

TECHNICAL DATA SHEET

Citric Acid Anhydrous - ACS Reagent Grade

ACS Reagent

CAS NUMBER	ALLIANCE CODE	GENERATED
77-92-9	citric-acid-anhydrous-acs-reagent-grade	2026-08-31
REVISION	REVIEWED	
1.1	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Citric Acid Anhydrous - ACS Reagent Grade	citric-acid-anhydrous-acs-reagent-grade
GRADE	CONCENTRATION
ACS Reagent	—
CAS NUMBER	FORMULA
77-92-9 PubChem	C6H8O7 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
192.12 PubChem	—

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay	Min 99.5%	99.9%	—	Supplier specification
Chloride	Max 0.001%	0.0002%	—	Supplier specification
Description	Fine granular	Passes test	—	ACS Reagent Chemicals

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Identification	To Pass Test	Passes test	—	ACS Reagent Chemicals
Insoluble Matter	Max 0.005%	0.005%	—	Supplier specification
Iron	Max 3 ppm	0.2 ppm	—	Supplier specification
Lead	Max 2 ppm	0.02 ppm	—	Supplier specification
Oxalate (C ₂ O ₄)	To Pass Test	Passes test	—	ACS Reagent Chemicals
Phosphate	Max 0.001%	0.0001%	—	Supplier specification
Residue after ignition	Max 0.02%	0.003%	—	Supplier specification
Substances carbonizable by hot sulfuric acid	Passes test	Passes test	—	ACS Reagent Chemicals
Sulfate	Max 0.002%	0.0005%	—	Supplier specification
Water (Karl Fischer)	Max 0.5%	0.1%	Karl Fischer titration	Supplier specification
arsenic	1 ppm max	0.02 ppm	—	Supplier specification
residue	0.02 % max	0.003%	—	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 Reagent	—	—	current
Reagent	50%	—	citric-acid-50-solution
Technical	25%	—	citric-acid-25-solution
Food	—	—	citric-acid-anhydrous-food-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	Citric acid appears as colorless, odorless crystals with an acid taste. Denser than water. (USCG, 1999)	Published reference
Odor	Odorless	Published reference
Density	1.54 at 68 °F (USCG, 1999) – Denser than water; will sink	Published reference
Boiling Point	Decomposes (NTP, 1992)	Published reference
Melting Point	152 – 155 C	Interpreted
Flash Point	100 °C	Published reference
Solubility (water)	greater than or equal to 100 mg/mL at 72 °F (NTP, 1992)	Published reference

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

HAZARD CLASS

Not regulated **Adjudicated**

PROPER SHIPPING NAME

Not regulated **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Warning **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H319, H335 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P261, P264, P271, P280, P304+P340,
P305+P351+P338, P314, P337+P313,
P403+P233, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— **no canonical**

ACGIH TLV

— **no canonical**

NIOSH REL

— **no canonical**

NIOSH IDLH

— **no canonical**

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.

APPLICATIONS

Industrial use in the manufacture of ecologically compatible detergents, chemical cleaning, concrete admixtures and plasticizers

[ingredi.com](https://www.ingredi.com)

Used as a hydraulic fracturing / well stimulation chemical in oil and shale gas production

[mubychem.com](https://www.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 at 15–25 °C lobachemie.com

INCOMPATIBILITIES

Consult the SDS for material-specific incompatibilities.

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 standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

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

SHELF LIFE

60 months lobachemie.com

Store at 15–25 °C

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

Not regulated for transport.

Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS
55

Freight classification is a fallback estimate. Verify with carrier before tender.

REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-07-17	Canonical data re-verified: 10 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) - dotProperShippingName · canonical adjudication / reground (coa.data_provenance) - dotSubsidiaryHazardClass · 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) - packingGroup · canonical adjudication / reground (coa.data_provenance) - physicalProperties · canonical adjudication / reground (coa.data_provenance) - unNumber · 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.