

TECHNICAL DATA SHEET

Acetone ACS Grade

ACS Grade

CAS NUMBER	ALLIANCE CODE	GENERATED
67-64-1	acetone-acs-grade	2026-08-31
REVISION	REVIEWED	
1.3	2026-06-18 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Acetone ACS Grade	acetone-acs-grade
GRADE	CONCENTRATION
ACS Grade	—
CAS NUMBER	FORMULA
67-64-1 PubChem	C3H6O PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
58.08 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (acetone)	99.5 % Min	99.9 %	GC, corrected for water content	ACS Reagent Chemicals
Titration acid	0.0003 Max meq/g	0.00006 meq/g	ASTM D1613 / ACS titration	ACS Reagent Chemicals

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Aldehyde (as HCHO)	0.002% max	0.0004 %	—	ACS Reagent Chemicals
Titration base	0.0006 Max meq/g	0.0001 meq/g	ASTM D1614 / ACS titration	ACS Reagent Chemicals
Isopropyl alcohol	0.05% max	0.005 %	—	ACS Reagent Chemicals
Methanol	0.05% max	0.004 %	—	ACS Reagent Chemicals
Substances reducing permanganate (permanganate time test)	Color retains 120 min	300	ASTM D1363	ACS Reagent Chemicals
Residue after evaporation	10 ppm max	2 ppm	Gravimetric (evaporation of 100 g, dried 30 min at 105 °C)	ACS Reagent Chemicals
Ultraviolet absorbance (applies to ACS lots designated suitable for ultraviolet spectrophotometry; not tested on general-use ACS lots)	400 nm 0.01; 350 nm 0.02; 340 nm 0.10; 330 nm 1.00 (max A.U.)	Passes test	UV spectrophotometry, 1 cm cell vs. water	ACS Reagent Chemicals
Water (H ₂ O)	0.5 Max Wt.%	0.10 Wt.%	ASTM D1364 (Karl Fischer)	ACS Reagent Chemicals

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Identification (infrared absorption)	Conforms to reference spectrum for acetone	Passes test	FT-IR, comparison to reference spectrum	Interpreted
residue	0.001 % max	0.0002 %	—	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 ACS Grade	—	—	current
Technical Grade	—	—	acetone-technical-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	Clear water white liquid	Supplier specification
Form	Liquid	Published reference
Color	10 Max	ACS Reagent Chemicals
Odor	Fruity odor	Published reference
Specific Gravity (20 °C)	0.7860 – 0.7890	Supplier specification
Density	0.791 at 68 °F (USCG, 1999) – Less dense than water; will float	Published reference
Boiling Point	55.5 – 56.5 °C	Interpreted
Melting Point	–137 °F (NTP, 1992)	Published reference
Flash Point	0 °F (NTP, 1992)	Published reference
Vapor Pressure	180 mmHg at 68 °F ; 270 mmHg at 86 °F (NTP, 1992)	Published reference
Solubility (water)	Solution remains clear for 30 min.	ACS Reagent Chemicals
Refractive Index (nD 20)	1.3580 – 1.3600	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

MATERIAL	RATING	CONDITIONS	SOURCE
HDPE	Compatible	—	nwsci.com

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

UN1090 49 CFR 172.101

HAZARD CLASS

3 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Acetone Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H225, H319, H336, EUH066

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)

1000 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV

— no canonical

NIOSH REL

250 ppm TWA NIOSH Pocket Guide

NIOSH IDLH

2500 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.

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
179124	ACS Reagent	99.5%	Exact	ACS Reagent $\geq 99.5\%$

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

APPLICATION GUIDANCE

Acetone ACS Grade (ACS Grade) 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)

UN1090, Acetone, 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

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: 4 fields changed via the provenance/adjudication pipeline. - hazardClass · canonical change (coa.data_provenance / adjudication) - packingGroup · canonical change (coa.data_provenance / adjudication) - signalWord · 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

VERSION	DATE	CHANGE	TRIGGER
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.