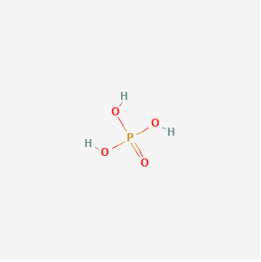
Technical Data Sheet

Phosphoric Acid 85% USP Food Grade

USP Food Grade · 85%

Alliance Code	Revised	Revision
phosphoric-acid-85-usp-food-grade	2026-10-07	1.6

CAS number 7664-38-2	UN number UN1805	Hazard class · packing group 8 · PG III
 Structure · PubChem	Grade USP Food Grade · 85%	Signal word **Danger**
Hazards Corrosive · Irritant / harmful · H290 H302 H314		
Proper shipping name Phosphoric acid solution		

IDENTITY & COMPOSITION

PRODUCT NAME
Phosphoric Acid 85% USP Food Grade

ALLIANCE CODE
phosphoric-acid-85-usp-food-grade

GRADE
USP Food Grade

CONCENTRATION
85% w/w

CAS NUMBER
7664-38-2 PubChem

FORMULA
H3PO4 PubChem

PRODUCT TYPE
Solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (H3PO4)	85.0 - 88.0 % w/w	—	acidimetry	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Arsenic (As)	Not more than 3 mg/kg	—	—	Interpreted
Cadmium (Cd)	Not more than 3 mg/kg	—	—	Interpreted
Chlorides (Cl)	10 ppm Cl maximum	—	—	Interpreted
Color (maximum)	10 APHA Units max	—	—	Interpreted
Fluoride (F)	10 mg/kg max	—	—	Interpreted
Iron (Fe)	10 ppm Fe maximum	—	—	Interpreted
Lead (Pb)	Not more than 3 mg/kg	—	—	Interpreted
Phosphate (P_2O_5)	61.5 % w/w MIN	—	—	Interpreted
Sulfate (SO_4)	100 ppm SO_4 maximum	—	—	Interpreted
Mercury (Hg)	Not more than 1 mg/kg	—	Cold-vapour AAS (EPA 245.1)	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 USP Food Grade	85%	—	`current`
ACS Grade	85%	—	`phosphoric-acid-85-acs-grade`

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical Grade	85%	—	phosphoric-acid-85-technical-grade
USP Food Grade	75%	—	phosphoric-acid-75-usp-food-grade
ACS	45%	—	phosphoric-acid-45-acs-grade
ACS	30%	—	phosphoric-acid-30-acs-grade
Technical	30%	—	phosphoric-acid-30-the-ultimate-rust-remover-solution
Technical	20%	—	phosphoric-acid-20-technical-grade
Technical	15%	—	phosphoric-acid-15-technical-grade
ACS	10%	—	phosphoric-acid-10-acs-grade
Food	10%	—	phosphoric-acid-10-food-grade
Technical	10%	—	phosphoric-acid-10-technical-grade
Food	—	—	phosphoric-acid-45-food-grade

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	Clear, colorless, syrupy liquid	Adjudicated
Form	Liquid	Published reference
Odor	Odorless	Adjudicated
pH	< 1	Adjudicated
Specific Gravity	1.69 at 25 °C (water = 1)	Adjudicated
Density	1.685 (85% solution, 25 °C)	Published reference
Boiling Point	158 °C (316 °F)	Adjudicated
Melting Point	21 °C (70 °F)	Adjudicated
Flash Point	Not applicable	Adjudicated
Vapor Pressure	2.2 mmHg at 20 °C (water vapor)	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 SERVICE ENVELOPE ≈ 85%

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

UN1805 49 CFR 172.101

HAZARD CLASS

8 Adjudicated

PACKING GROUP

III Adjudicated

PROPER SHIPPING NAME

Phosphoric acid solution Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H290, H302, H314 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P234, P260, P264, P270, P280, P301+P312, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P321, P330, P363, P390, P405, P406, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

1 mg/m^3 TWA OSHA 29 CFR 1910.1000

ACGIH TLV

1 mg/m^3 TWA / 3 mg/m^3 STEL Adjudicated

NIOSH REL

1 mg/m^3 TWA / 3 mg/m^3 STEL NIOSH Pocket Guide

NIOSH IDLH

1000 mg/m^3 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)

1,530 mg/kg (as phosphoric acid); ATE about 1,800 mg/kg for the 85% solution

Adjudicated

LD$_{50}$ DERMAL (RABBIT)

2,740 mg/kg (as phosphoric acid)

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
345245	ACS Reagent	85%	Unverified candidate	ACS Reagent ≥85%

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

APPLICATIONS

Fertilizer manufacture, and use as a pH modifier, sanitizing agent and rust converter laballey.com

Bulk food chemical and bulk pharmaceutical chemical for manufacturing, processing or repackaging

digitalassets.avantorsciences.com

Miscellaneous or general purpose food additive, GRAS under 21 CFR 182.1073 static1.squarespace.com

Miscellaneous or general purpose feed additive, GRAS under 21 CFR 582.1073 static1.squarespace.com

Acidifying agent in meat and poultry products and margarine; antioxidant synergist in lard, shortening and poultry fats

static1.squarespace.com

Potable water treatment additive for corrosion and scale control (85% material) static1.squarespace.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 corrosion-resistant containers (polyethylene, fiberglass or stainless steel, not mild steel) away from bases, bleach and metals. Store above 21 °C (70 °F) or expect crystallization; warm gently to re-melt.

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 bases (violent reaction); bleach and other hypochlorite solutions (release chlorine gas) and ammonia; most metals (release flammable hydrogen); sulfides, sulfites and cyanides (release toxic gases); nitromethane (explosive mixtures).

Adjudicated

SHELF LIFE

36 months static1.squarespace.com

Cool conditions in tightly sealed container (as stated for ICL Phosphoric Acid, 85%, FCC grade)

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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UN1805, Phosphoric acid solution, 8, PG III
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Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD	PACKING GROUP
65	Corrosive	PG III

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: 18 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) • vaporPressure · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · 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

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-09-30	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • appearance · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · 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_p_codes · canonical adjudication / reground (coa.data_provenance) • hsCode · canonical adjudication / reground (coa.data_provenance) • physicalProperties · canonical adjudication / reground (coa.data_provenance) • specificGravity · 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.