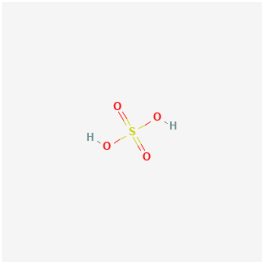
Technical Data Sheet

Sulfuric Acid 93% Technical Grade

Technical Grade · 93%

Alliance Code	Revised	Revision
sulfuric-acid-93-technical-grade	2026-10-12	1.8

CAS number 7664-93-9	UN number UN1830	Hazard class · packing group 8 · PG II
 Structure · PubChem	Grade Technical Grade · 93%	Signal word **Danger**
Hazards Corrosive · Irritant / harmful · H290 H314 H335		
Proper shipping name Sulfuric acid with more than 51 percent acid		

IDENTITY & COMPOSITION

PRODUCT NAME
Sulfuric Acid 93% Technical Grade

ALLIANCE CODE
sulfuric-acid-93-technical-grade

GRADE
Technical Grade

CONCENTRATION
93% w/w

CAS NUMBER
7664-93-9 PubChem

FORMULA
H2SO4 PubChem

MOLECULAR WEIGHT
98.08 PubChem

PRODUCT TYPE
Solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (H2SO4)	93.2-94.2 % w/w	—	—	Interpreted
Color, APHA	50 max	—	—	Interpreted
Grade conformance	Federal Specification A-A-55828, Type I Class 2 and Type II Class 2	—	—	Interpreted
Total heavy metals	<25 ppm	—	—	Interpreted
Iron (Fe)	50.0 ppm max	—	—	Interpreted
Mercury	1.0 ppm max	—	—	Interpreted
Nitrates (as NO3)	<100 ppm	—	—	Interpreted
Specific Gravity @ 68°F	1.835 min	—	—	Interpreted
Sulfur dioxide (SO2)	<50 ppm	—	—	Interpreted
Chloride (Cl)	<50 ppm	—	ASTM E223 (turbidimetric, AgNO3)	Interpreted
Baume @ 60 F	66.0 min	—	ASTM D1298 hydrometer, 60/60 F	Interpreted
type i residue	250 ppm max	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
type ii residue	500 ppm max	—	—	Interpreted
specfic gravity at 60f	1.83-1.84	—	—	Interpreted
turbidity	50 NTU max	—	—	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 Technical Grade	93%	—	current
ACS Grade	96%	—	sulfuric-acid-96-acs-grade
Technical	70%	—	sulfuric-acid-70
Electrolyte	50%	—	sulfuric-acid-50-electrolyte-grade
Technical	37%	—	sulfuric-acid-37-battery-acid
Technical	30%	—	sulfuric-acid-30

Typical assay for each grade is the average of its recent lots. Confirm a grade meets your specification before substituting it.

PHYSICAL & CHEMICAL PROPERTIES

Additional physical properties are listed in the Safety Data Sheet (SDS). For anything not shown, contact sales@alliancechemical.com.

PROPERTY	VALUE	SOURCE
Appearance	Oily, clear liquid	Adjudicated
Form	Liquid	Published reference
Odor	Odorless	Published reference
pH	< 1	Adjudicated
Specific Gravity	1.83 at 20 °C (water = 1)	Adjudicated
Density	1.835 (93% w/w solution, 16 °C)	Published reference
Boiling Point	279 °C (534 °F)	Adjudicated
Melting Point	About -35 °C (-31 °F)	Adjudicated
Flash Point	Not applicable (non-flammable)	Published reference
Vapor Pressure	< 0.3 mmHg at 25 °C	Adjudicated
Vapor Density	3.4 (air = 1)	Adjudicated
Solubility (water)	Miscible with water, releasing intense heat. Always add acid slowly to water, never water to acid.	Adjudicated
Viscosity	11.0 mm^2/s at 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 SERVICE ENVELOPE ≈ 93%

MOC ratings are required for this chemical class but no compatibility data has been seeded yet. Treat as no-data and consult Alliance Technical Services before equipment selection.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER
UN1830 49 CFR 172.101

HAZARD CLASS
8 Adjudicated

PACKING GROUP
II Adjudicated

PROPER SHIPPING NAME
Sulfuric acid with more than 51 percent acid
Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD
Danger Adjudicated

H-CODES (HAZARD STATEMENTS)
H290, H314, H335 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)
P234, P260, P261, P264, P271, P280, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P321, P363, P390, P403+P233, P405, P406, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)
1 mg/m³ TWA OSHA 29 CFR 1910.1000

ACGIH TLV
0.2 mg/m³ TWA (thoracic fraction); A2 for strong inorganic acid mists containing sulfuric acid
Adjudicated

NIOSH REL
1 mg/m³ TWA NIOSH Pocket Guide

NIOSH IDLH
15 mg/m³ 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

LD₅₀ ORAL (RAT)
2,140 mg/kg Adjudicated

LC₅₀ INHALATION (RAT, 4 H)
0.375 mg/L (mist) 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
30743	Reagent	95–97%	Unverified candidate	Honeywell concentrated reagent; concentration differs.

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
258105	ACS Reagent	95-98%	Unverified candidate	ACS Reagent 95–98%
320501	ACS reagent	95–98%	Unverified candidate	Sigma 95–98% vs Alliance 93%; confirm dilution before substitution.

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

APPLICATIONS

Battery manufacture, chlorine dioxide generation, effluent treatment and inorganic pigment production nouryon.com

Fertilizer manufacture, pH adjustment and water treatment nouryon.com

Oxidizing and dehydrating agent in chemical processing lookpolymers.com

Treatment of metals (metallurgy) and purification of petroleum lookpolymers.com

Manufacture of dyestuffs (textiles) lookpolymers.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

Keep tightly closed in acid-resistant containers in a cool, dry, ventilated area, away from water, bases, organics and metals. To dilute, add the acid slowly to water while stirring; never add water to the acid.

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

Water (violent reaction with heat and spattering); bases; organic and combustible materials; reducing agents; chlorates, permanganates, nitrates, picrates, fulminates and carbides; cyanides and sulfides (release toxic gases); powdered metals and most metals (release flammable hydrogen).

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)

```
UN1830, Sulfuric acid with more than 51 percent acid, 8, PG II
```

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 2026-10-12 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.8	2026-10-12	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • dot_transport_note · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.7	2026-10-07	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
1.6	2026-10-06	Canonical data updated: 21 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) • vaporDensity · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • rcra_waste_codes · 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) • synonyms · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • viscosity · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • dot_transport_note · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	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

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-08-27	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • oel_niosh_rel · canonical change (coa.data_provenance / adjudication) • oel_idlh · canonical change (coa.data_provenance / adjudication)	canonical_change
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: 7 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). • color · canonical adjudication / reground (coa.data_provenance) • 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) • physicalProperties · 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.