6 | 2026-10-03 | Canonical data updated: 1 field changed via the provenance/adjudication pipeline.<br>• flashPoint · canonical change (coa.data_provenance / adjudication) | canonical_change |
| 1.5 | 2026-09-30 | Canonical data updated: 2 fields changed via the provenance/adjudication pipeline.<br>• boilingPoint · canonical change (coa.data_provenance / adjudication)<br>• appearance · canonical change (coa.data_provenance / adjudication) | canonical_change |

| VERSION | DATE | CHANGE | TRIGGER |
|---|---|---|---|
| 1.4 | 2026-09-10 | Canonical data updated: 1 field changed via the provenance/adjudication pipeline.<br>• flashPoint · canonical change (coa.data_provenance / adjudication) | canonical_change |
| 1.3 | 2026-08-05 | Canonical data updated: 3 fields changed via the provenance/adjudication pipeline.<br>• hazardClass · canonical change (coa.data_provenance / adjudication)<br>• packingGroup · canonical change (coa.data_provenance / adjudication)<br>• 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.<br>• dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication)<br>• 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).<br>• countryOfOrigin · canonical adjudication / reground (coa.data_provenance)<br>• ghsClassification · canonical adjudication / reground (coa.data_provenance)<br>• 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.