

TECHNICAL DATA SHEET

Acetic Acid Glacial ACS Grade

ACS Grade

CAS NUMBER	ALLIANCE CODE	GENERATED
64-19-7	acetic-acid-glacial-99-acs-grade	2026-09-01
REVISION	REVIEWED	
1.3	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Acetic Acid Glacial ACS Grade	acetic-acid-glacial-99-acs-grade
GRADE	CONCENTRATION
ACS Grade	—
CAS NUMBER	FORMULA
64-19-7 PubChem	C2H4O2 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
60.05 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (CH3COOH)	99.7 – 100.0 %	99.85 %	GC	ACS Reagent Chemicals
Acetic Anhydride	0.01 MAX %	0.002 %	GC	ACS Reagent Chemicals
Titration base	Max 0.0004 meq/g	0.00004 meq/g	—	ACS Reagent Chemicals

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chlorides	1 MAX ppm	0.2 ppm	—	ACS Reagent Chemicals
Dilution test	Passes test	Passes test	—	Supplier specification
Heavy metals	Max 0.5 ppm	0.1 ppm	—	ACS Reagent Chemicals
Iron	0.2 MAX ppm	0.05 ppm	—	ACS Reagent Chemicals
Substances Reducing Permanganate	To pass Test	Passes test	—	ACS Reagent Chemicals
Nonvolatile Matter	0.001 MAX W%	0.0003 W%	—	ACS Reagent Chemicals
Substances reducing dichromate (O)	0.003 Max %	0.001 %	—	Supplier specification
Sulfate (SO ₄)	Max 1 ppm	0.3 ppm	—	ACS Reagent Chemicals
Water	0.2 Max %	0.05 %	Karl Fischer (K.F.)	Supplier specification
Weight per ml (at 20°C)	1.048 – 1.05 gm/ml	1.049	—	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

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical	—	—	acetic-acid-glacial-technical

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

One or more physical-property values are temporarily suppressed pending verification against vendor COA data. For complete properties refer to the Safety Data Sheet (SDS) or contact sales@alliancechemical.com.

PROPERTY	VALUE	SOURCE
Form	Liquid	Published reference
Color	Max 10	ACS Reagent Chemicals
Odor	Pungent	Published reference
pH	Aqueous solution 1.0 molar = 2.4; 0.1 molar = 2.9; 0.01 molar = 3.4	Published reference
Density	1.051 at 68 °F (USCG, 1999) – Denser than water; will sink	Published reference
Boiling Point	244 °F at 760 mmHg (NTP, 1992)	Published reference
Melting Point	61.9 °F (NTP, 1992)	Published reference
Flash Point	104 °F (NTP, 1992)	Published reference
Vapor Pressure	11.4 mmHg at 68 °F ; 20 mmHg at 86 °F (NTP, 1992)	Published reference
Solubility (water)	greater than or equal to 100 mg/mL at 73 °F (NTP, 1992)	Published reference

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
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**

PACKING GROUP

II **Adjudicated**

HAZARD CLASS

8 **Adjudicated**

PROPER SHIPPING NAME

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

Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H226, H314 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P233, P240, P241, P242, P243, P260, P264, P280, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P321, 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

— **no canonical**

NIOSH REL

10 ppm TWA / 15 ppm STEL

NIOSH IDLH

50 ppm **NIOSH Pocket Guide**

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

HONEYWELL

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

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
320099	ACS Reagent	99.7%	Exact	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](#)

Industrial manufacturing (relevant use identified on the glacial acetic acid safety data sheet)

[mubychem.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 well-ventilated place, keep cool, keep locked up, and avoid release to the environment; the same sheet states the material is flammable and explosive in the presence of oxidizing materials

[mubychem.com](#)

INCOMPATIBILITIES

oxidizing materials [mubychem.com](#)

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.

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)

UN2789, Acetic acid, glacial or acetic acid solution, with more than 80 percent acid, by mass, 8, PG II

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

NMFC CLASS 60	PLACARD Corrosive	PACKING GROUP PG II
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REVISION HISTORY

Last reviewed 2026-07-17 by Andre Taki, DOT Hazmat Specialist.

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.