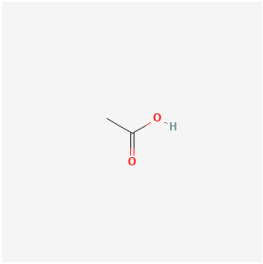
Technical Data Sheet

Acetic Acid Glacial ACS Grade

ACS Grade

Alliance Code	Revised	Revision
acetic-acid-glacial-99-acs-grade	2026-10-07	1.6

CAS number 64-19-7	UN number UN2789	Hazard class · packing group 8 · PG II
 Structure · PubChem	Grade ACS Grade	Signal word **Danger**

Hazards

Flammable | Corrosive | Irritant / harmful H226 H312 H314

Proper shipping name

Acetic acid, glacial or acetic acid solution, with more than 80 percent acid, by mass

IDENTITY & COMPOSITION

PRODUCT NAME
Acetic Acid Glacial ACS Grade

ALLIANCE CODE
acetic-acid-glacial-99-acs-grade

GRADE
ACS Grade

CONCENTRATION
—

CAS NUMBER
64-19-7 PubChem

FORMULA
CH3COOH PubChem

MOLECULAR WEIGHT
60.05 PubChem

PRODUCT TYPE
Pure substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (CH3COOH)	99.7 - 100.0 %	—	GC	Interpreted
Acetic Anhydride	0.01 MAX %	—	GC	Interpreted
Titrable base	Max 0.0004 meq/g	—	—	Interpreted
Chlorides	1 MAX ppm	—	—	Interpreted
Color (APHA)	Max 10	—	—	Interpreted
Dilution test	Passes test	—	—	Interpreted
Heavy metals	Max 0.5 ppm	—	—	Interpreted
Iron	0.2 MAX ppm	—	—	Interpreted
Substances Reducing Permanganate	To pass Test	—	—	Interpreted
Nonvolatile Matter	0.001 MAX W%	—	—	Interpreted
Substances reducing dichromate (O)	0.003 Max %	—	—	Interpreted
Sulfate (SO4)	Max 1 ppm	—	—	Interpreted
Water	0.2 Max %	—	Karl Fischer (K.F.)	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Weight per ml (at 20°C)	1.048 - 1.05 gm/ml	—	—	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 ACS Grade	—	—	current
Technical	—	—	acetic-acid-glacial-technical

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	Colorless, clear liquid	Adjudicated
Form	Liquid	Published reference
Odor	Pungent, vinegar-like	Adjudicated
pH	2.4 (1 M solution)	Adjudicated
Specific Gravity	1.05 at 20–25 °C (water = 1)	Adjudicated
Density	1.051 at 68 °F (USCG, 1999) - Denser than water; will sink	Published reference
Boiling Point	118 °C (244 °F) at 760 mmHg	Adjudicated
Melting Point	16.6 °C (62 °F) — solidifies in cool storage	Adjudicated
Flash Point	39 °C (102–103 °F), closed cup	Adjudicated
Vapor Pressure	15.6 mmHg at 25 °C	Adjudicated
Vapor Density	2.1 (air = 1)	Adjudicated
Solubility (water)	Completely miscible with water	Adjudicated
Viscosity	1.06–1.22 mPa·s at 20–25 °C	Adjudicated

Strong acid — density and vapor-pressure values shown are at 20 °C; values shift markedly with concentration and temperature. Reference concentration-temperature curves before specifying equipment.

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
stainless steel	Compatible	chemically pure acetic acid (99.85% mass min. per the same sheet) and 80% acetic acid	ingredi.com

MATERIAL	RATING	CONDITIONS	SOURCE
high density polyethylene (HDPE)	Compatible	chemically pure acetic acid (99.85% mass min. per the same sheet) and 80% acetic acid	ingredi.com
glass	Compatible	chemically pure acetic acid (99.85% mass min. per the same sheet) and 80% acetic acid	ingredi.com
aluminium	Limited	chemically pure (glacial) acetic acid only; not suitable for water-containing/dilute acid	ingredi.com
high density polyethylene	Compatible	Chemically pure acetic acid; no temperature stated	ingredi.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

UN2789 49 CFR 172.101

HAZARD CLASS

8 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Acetic acid, glacial or acetic acid solution, with more than 80 percent acid, by mass

Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H226, H312, H314 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P233, P240, P241, P242, P243, P260, P264, P280, P301+P330+P331, P302+P352, P303+P361+P353, P304+P340, P305+P351+P338, P310, P312, P321, P362, P363, P370+P378, P403+P235, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

10 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV

10 ppm TWA / 15 ppm STEL Adjudicated

NIOSH REL

10 ppm TWA / 15 ppm STEL NIOSH Pocket Guide

NIOSH IDLH

50 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)

3,310 mg/kg Adjudicated

LD_{50} DERMAL (RABBIT)

1,060 mg/kg (basis for H312)

Adjudicated

LC_{50} INHALATION (RAT, 4 H)

11 mg/L (vapor) Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

HONEYWELL

SKU	GRADE	CONC.	MATCH	NOTES
33209	ACS	99.8%	Unverified candidate	Fluka ACS grade

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
320099	ACS Reagent	99.7%	Unverified candidate	ACS Reagent ≥99.7%

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

APPLICATIONS

Laboratory reagent for analytical applications and research laboratories laballey.com

Reagent, biological/biochemical testing, analyzing synthetic peptides, acidifying and neutralizing agent, solvent

laballey.com

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

Store in a ventilated area for flammable and corrosive liquids, above 17 °C (63 °F) to prevent freezing, in containers of glass, stainless steel or compatible polyethylene. Keep away from oxidizers and bases.

Adjudicated

HANDLING PRECAUTIONS

Use full PPE including face shield, acid-resistant gloves and apron. Add acid to water slowly with stirring; never reverse. Ventilation required.

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

INCOMPATIBILITIES

Strong oxidizers (chromic, nitric and perchloric acids, peroxides, permanganates); bases and caustics; ammonium nitrate; acetaldehyde; most common metals (corrosion, hydrogen). Attacks many plastics, rubbers and coatings.

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)

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UN2789, Acetic acid, glacial or acetic acid solution, with more than 80 percent acid, by mass, 8, PG II
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Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD	PACKING GROUP
60	Corrosive	PG II

REVISION HISTORY

Last reviewed 2026-10-07 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.6	2026-10-07	Canonical data updated: 24 fields changed via the provenance/adjudication pipeline. • ghsClassification · canonical change (coa.data_provenance / adjudication) • hazard_h_codes · canonical change (coa.data_provenance / adjudication) • hazard_p_codes · canonical change (coa.data_provenance / adjudication) • synonyms · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • vaporDensity · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • viscosity · canonical change (coa.data_provenance / adjudication) • explosiveLimits · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • oel_other · canonical change (coa.data_provenance / adjudication) • incompatible_materials · canonical change (coa.data_provenance / adjudication) • conditions_to_avoid · canonical change (coa.data_provenance / adjudication) • hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication) • storage_precautions · canonical change (coa.data_provenance / adjudication) • rcra_waste_codes · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	2026-10-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • oel_osha_pel · canonical change (coa.data_provenance / adjudication)	canonical_change
1.4	2026-09-30	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • 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	2026-07-17	Canonical data re-verified: 5 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) • hazard_h_codes · canonical adjudication / reground (coa.data_provenance) • hazard_p_codes · 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.