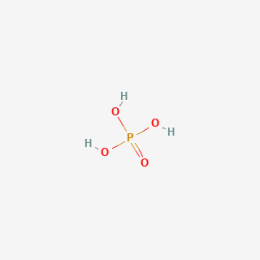
Technical Data Sheet

Phosphoric Acid 30% ACS Grade

ACS · 30%

Alliance Code	Revised	Revision
phosphoric-acid-30-acs-grade	2026-10-20	1.7

CAS number 7664-38-2	UN number UN1805	Hazard class · packing group 8 · PG III
 Structure · PubChem	Grade ACS · 30%	Signal word **Danger**
Hazards Corrosive H290 H314		
Proper shipping name Phosphoric acid solution		

IDENTITY & COMPOSITION

PRODUCT NAME
Phosphoric Acid 30% ACS Grade

ALLIANCE CODE
phosphoric-acid-30-acs-grade

GRADE
ACS

CONCENTRATION
30% w/w

CAS NUMBER
7664-38-2 Adjudicated

FORMULA
H3O4P Adjudicated

MOLECULAR WEIGHT
97.995 Adjudicated

PRODUCT TYPE
Solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay	29.0 - 31.0 % w/w	—	—	Interpreted
Arsenic (As)	0.35 ppm max	—	—	Interpreted
Calcium (Ca)	0.00071% max	—	—	Interpreted
Chloride (Cl)	1.3 ppm max	—	—	Interpreted
Heavy metals (as Pb)	0.00035 % max	—	—	Interpreted
Iron (Fe)	0.0011% max	—	—	Interpreted
Magnesium (Mg)	0.00071% max	—	—	Interpreted
Nitrate (NO3)	2 ppm max	—	—	Interpreted
KMnO4 reducible matter (as O)	0.00035% max	—	—	Interpreted
Sodium (Na)	0.0088% max	—	—	Interpreted
Sulfate (SO4)	0.0011% max	—	—	Interpreted
Volatile acids (as CH3COOH)	0.00035% max	—	—	Interpreted
Color (APHA)	Max 10	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Reducing substances	Passes Test	—	—	Interpreted
Composition	30 % phosphoric acid in deionized water, by weight	—	By formulation; batch weights (scale ticket)	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	30%	—	current
ACS Grade	85%	—	phosphoric-acid-85-acs-grade
Technical Grade	85%	—	phosphoric-acid-85-technical-grade
USP Food Grade	85%	—	phosphoric-acid-85-usp-food-grade
USP Food Grade	75%	—	phosphoric-acid-75-usp-food-grade
ACS	45%	—	phosphoric-acid-45-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

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
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

PROPERTY	VALUE	SOURCE
Appearance	Clear, colorless liquid	Published reference
Form	Liquid	Published reference
Odor	Odorless	Published reference
pH	~1.5 (30% solution)	Published reference
Specific Gravity	1.183 at 20/20 °C (water = 1)	Adjudicated
Density	1.1805 g/cm^3 at 20 °C	Adjudicated
Boiling Point	~104 °C	Published reference
Melting Point	< 0 °C	Published reference
Flash Point	Not applicable (non-combustible)	Published reference
Solubility (water)	Miscible with water	Published reference

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 ≈ 30%

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 Adjudicated

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, H314 Adjudicated

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

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

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

ACGIH TLV
— no canonical

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: NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

APPLICATION GUIDANCE

Phosphoric Acid 30% ACS Grade (ACS) 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

Keep closed in polyethylene or other acid-resistant containers, not mild steel, away from bases, bleach and metals.

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 hypochlorites (release chlorine) and ammonia; most metals (release flammable hydrogen); sulfides, sulfites and cyanides (release toxic gases).

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)

```
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 2026-10-20 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.7	2026-10-20	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • `density` · canonical change (coa.data_provenance / adjudication) • `specificGravity` · canonical change (coa.data_provenance / adjudication)	`canonical_change`

VERSION	DATE	CHANGE	TRIGGER
1.6	2026-10-13	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • 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)	canonical_change
1.5	2026-10-08	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
1.4	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
1.3	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
1.2	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
1.1	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication)	canonical_change

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.