

# • SAFETY DATA SHEET

Version 6.10  
Revision Date 09/12/2025  
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Phosphorous acid

Product Number : 215112  
Brand : SIGALD  
Index-No. : 015-157-00-0  
CAS-No. : 13598-36-2

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

Corrosive to metals : Category 1

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Acute toxicity (Oral) : Category 4  
Skin corrosion : Category 1A  
Serious eye damage : Category 1

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



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 : **Prevention:**  
P234 Keep only in original container.  
P260 Do not breathe dust or mist.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
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/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
**Storage:**  
P405 Store locked up.  
P406 Store in corrosive resistant container with a

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resistant inner liner.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

**Components**

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Phosphorous acid	13598-36-2*	$\geq 90 - \leq 100$	-

\* Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

- General advice : First aiders need to protect themselves.  
Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Call in physician.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
Call a physician immediately.
- In case of eye contact : After eye contact: rinse out with plenty of water.  
Immediately call in ophthalmologist.  
Remove contact lenses.
- If swallowed : After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation).  
Call a physician immediately.  
Do not attempt to neutralise.
- Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
- Protection of first-aiders : For personal protection see section 8.
- Notes to physician : No data available

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### SECTION 5. FIREFIGHTING MEASURES

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Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting : Not combustible.

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : Oxides of phosphorus

Specific extinguishing methods : No data available

Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
Avoid inhalation of dusts.  
Avoid substance contact.

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Ensure adequate ventilation.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
For personal protection see section 8.

Environmental precautions	: Do not let product enter drains.
Methods and materials for containment and cleaning up	: Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Conditions for safe storage	: No metal containers.
Further information on storage conditions	: Tightly closed. Dry.
Storage class	: 8A, Combustible, corrosive hazardous materials
Recommended storage temperature	: Recommended storage temperature see product label.
Further information on storage stability	: Store under inert gas. Air sensitive.
Packaging material	: Suitable material: Poly Drum

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection

system.

Recommended Filter : Filter type P2  
type:

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Full contact  
Manufacturer : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Manufacturer : data source: KCL GmbH, D-36124 Eichenzell, phone  
+49 (0)6659 87300, e-mail sales@kcl.de, test  
method: EN374

Remarks : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Tightly fitting safety goggles

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : flakes

Color : white

Odor : odourless

Odor Threshold : No data available  
pH : acidic

Melting point/ range : 145 - 165 °F / 63 - 74 °C  
(1,013 hPa)  
Method: OECD Test Guideline 102  
GLP: yes

Boiling point : 498 °F / 259 °C (1,013 hPa)  
Method: OECD Test Guideline 103  
GLP: yes

Flash point : Not applicable

Evaporation rate : No data available

Burning rate : No data available

Self-ignition : Autoignition temperature  
Method: Relative self-ignition temperature for solids  
GLP: yes  
not auto-flammable

Upper explosion limit /  
Upper flammability limit : No data available

Lower explosion limit /  
Lower flammability limit : No data available

Vapor pressure : < 0.1 hPa (68 °F / 20 °C)  
Method: OECD Test Guideline 104  
GLP: yes

Relative vapour density : No data available

Relative density : No data available

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Density	: 1.651 g/cm <sup>3</sup> (77 °F / 25 °C) Method: lit.
Solubility(ies) Water solubility	: soluble
Partition coefficient: n-octanol/water	: Not applicable for inorganic substances
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: No data available
Oxidizing properties	: Method: NF T 20-035 GLP: yes The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, Oxidizing properties).
Molecular weight	: 82.00 g/mol
Particle characteristics Particle size	: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No data available
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: No data available
Conditions to avoid	: no information available
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 1,560 - 1,580 mg/kg  
(OECD Test Guideline 401)

Inhalation: Corrosive to respiratory system.

Dermal: No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive - 4 h

Remarks: (ECHA)

#### Serious eye damage/eye irritation

Remarks: Causes serious eye damage.

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): micronucleus.

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 487

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### Reproductive toxicity

No data available

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

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**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 250 mg/kg

RTECS: SZ6400000

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Phosphorous acid:**

- Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 203  
GLP: yes
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 153 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

**Persistence and degradability****Components:****Phosphorous acid:**

- Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

**Bioaccumulative potential****Components:****Phosphorous acid:**

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Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

#### **Mobility in soil**

No data available

#### **Other adverse effects**

#### **Components:**

#### **Phosphorous acid:**

Additional ecological information : May be harmful to aquatic organisms due to the shift of the pH.

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### **SECTION 13. DISPOSAL CONSIDERATIONS**

#### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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### **SECTION 14. TRANSPORT INFORMATION**

#### **International Regulations**

##### **IATA-DGR**

UN/ID No. : UN 2834  
Proper shipping name : Phosphorous acid  
Class : 8  
Packing group : III  
Labels : Class 8 - Corrosive substances  
Packing instruction (cargo aircraft) : 864  
Packing instruction (passenger aircraft) : 860

##### **IMDG-Code**

UN number : UN 2834  
Proper shipping name : PHOSPHOROUS ACID  
  
Class : 8  
Packing group : III  
Labels : 8  
EmS Code : F-A, S-B  
Marine pollutant : yes

#### **Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

#### **National Regulations**

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**49 CFR Road**

UN/ID/NA number : UN 2834  
Proper shipping name : Phosphorous acid

Class : 8  
Packing group : III  
Labels : Class 8 - Corrosive substances  
ERG Code : 154  
Marine pollutant : no

Poison Inhalation Hazard : No

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

Components	CAS-No.	Component TPQ (lbs)
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**SARA 311/312 Hazards** : Acute Health Hazard

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations****Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Phosphorous acid 13598-36-2

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

### **Washington Chemicals of High Concern**

Product does not contain any listed chemicals

### **New Jersey Right To Know**

Phosphorous acid

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### **The components of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16. OTHER INFORMATION**

### **Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and

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Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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