TECHNICAL DATA SHEET

Phosphoric Acid 75% USP Food Grade

Food Grade · 75%

CAS NUMBER	ALLIANCE CODE	GENERATED
7664-38-2	phosphoric-acid-75-usp-food-grade	2026-07-17

1. IDENTITY & COMPOSITION

PRODUCT NAME
Phosphoric Acid 75% USP Food Grade

ALLIANCE CODE
phosphoric-acid-75-usp-food-grade

GRADE
Food Grade

CONCENTRATION
75%

CAS NUMBER
7664-38-2 PubChem

FORMULA
H3O4P PubChem

MOLECULAR WEIGHT
97.995 PubChem

PRODUCT TYPE
solution

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE Food Grade	75%	—	current
ACS Grade	85%	—	phosphoric-acid-85-acs-grade
—	75%	—	phosphoric-acid-75
ACS Grade	75%	—	phosphoric-acid-75-acs-grade
ACS	30%	—	phosphoric-acid-30-acs-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
—	—	—	phosphoric-acid-10-technical-grade
—	—	—	phosphoric-acid-15-technical-grade
—	—	—	phosphoric-acid-20-food-grade
—	—	—	phosphoric-acid-45-technical-grade
—	—	—	phosphoric-acid-5-acs-grade
—	—	—	phosphoric-acid-5-food-grade
—	—	—	phosphoric-acid-5-technical-grade
—	—	—	phosphoric-acid-50-technical-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

APPEARANCE
Clear, colorless viscous liquid Product record

FORM
Liquid Product record

ODOR
Odorless Product record

PH
pH = 1.5 (0.1 N aqueous solution) Product record

DENSITY
≈1.575 (75% solution, 25 °C) Product record

BOILING POINT
~135–158 °C Product record

MELTING POINT
~ -17 to 21 °C (freezing point) Product record

FLASH POINT
Non-flammable Product record

VAPOR PRESSURE
Low Product record

SOLUBILITY (WATER)
Miscible (NIOSH, 2024) Product record

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 ≈ 75%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Poor	—	Swells and degrades	Cole-Parmer Chemical Compatibility
EPDM Elastomer	Good	40	Acceptable but FKM preferred	Cole-Parmer Chemical Compatibility
Viton (FKM) Elastomer	Excellent	80	Preferred elastomer	Cole-Parmer Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Lining and gaskets	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Excellent	100	Inert to most strong acids (avoid HF).	Cole-Parmer Chemical Compatibility
Glass (borosilicate) Glass Ceramic	Excellent	100	Inert under all conditions	Cole-Parmer Chemical Compatibility
316 stainless steel Metal	Poor	25	Severe pitting; use only for vapors	Cole-Parmer Chemical Compatibility
Aluminium Metal	Not recommended	—	Reacts to form H2 gas	Cole-Parmer Chemical Compatibility
Carbon steel Metal	Not recommended	—	Aggressive corrosion	Cole-Parmer Chemical Compatibility
Carbon Steel Metal	Not recommended	—	Catastrophic corrosion; never use.	Cole-Parmer Chemical Compatibility
Hastelloy C-276 Metal	Excellent	90	Premium HCl alloy	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Inconel 625 Metal	Good	60	Acceptable for dilute service	Cole-Parmer Chemical Compatibility
Tantalum Metal	Excellent	100	Best-in-class but expensive	Cole-Parmer Chemical Compatibility
CPVC Thermoplastic	Excellent	90	Preferred for elevated temperature	Cole-Parmer Chemical Compatibility
FRP (vinyl ester) Thermoplastic	Good	60	Common bulk-storage tank material	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Excellent	60	Standard drum / IBC material	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Excellent	60	Standard piping for ambient service	Cole-Parmer Chemical Compatibility

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER
UN1805 Adjudicated

HAZARD CLASS
8 Adjudicated

PACKING GROUP
III Adjudicated

PROPER SHIPPING NAME
PHOSPHORIC ACID SOLUTION Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD
Danger Adjudicated

H-CODES (HAZARD STATEMENTS)
H290, H314 ECHA CLP Annex VI

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

OCCUPATIONAL EXPOSURE LIMITS

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

ACGIH TLV
— unknown

NIOSH REL
1 mg/m³ TWA / 3 mg/m³ STEL NIOSH Pocket Guide

NIOSH IDLH
1000 mg/m³ 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.

Supplier Qualification Packet

One zipped download containing the TDS, SDS, latest lot COA (when available), and a fresh Letter of Continuing Guaranty for Phosphoric Acid 75% USP Food Grade. Every file included is SHA-256 hashed and listed in a manifest your QA team can audit.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
345245	ACS Reagent	85%	Exact	ACS Reagent ≥85%

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

APPLICATION GUIDANCE

Phosphoric Acid 75% USP Food Grade (Food Grade) is a strong mineral acid used across pH control, metal pickling, food and beverage processing, and chemical synthesis. Grade and concentration determine the appropriate end-use and materials.

- Metal pickling, etching, and surface preparation
- pH adjustment in water and wastewater treatment
- Regeneration of ion-exchange resins
- Chemical manufacturing and synthesis
- Food and beverage processing (food-grade only)

Always add acid to water, never water to acid. Use lined or fluoropolymer piping rated for the concentration; carbon steel is not suitable for dilute acid service.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, dry, well-ventilated area in compatible containers (lined steel, HDPE, FRP — verify per concentration). Segregate from bases, oxidizers,...

HANDLING PRECAUTIONS

Use full PPE including face shield, acid-resistant gloves and apron. Add acid to water slowly with stirring; never reverse. Ventilation required.

INCOMPATIBILITIES

Bases, active metals (aluminium, zinc), cyanides, sulfides, oxidizing agents. Reacts violently with organic anhydrides.

SHELF LIFE

24 months from date of manufacture in sealed, original packaging

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)

UN1805, PHOSPHORIC ACID SOLUTION, 8, PG III

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 2026-05-20 by **Hossein Taki**, Vice President (Vice President, Alliance Chemical · CAGE Code 1LT50 · DOT Hazmat Registrant #2188383).

VERSION	DATE	CHANGE	TRIGGER
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.