

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 06/11/2025

Revised on 06/11/2025

1 Identification

- **Product Identifier**
- **Trade Name: RESTORE**
- **Other means of identification**
- **Product Number:** 1700-0140
- **Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Product Description:** Metal Ion Removal Solution
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Pickering Laboratories, Inc.
1280 Space Park Way
Mountain View, CA 94043
Phone: (650) 694-6700
Fax: (650) 968-0749
www.pickeringlabs.com
support@pickeringlabs.com
- **Emergency telephone number:**
Clean Harbors Environmental Services
1-800-645-8265

* 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



Corrosion

Skin corrosion 1B H314 Causes severe skin burns and eye damage.
Eye damage 1 H318 Causes serious eye damage.

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Danger
- **Hazard statements:**
H314 Causes severe skin burns and eye damage.
- **Precautionary statements:**
 - P260 Do not breathe dusts or mists.
 - P264 Wash thoroughly after handling.
 - P280 Wear eye protection / face protection.
 - P280 Wear protective gloves/protective clothing/eye protection/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/doctor.
 - P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

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- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.
0 % of the mixture consists of component(s) of unknown toxicity.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Hazard(s) not otherwise classified (HNOC):** None known

· **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/Information on Ingredients

· **Chemical characterization: Substance**

· **Description:**

Mixture of substances listed with non-hazardous additions and/or components that are less than listing threshold. All non-hazardous, components listed under threshold, and listed component total 100%.

· **Dangerous Components:**

CAS: 7664-38-2 RTECS: TB 6300000	Phosphoric acid ⚠ Corrosive to metals 1, H290; Skin corrosion 1B, H314 Specific concentration limits: Skin Corrosion 1B; H314: C ≥ 25 % Skin Irritation 2; H315: 10 % ≤ C < 25 % Eye Irritation 2; H319: 10 % ≤ C < 25 %	3.9-4.2%
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· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

* 4 First-Aid Measures

· **Description of first aid measures**

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:**

Not anticipated under normal use.

In case of unconsciousness place patient stably in the side position for transportation.

· **After skin contact:**

Seek medical treatment.

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Immediately wash with water and soap and rinse thoroughly.

Immediate medical treatment is necessary. Failure to treat burns can prevent wounds from healing.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

If easy to do so, remove contact lenses if worn.

If eye irritation occurs, consult a doctor.

· **After swallowing:**

Rinse mouth with water ensuring that rinse is not swallowed. Drink 2 glasses of water to dilute and induce vomiting by touching finger to the back of the victims throat. Get medical assistance immediately.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

If swallowed and symptoms occur, consult a doctor.

· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

* **5 Fire-Fighting Measures**

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No further relevant information.

· **Special hazards arising from the substance or mixture:** No further relevant information available.

· **Advice for firefighters**

· **Special protective equipment for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:** Dilute with plenty of water.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the collected material according to regulations.

· **PAC-1:**

7664-38-2	Phosphoric acid	3 mg/m ³
7778-77-0	Potassium Phosphate	9.6 mg/m ³

· **PAC-2:**

7664-38-2	Phosphoric acid	30 mg/m ³
7778-77-0	Potassium Phosphate	110 mg/m ³

· **PAC-3:**

7664-38-2	Phosphoric acid	150 mg/m ³
7778-77-0	Potassium Phosphate	630 mg/m ³

· **Reference to other sections:**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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7 Handling and Storage

- **Precautions for safe handling:**
 Avoid contact with skin, eyes and clothing
 Avoid breathing fumes.
 Use personal protection equipment as outlined in section 8.
 Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
 Store in dry conditions at a temperature range of 8°C - 25°C.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

* 8 Exposure Controls/Personal Protection

- **Control parameters:**
- **Components with occupational exposure limits:**

7664-38-2 Phosphoric acid	
PEL	Long-term value: 1 mg/m ³
REL	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
TLV	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment**
- **General protective and hygienic measures:**
 Use adequate exhaust ventilation to prevent inhalation of product vapors.
 Do not eat or drink while handling product.
 The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing and wash before reuse.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes.
 Avoid contact with the eyes and skin.
- **Breathing equipment:**
 Respiratory protection is not required unless handling of the material produces nuisance airborne concentrations.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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· **Material of gloves:**

Latex or vinyl

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Lab coat

· **Limitation and supervision of exposure into the environment:** None

* 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Liquid

· **Color:**

Colorless

· **Odor:**

Odorless

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

Not determined.

· **Boiling point/Boiling range:**

≥100 °C (≥212 °F)

· **Flammability:**

Not applicable.

· **Explosion limits:**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

None

· **Auto igniting:**

Not applicable

· **Decomposition temperature:**

Not determined.

· **pH-value @ 20 °C (68 °F):**

1.3

· **Viscosity:**

· **Kinematic:**

Not determined.

· **Dynamic:**

Not determined.

· **Solubility in / Miscibility with:**

· **Water:**

Fully miscible.

· **Partition coefficient (n-octanol/water):**

Not determined.

· **Vapor pressure @ 20 °C (68 °F):**

≤23 hPa (≤17.3 mm Hg)

· **Vapor pressure:**

· **Density @ 20 °C (68 °F):**

1.0361 g/cm³ (8.6463 lbs/gal)

· **Relative density:**

Not determined.

· **Vapor density:**

Not determined.

· **Particle characteristics**

Not applicable.

· **Other information:**

· **Appearance:**

· **Form:**

Liquid

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· **Important information on protection of health and environment, and on safety.**

- **Ignition temperature:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Solvent content:**
- **VOC content:** 0.00 %
- **Change in condition**
- **Evaporation rate:** Not determined.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Product is stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

***11 Toxicological Information**

- **Information on toxicological effects:**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:		
7664-38-2 Phosphoric acid		
Oral	LD50	>5,000 mg/kg (Rat) (OECD Test Guideline 423)
Dermal	LD50	2,740 mg/kg (rabbit)
Remarks: Behavioral: Somnolence (general depressed activity). Behavioral: Excitement.		

- **Primary irritant effect:**
- **On the skin:** Strong caustic effect on skin and mucous membranes.
- **On the eye:**
Strong irritant with the danger of severe eye injury.
Corrosive effect.
Causes serious eye irritation.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Irritant
Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories:**

· IARC (International Agency for Research on Cancer):
None of the ingredients are listed.

· NTP (National Toxicology Program):
None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration):
None of the ingredients are listed.

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- **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

12 Ecological Information

- **Toxicity:**

<ul style="list-style-type: none"> · Aquatic toxicity:
7664-38-2 Phosphoric acid
EC50 4.6 mg/l (Daphnia)

- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:**
- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

13 Disposal Considerations

- **Waste treatment methods**
- **Recommendation:**
Do not allow product to reach sewage system.
This product may be mixed with a combustible solvent and burned in a chemical incinerator equipped with an afterburner and scrubber. This product can also be sent to an EPA approved waste disposal facility.
Must not be disposed of together with household waste. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR/ADN, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.

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- **Special precautions for user:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
No further relevant information available.
- **SARA (Superfund Amendments and Reauthorization):**

Section 355 (extremely hazardous substances):	None of the ingredients are listed.
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Section 313 (Specific toxic chemical listings):	7664-38-2 Phosphoric acid
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TSCA (Toxic Substances Control Act):	All components have the value ACTIVE.
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Hazardous Air Pollutants	None of the ingredients are listed.
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· **California Proposition 65:**

Chemicals known to cause cancer:	None of the ingredients are listed.
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Chemicals known to cause reproductive toxicity for females:	None of the ingredients are listed.
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Chemicals known to cause reproductive toxicity for males:	None of the ingredients are listed.
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Chemicals known to cause developmental toxicity:	None of the ingredients are listed.
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New Jersey Right-to-Know List:	7664-38-2 Phosphoric acid
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New Jersey Special Hazardous Substance List:	7664-38-2 Phosphoric acid	CO
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Pennsylvania Right-to-Know List:	7664-38-2 Phosphoric acid
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Pennsylvania Special Hazardous Substance List:	7664-38-2 Phosphoric acid	E
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· **Carcinogenic categories:**

EPA (Environmental Protection Agency):	None of the ingredients are listed.
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TLV (Threshold Limit Value established by ACGIH):	None of the ingredients are listed.
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NIOSH-Ca (National Institute for Occupational Safety and Health):	None of the ingredients are listed.
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· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms:**



· **Signal word:** Danger

· **Hazard statements:**

H314 Causes severe skin burns and eye damage.

· **Precautionary statements:**

P260 Do not breathe dusts or mists.

P264 Wash thoroughly after handling.

P280 Wear eye protection / face protection.

P280 Wear protective gloves/protective clothing/eye protection/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/doctor.

P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

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

· **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of previous version** 03/31/2021

· **Version number of previous version:** 9

· **Date of preparation** 06/11/2025

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Corrosive to metals 1: Corrosive to metals – Category 1

Skin corrosion 1B: Skin corrosion/irritation – Category 1B

Eye damage 1: Serious eye damage/eye irritation – Category 1

*** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106