Safety Data Sheet · OSHA HCS 2024

# Phosphoric Acid 45% Food Grade

Food

| 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 45% Food Grade |
| Grade | Food |
| Concentration | 45% w/w |
| CAS Number | 7664-38-2 |
| Chemical Formula | H3P04 |
| Manufacturer | Alliance Chemical<br>204 South Edmond Street, Taylor, TX 76574 |
| Emergency Phone | Chemtel 1-800-255-3924 (24/7) |
| Recommended Use | Industrial / laboratory chemical. See Section 7. |
| Restrictions on Use | No restrictions identified beyond the conditions of safe use in Sections 7 and 8. |

## 2 Hazard Identification



Corrosive

| | |
|---|---|
| Classification | Corrosive to metals, Category 1<br>Skin corrosion/irritation, Category 1<br>Serious eye damage/eye irritation, Category 1 |
| Signal Word | **Danger** |
| Hazard Statements | H290 May be corrosive to metals<br>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.

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

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).

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 | 45% (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.

**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

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| **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

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

## 8 Exposure Controls / Personal Protection

### Occupational Exposure Limits

| Limit | Value |
|---|---|
| OSHA PEL | 1 mg/m$^3$ TWA |
| NIOSH REL | 1 mg/m$^3$ TWA / 3 mg/m$^3$ STEL |
| IDLH | 1000 mg/m$^3$ |

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| **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

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|---|---|
| **Appearance** | Clear, colorless, slightly viscous liquid |
| **Odor** | No data available |
| **Odor Threshold** | No data available |
| **pH** | No data available |
| **Melting Point / Freezing Point** | < 0 °C (< 32 °F), freezing point (aqueous solution) |

| | |
|---|---|
| Boiling Point | 100 to 116 °C (212 to 241 °F) (aqueous solution) |
| Flash Point | No data available |
| Evaporation Rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/Lower Flammability or Explosive Limits | No data available |
| Vapor Pressure | No data available |
| Vapor Density | No data available |
| Relative Density | 1.295 at 20/20 °C (water = 1) |
| Solubility | No data available |
| 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 |
| Density | 1.2930 g/cm$^3$ at 20 °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

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| 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. |
| Incompatible Materials | Strong bases (violent reaction); bleach and other hypochlorites (release chlorine) and ammonia; most metals (release flammable hydrogen); sulfides, sulfites and cyanides (release toxic gases). |
| Hazardous Decomposition Products | Phosphorus oxides at very high temperature; flammable hydrogen gas from contact with metals. |

## 11 Toxicological Information

See Section 2 for GHS hazard classification.

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|---|---|
| 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. |
| Delayed and Chronic Effects | No delayed or chronic effects identified beyond the classification in Section 2. |
| Numerical Measures of Toxicity | No data available |

### Carcinogen Classification

| Agency | Status |
|---|---|
| IARC | Not listed as carcinogen. |

| Agency | Status |
|---|---|
| NTP | Not listed as carcinogen. |
| OSHA | Not listed as carcinogen. |

## 12 Ecological Information

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|---|---|
| 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.

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)

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| 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 |

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

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| Revision Date | 2026-11-12 |

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| **Format** | 16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7. |

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