Safety Data Sheet · OSHA HCS 2024

Phosphoric Acid 85% ACS Grade

ACS Grade · 85% w/w

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-12	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Phosphoric Acid 85% ACS Grade
Grade	ACS Grade
Concentration	85% w/w
CAS Number	7664-38-2
Chemical Formula	H3P04
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Synonyms	Orthophosphoric acid; o-phosphoric acid; phosphoric acid solution
Recommended Use	Laboratory and analytical reagent (ACS grade): buffer preparation, pH adjustment and analysis.
Restrictions on Use	No restrictions identified beyond the conditions of safe use in Sections 7 and 8.

2 Hazard Identification



Corrosive



Irritant / harmful

Classification

Corrosive to metals, Category 1

Acute toxicity (oral), Category 4

Skin corrosion/irritation, Category 1

Serious eye damage/eye irritation, Category 1

Signal Word

Danger

Hazard Statements

H290 May be corrosive to metals

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

Precautionary Statements

P234 Keep only in original packaging.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves, protective clothing, and eye/face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P321 Specific treatment (see first-aid information on this label).

P330 Rinse mouth.

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

P405 Store locked up.

P406 Store in a corrosion resistant container with a resistant inner liner.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Phosphoric acid	7664-38-2	H3PO4	85-86% (w/w)
Water	7732-18-5	H2O	Balance (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion

Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms and Effects

Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.

Ingestion may cause nausea, vomiting and abdominal pain; larger amounts may cause systemic poisoning.

Immediate Medical Attention and Special Treatment

Immediate medical attention is required after eye or skin contact or ingestion; tissue damage may continue after exposure ends.

5 Fire-Fighting Measures

Suitable Extinguishing Media

Dry chemical, CO2, water spray. Use water spray to cool containers.

Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Specific Hazards Arising from the Chemical	Fire may release corrosive and toxic gases. Containers may rupture when heated.
Protective Equipment	Wear self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products	Phosphorus oxides at very high temperature; flammable hydrogen gas from contact with metals.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Do not touch spilled material without protective equipment. Neutralize residue only with a method suitable for the material, then collect.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area. Use corrosion-resistant containers. Keep away from incompatible materials (see Section 10). Keep containers tightly closed.
Specific Storage Precautions	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.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
OSHA PEL	1 mg/m³ TWA
ACGIH TLV	1 mg/m³ TWA / 3 mg/m³ STEL
NIOSH REL	1 mg/m³ TWA / 3 mg/m³ STEL
IDLH	1000 mg/m³

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.
Respiratory Protection	Where mist, spray or dust is generated (e.g., spraying, atomization, pressure washing), use a NIOSH-approved half-face air-purifying respirator with combination acid gas / P100 cartridges. Ensure local exhaust ventilation.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Clear, colorless liquid
Odor	Odorless
Odor Threshold	No data available
pH	< 1
Melting Point / Freezing Point	21 °C (70 °F)
Boiling Point	158 °C (316 °F)
Flash Point	Non-flammable
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	No data available
Vapor Pressure	2.2 mmHg at 20 °C (water vapor)
Vapor Density	No data available
Relative Density	1.69 at 25 °C (water = 1)
Solubility	Miscible with water in all proportions (releases heat)
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	Not applicable
Form	Liquid
Density	1.685 g/cm^3 (85% solution, 25 °C)

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	May be corrosive to metals.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Contact with incompatible materials, metals and bases. Cold: 85% acid freezes at about 21 °C (70 °F).
Incompatible Materials	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).
Hazardous Decomposition Products	Phosphorus oxides at very high temperature; flammable hydrogen gas from contact with metals.

11 Toxicological Information

See below for route-specific acute toxicity data.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach. Ingestion may cause nausea, vomiting and abdominal pain; larger amounts may cause systemic poisoning.
Delayed and Chronic Effects	No delayed or chronic effects identified beyond the classification in Section 2.

Route	Value
LD50 Oral (rat)	1,530 mg/kg (as phosphoric acid); ATE about 1,800 mg/kg for the 85% solution
LD50 Dermal (rabbit)	2,740 mg/kg (as phosphoric acid)

Carcinogen Classification

Agency	Status
IARC	Not listed as carcinogen.
NTP	Not listed as carcinogen.
OSHA	Not listed as carcinogen.

12 Ecological Information

Ecotoxicity	Algae ErC50: 77.9 mg/L (72 h, Pseudokirchneriella subcapitata — pH-driven; ErC50 (growth rate)); Daphnia EC50: > 376 mg/L (48 h, Daphnia magna — pH-driven; >376 mg/L WITH pH adjustment (pH 7.53–7.95)); Fish LC50: 75.1 mg/L (96 h, Oryzias latipes — pH-driven (pH 3.39–4.45, no pH adjustment))
Persistence & Degradability	Not applicable (inorganic; dissociates to phosphate ions). Phosphate may persist and contribute to eutrophication.
Bioaccumulative Potential	log Kow −2.15 (measured); −0.77 (estimated)
Mobility in Soil	High (miscible with water)

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

EPA RCRA Waste Codes	D002 (corrosive, pH ≤ 2, 40 CFR 261.22). Phosphoric acid is not a P- or U-listed waste.

If discarded, this material may be a corrosive hazardous waste (EPA RCRA D002, 40 CFR 261.22): aqueous with pH ≤ 2 or ≥ 12.5, or a liquid that corrodes steel at more than 6.35 mm per year. The waste generator must make the final hazardous-waste determination.

14 Transport Information

US DOT (49 CFR)

UN Number	UN1805

Proper Shipping Name	Phosphoric acid solution
Hazard Class	8
Packing Group	III

IMDG / IATA classifications may differ from US DOT. Verify current regulations before international shipment.

15 Regulatory Information

Inventory / List	Status
California Proposition 65	Not listed
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Not listed
CERCLA Reportable Quantity (RQ)	Phosphoric acid (CAS 7664-38-2) 5,000 lb (2,270 kg), about 5,880 lb or 420 US gal of 85% acid. Not an EPCRA section 302 or 313 chemical.

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-12
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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