



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US OSHA HCS 2024

Issuing Date 20-May-2026

Revision date 20-May-2026

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** Metal Remover

### Other means of identification

**UN number or ID number** UN3265

**Synonyms** FROG Metal Remover

### Recommended use of the chemical and restrictions on use

**Recommended use** Swimming Pools, Hot Tubs and Swim Spas

**Restrictions on use** Use only for intended applications

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

#### Manufacturer Address

King Technology, Inc.  
6000 Clearwater Dr.  
Minnetonka, MN 55343  
+1 (952) 933-6118

**E-mail** sdsinfo@kingtechnology.com

### Emergency telephone number

**Emergency telephone** Chemtrec 1-800-424-9300

## 2. Hazard(s) identification

### Classification of the substance or mixture

Corrosive to metals	Category 1
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

### Hazards not otherwise classified (HNOC)

Not applicable.

### Label elements

**Danger**

**Hazard statements**

May be corrosive to metals.

Causes skin irritation.

Causes serious eye damage.

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling.

Keep only in original packaging.

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

**Precautionary Statements - Response**

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 or doctor.

If skin irritation occurs: Get medical advice and attention.

Take off contaminated clothing and wash it before reuse.

IF ON SKIN: Wash with plenty of water and soap.

Absorb spillage to prevent material damage.

**Precautionary Statements - Storage**

Store in corrosion resistant container with a resistant inner liner.

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available.

**Other information**

May be harmful if swallowed.

### 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

Chemical name	CAS No.	Weight-%	Trade secret / Unique identifier
Phosphonic acid	2809-21-4	55 - 65	*
Phosphorus Acid	13598-36-2	1 - 2	*

The specific chemical identity and/or concentration (exact or range) of the composition has been withheld as a trade secret.

### 4. First-aid measures

**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

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<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	Burning sensation. May cause blindness. May cause redness and tearing of the eyes. Erythema (skin redness).
<b>Effects of Exposure</b>	None known.

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

<b>Note to physicians</b>	Treat symptomatically.
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**5. Fire-fighting measures**

<b>Suitable Extinguishing Media</b>	Dry chemical, CO <sub>2</sub> , water spray or regular foam.
<b>Unsuitable extinguishing media</b>	None known based on information supplied.
<b>Specific hazards arising from the chemical</b>	None known based on information supplied.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protective equipment.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

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

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled waste containers. Clean contaminated surface thoroughly.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Use personal protective equipment.

**General hygiene considerations** Wear eye and face protection. Wear protective gloves, eye protection and face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store away from other materials. Keep only in original packaging. Store in corrosion resistant container with a resistant inner liner.

## 8. Exposure controls/personal protection

### Control Parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Face protection shield. Tight sealing safety goggles.

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection** Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Clear liquid
<b>Physical state</b>	Liquid
<b>Color</b>	Colorless
<b>Odor (includes odor threshold)</b>	Odorless

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point		No data available
Boiling point (or initial boiling point or boiling range)	> 100 °C / 212 °F	
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
SADT (°C)		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Solubility		No data available
Water solubility	Soluble in hot water, partially in cold	
Partition coefficient n-octanol/water (log value)		No data available
Vapor pressure (includes evaporation rate)	17 mmHg	@ 20 °C
Evaporation rate		No data available
Density and/or relative density		No data available
Bulk density		No data available
Liquid Density		No data available
Relative vapor density		No data available
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available
<u>Other information</u>		
Molecular weight	No information available	
VOC content	No information available	
Softening point	No information available	
<u>Explosives</u>		
Explosive properties	No information available	
Oxidizing properties	No information available	

## 10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Incompatible materials.
Incompatible materials	Strong bases, Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides, Phosphorus oxides.

## 11. Toxicological information

### Information on likely routes of exposure

**Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. May result in permanent damage including blindness. Causes serious eye damage.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**

<b>Symptoms</b>	Burning sensation. May cause blindness. May cause redness and tearing of the eyes. Erythema (skin redness).
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**Acute toxicity****Numerical measures of toxicity**

The following ATE values have been calculated for the mixture:

ATEmix (oral)	> 2,000 mg/kg
ATEmix (dermal)	> 5,000 mg/kg

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphonic acid 2809-21-4	= 3130 mg/kg ( Rat )	> 10000 mg/kg ( Rabbit )	-
Phosphorus Acid 13598-36-2	= 1895 mg/kg ( Rat )	-	-

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	No information available.
<b>Other adverse effects</b>	No information available.
<b>Interactive effects</b>	No information available.

**12. Ecological information**

**Ecotoxicity** Based on available data, the classification criteria are not met.

**Aquatic ecotoxicity**

**Component Information**

Chemical name	Fish	Crustacea	Algae/aquatic plants	Toxicity to microorganisms
Phosphonic acid	LC50: =868mg/L (96h, Lepomis macrochirus) LC50: =360mg/L (96h, Oncorhynchus mykiss)	EC50: =527mg/L (48h, Daphnia magna)	-	-
Phosphorus Acid	LC50: 6980 - 9784mg/L (96h, Brachydanio rerio)	-	-	-

**Terrestrial ecotoxicity**

**Component Information**

Chemical name	Earthworm	Avian	Honeybees
Phosphonic acid	Acute Toxicity: LC50 > 1000 mg/kg (Eisenia foetida, 14 Days soil dry weight) NOEC = 1000 mg/kg (Eisenia foetida, 14 Days soil dry weight)	-	-

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Component Information**

Chemical name	Partition coefficient	Bioconcentration factor (BCF)	Trophic magnification factor (TMF)
Phosphonic acid	-3.5	50	-

**Mobility in soil** No information available.

**Other adverse effects** No information available.

## 13. Disposal considerations

**Disposal methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. Transport information

**Note:** As supplied this product is consigned under the Limited Quantities provisions.

### DOT

UN number or ID number	UN3265
Proper shipping name	Corrosive liquid, acidic, organic, n.o.s.
Transport hazard class(es)	8
Packing group	III
Special Provisions	386, IB3, T7, TP1, TP28
DOT Marine Pollutant	NP
Description	UN3265, Corrosive liquid, acidic, organic, n.o.s. (Phosphorus Acid, Phosphonic acid), 8, III
Emergency Response Guide Number	153

### IATA

UN number or ID number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s.
IATA Technical Name	Phosphorus Acid, Phosphonic acid
Transport hazard class(es)	8
Packing group	III
Environmental hazards	No
Special Provisions	A3, A803
ERG Code	8L
Description	UN3265, Corrosive liquid, acidic, organic, n.o.s. (Phosphorus Acid, Phosphonic acid), 8, III

### IMDG

UN number or ID number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s.
Technical Name	Phosphorus Acid, Phosphonic acid
Transport hazard class(es)	8
Packing group	III
Marine pollutant indicator	NP
Special Provisions	223, 274
EmS-No.	F-A, S-B
Description	UN3265, Corrosive liquid, acidic, organic, n.o.s. (Phosphorus Acid, Phosphonic acid), 8, III

## 15. Regulatory information

### International Inventories

Contact supplier for inventory compliance status

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40

CFR 122.42).

#### CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

#### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

#### US State Regulations

##### California Proposition 65

This product does not contain any Proposition 65 chemicals.

#### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphorus Acid 13598-36-2	X	-	-

#### U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

#### International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

### 16. Other information

<b>NFPA</b>	<b>Health hazards</b> 3	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Special hazards</b> -
<b>HMIS</b>	<b>Health hazards</b> 3	<b>Flammability</b> 0	<b>Physical hazards</b> 4	<b>Personal protection</b> -

#### Key or legend to abbreviations and acronyms used in the safety data sheet

List may include phrases which are not applicable to this product

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)
AIIC	Australian Inventory of Industrial Chemicals
ATE	Acute Toxicity Estimate
ASTM	American Society for the Testing of Materials
bar	Biological Reference Values for Chemical Compounds in the Work Area
BAT	Biological tolerance values for occupational exposure
BEL	Biological exposure limits

bw	Body weight
Ceiling	Maximum limit value
CMR	Carcinogen, Mutagen or Reproductive Toxicant
DOT	Department of Transportation (United States)
DSL	Domestic Substances List (Canada)
ECEL	Existing Chemical Exposure Limit
EINECS	European Inventory of Existing Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ENCS	Existing and New Chemical Substances (Japan)
EPA	U.S. Environmental Protection Agency
GHS	Globally Harmonized System
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
ICAO	International Civil Aviation Organization
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
KECI	Korean 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
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOELR	No Observable Effect Loading Rate
NTP	National Toxicology Program (United States)
NZIoC	New Zealand Inventory of Chemicals
OECD	Organization for Economic Cooperation and Development
OEL	Occupational exposure limits
OSHA	Occupational Safety and Health Administration of the US Department of Labor
PBT	Persistent, Bioaccumulative and Toxic substance
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PMT	Persistent, Mobile and Toxic
PPE	Personal protective equipment
QSAR	Quantitative Structure Activity Relationship
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)
SADT	Self-Accelerating Decomposition Temperature
SAR	Structure-activity relationship
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
SL	Surface Limit
STEL	Short Term Exposure Limit
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
TCSI	Taiwan Chemical Substance Inventory
TDG	Transport of Dangerous Goods (Canada)
TSCA	Toxic Substances Control Act (United States)

TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
DS	Dermal Sensitizer
Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitizer
RS	Respiratory Sensitizer
S	Sensitizer
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation
dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

**Key literature references and sources for data used to compile the SDS**

U.S. Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 U.S. Environmental Protection Agency  
 U.S. EPA Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 U.S. Hazardous Substance Data Bank (HSDB)  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 U.S. National Institute for Occupational Safety and Health (NIOSH)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications  
 International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program  
 International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set  
 United Nations World Health Organization (WHO)

**Issuing Date** 20-May-2026

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**Revision Note** Initial Release.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**