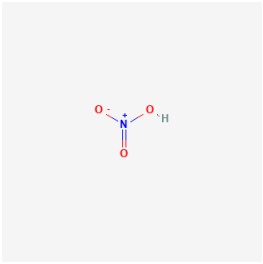
Technical Data Sheet

Nitric Acid 70% ACS Grade - Low Particle

ACS Grade · 70%

Alliance Code	Revised	Revision
nitric-acid-70-acs-grade-low-particle	2026-10-05	1.5

CAS number 7697-37-2	UN number UN2031	Hazard class · packing group 8 · PG II
 Structure · PubChem	Grade ACS Grade · 70%	Signal word **Danger**
Hazards Oxidizer · Corrosive · Acute toxicity · EUH071 H272 H290 H314 H331		
Proper shipping name Nitric acid, other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid		

IDENTITY & COMPOSITION

PRODUCT NAME
Nitric Acid 70% ACS Grade - Low Particle

ALLIANCE CODE
nitric-acid-70-acs-grade-low-particle

GRADE
ACS Grade

CONCENTRATION
70% w/w

CAS NUMBER
7697-37-2 PubChem

FORMULA
HNO3 PubChem

PRODUCT TYPE
Solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (HNO3)	68.0 - 70.0 % w/w	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Arsenic (As)	Max 0.01 ppm	—	—	Interpreted
Chloride (Cl)	Max 0.5 ppm	—	—	Interpreted
Color (APHA)	Max 10	—	—	Interpreted
Heavy Metals (as Pb)	Max 0.2 ppm	—	—	Interpreted
Iron (Fe)	Max 0.2 ppm	—	—	Interpreted
Mercury (Hg)	Max 0.005 ppm	—	—	Interpreted
Nickel (Ni)	Max 0.05 ppm	—	—	Interpreted
Phosphate (PO4)	0.0001 %	—	—	Interpreted
Residue after Ignition	Max 5 ppm	—	—	Interpreted
Sulfate (SO4)	Max 1 ppm	—	—	Interpreted
Particulate matter, >= 0.5 um	Max 100 particles/mL	—	Light-obscuration liquid particle counter	Interpreted
Substances reducing permanganate (as HNO2)	Max 0.0005 %	—	Titrimetric, KMnO4 decolorization	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	70%	—	current
Technical	70%	—	nitric-acid-70-technical-grade
ACS Grade	69%	—	nitric-acid-acs-69-55-gallon-drum
Technical	69%	—	nitric-acid-69-technical-grade
ACS Grade	65%	—	nitric-acid-65
Technical	65%	—	nitric-acid-65-technical-grade
Technical	40%	—	nitric-acid-40
Technical	30%	—	nitric-acid-30
Technical	25%	—	nitric-acid-25
Technical	20%	—	nitric-acid-20
Technical	5%	—	nitric-acid-5

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 to pale yellow liquid	Adjudicated
Form	Liquid	Published reference
Odor	Pungent, acrid (choking) odor	Adjudicated
pH	< 1 at 20 °C	Adjudicated
Specific Gravity	1.413	Published reference
Density	1.404 - 1.414	Interpreted
Boiling Point	119.3 to 120.5 °C (247 to 249 °F) (aqueous solution)	Adjudicated
Melting Point	-41 °C (-42 °F), freezing point (aqueous solution)	Adjudicated
Flash Point	Not applicable	Adjudicated
Vapor Pressure	7–8 mmHg (9.4–11 hPa) at 20 °C	Adjudicated
Vapor Density	2.2–2.3 (air = 1)	Adjudicated
Solubility (water)	Miscible with water in all proportions (releases heat)	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
PTFE (Teflon)	Compatible	recommended as a cap for bottles of concentrated nitric acid	itwreagents.com
chromium	Compatible	hot nitric acid; protective oxide layer forms (no concentration stated)	itwreagents.com

MATERIAL	RATING	CONDITIONS	SOURCE
platinum (also gold, iridium)	Compatible	nitric acid alone; attacked by aqua regia (nitric plus hydrochloric acid). No concentration stated.	itwreagents.com
most metals (general)	Not recommended	no concentration stated; reaction evolves toxic nitrogen dioxide	itwreagents.com
PTFE (Teflon) bottle cap	Compatible	concentrated nitric acid; concentration and temperature not stated	itwreagents.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

UN2031 Adjudicated

HAZARD CLASS

8 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Nitric acid, other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid

Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

EUH071, H272, H290, H314, H331 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P220, P234, P260, P264, P271, P280, P284, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P311, P320, P321, P363, P370+P378, P390, P403+P233, P405, P406, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

2 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV

2 ppm TWA / 4 ppm STEL Adjudicated

NIOSH REL

2 ppm TWA / 4 ppm STEL NIOSH Pocket Guide

NIOSH IDLH

25 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

LC_{50} INHALATION (RAT, 4 H)

> 2.65 mg/L Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
438073	ACS Reagent	70%	Unverified candidate	ACS Reagent fuming-free 70%

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

APPLICATIONS

Raw material in the chemical industry for producing nitrates and fertilizers, and as separating water for parting gold and silver

itwreagents.com

Used in the production of fertilizers, dyes and explosives itwreagents.com

Used to produce soluble metal nitrates itwreagents.com

Analytical detection of aromatic amino acids and proteins via the xanthoprotein reaction itwreagents.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 away from combustible and organic materials, reducing agents, bases and metals, and not on wooden floors or pallets. Use glass, PTFE, PVC or stainless-steel containers, never ordinary metal containers. Protect from sunlight and heat.

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

Combustible and organic materials (wood, paper, oils); alcohols, acetone, acetic anhydride, acetonitrile and acrylonitrile; reducing agents; bases; alkali metals, metal powders and most metals (releases hydrogen and nitrogen oxides); cyanides and sulfides.

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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UN2031, Nitric acid, other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid, 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 2026-10-05 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.5	2026-10-05	Canonical data updated: 19 fields changed via the provenance/adjudication pipeline. • hazard_p_codes · canonical change (coa.data_provenance / adjudication) • ghsClassification · canonical change (coa.data_provenance / adjudication) • oxidizer_category · canonical change (coa.data_provenance / adjudication) • synonyms · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication) • storage_precautions · 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) • oel_acgih_tlv · 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) • vaporPressure · canonical change (coa.data_provenance / adjudication) • vaporDensity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • dot_transport_note · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-09-30	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
1.3	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • dotProperShippingName · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-07-17	Canonical data re-verified: 6 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) • dotSubsidiaryHazardClass · canonical adjudication / reground (coa.data_provenance) • ghsClassification · canonical adjudication / reground (coa.data_provenance) • hazard_p_codes · canonical adjudication / reground (coa.data_provenance) • hsCode · canonical adjudication / reground (coa.data_provenance) • physicalProperties · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.2	2026-07-17	Canonical data updated: 3 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)	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.