

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product Name** KC-400

**Other means of identification**

**Product Code** 20421

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

**Recommended Use** Scale and buildup remover

**Uses advised against** Follow the directions for use on the label when applying this product

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

PSSI Chemical Innovations  
3729 Peddle Hollow Road  
Kieler, WI 53812 USA

**Emergency telephone number**

**Company Phone Number** 888-671-5366  
**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 1
Skin corrosion/irritation	Category 1
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Carcinogenicity	Category 1A

**Label elements**

**Emergency Overview**

**DANGER**

**Hazard statements**

Causes severe skin burns and eye damage  
Toxic if inhaled  
May cause cancer upon inhalation of strong inorganic acid mist



**Physical state** Liquid

**Color** Pink

**Odor** Sour

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Use only outdoors or in a well-ventilated area  
Do not breathe dusts or mists  
Wash face, hands and any exposed skin thoroughly after handling

**Precautionary Statements - Response**

Specific treatment (see Section 4 on SDS)  
Immediately call a POISON CENTER or doctor  
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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash contaminated clothing before reuse  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed. Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

- Toxic to aquatic life with long lasting effects

<b>3. COMPOSITION/INFORMATION ON INGREDIENTS</b>		
<b>Chemical Name</b>	<b>CAS No.</b>	<b>Weight-%</b>
Water	7732-18-5	50-80
Phosphoric acid	7664-38-2	10-40
Nitric acid	7697-37-2	1-10

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. FIRST AID MEASURES**

**First aid measures**

**Eye contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Seek immediate medical attention/advice.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing and shoes before reuse. For severe burns, immediate medical attention is required.

**Inhalation** Remove to fresh air. Administer oxygen if breathing is difficult. Call a physician immediately.

**Ingestion** Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

**Symptoms** See Section 11 for symptom information.

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

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

Dry chemical. Water spray (fog). Carbon dioxide (CO2). Foam.

**Unsuitable extinguishing media** No information available.

**Specific hazards arising from the chemical**

NFPA Class 1 oxidizer. Exothermic reaction will occur upon dilution with water.

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO2). Phosphorus oxides. Nitrogen oxides (NOx).

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers with flooding quantities of water until well after fire is out. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

**6. ACCIDENTAL RELEASE MEASURES**

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

**Personal precautions** Use personal protection recommended in Section 8. Ensure adequate ventilation, especially in confined areas.

**For emergency responders** Isolate area. Keep unnecessary personnel away.

**Environmental precautions**

**Environmental precautions** Prevent entry into waterways, sewers, basements or confined areas. See section 12 for additional ecological information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

**Methods for cleaning up** Collect spillage. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Following product recovery, flush area with water.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Use only in well-ventilated areas. Avoid breathing vapors or mists. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep from freezing. NFPA Class 1 oxidizers must be separated by at least 8 feet from incompatible materials and combustible commodities (NFPA 400 Table 15.3.2.2.2(A)(b) 2016 edition). Oxidizers need to be separated by at least 25 feet from flammable and combustible liquid containers. Separation shall be maintained by dikes, drains, or floor slopes to prevent flammable liquid leakage from encroaching on the separation (NFPA 400 15.2.12.13.1). At least one side of each pile of oxidizers shall be on an aisle (NFPA 400, 15.2.11.3 2016 edition).

**Incompatible materials** Chlorinated compounds. Cyanides. Alkali. Certain soft metals.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphoric acid 7664-38-2	STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) STEL: 3 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>
Nitric acid 7697-37-2	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm, 5 mg/m <sup>3</sup> (vacated) STEL: 4 ppm, 10 mg/m <sup>3</sup>	IDLH: 25 ppm TWA: 2 ppm, 5 mg/m <sup>3</sup> STEL: 4 ppm, 10 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** Showers, eyewash stations, ventilation system.

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

- Eye/face protection** Splash proof chemical goggles and face shield.
- Skin and body protection** Wear protective Neoprene™ gloves or rubber gloves. Wear suitable protective clothing. Rubber boots recommended.
- Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing and shoes before reuse. Do not eat, drink or smoke when using this product.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid	<b>Odor</b>	Sour
<b>Appearance</b>	Aqueous solution	<b>Odor threshold</b>	No information available
<b>Color</b>	Pink	<b>Remarks • Method</b>	
<b>Property</b>	<b>Values</b>		
<b>pH</b>	1		±1 @ 21°C
<b>Melting point / freezing point</b>	< -7 °C / < 20 °F		
<b>Boiling point / boiling range</b>	No information available		
<b>Flash point</b>	Not flammable		
<b>Evaporation rate</b>	No information available		
<b>Flammability (solid, gas)</b>	No information available		
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit:</b>	No information available		
<b>Lower flammability limit:</b>	No information available		
<b>Vapor pressure</b>	No information available		
<b>Vapor density</b>	No information available		
<b>Specific Gravity</b>	1.24 g/cc		
<b>Water solubility</b>	Completely soluble		
<b>Solubility in other solvents</b>	No information available		
<b>Partition coefficient</b>	No information available		
<b>Autoignition temperature</b>	No information available		
<b>Decomposition temperature</b>	No information available		
<b>Kinematic viscosity</b>	No information available		
<b>Dynamic viscosity</b>	No information available		
<b>Explosive properties</b>	No information available		
<b>Oxidizing properties</b>	No information available		
<b>VOC Content (%)</b>	0.00%		

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

Add product to water, never add water to this product. Exothermic reaction will occur upon dilution with water.

**Incompatible materials**

Chlorinated compounds. Cyanides. Alkali. Certain soft metals.

**Hazardous Decomposition Products**

Carbon monoxide. Carbon dioxide (CO2). Phosphorus oxides. Nitrogen oxides (NOx).

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**

<b>Inhalation</b>	Inhalation of vapors in high concentration may cause irritation of respiratory system. Vapors may be irritating to eyes, nose, throat, and lungs.
<b>Eye contact</b>	Risk of serious damage to eyes. Corrosive to the eyes and may cause severe damage including blindness.
<b>Skin Contact</b>	Corrosive. Contact causes severe skin irritation and possible burns.
<b>Ingestion</b>	Harmful if swallowed. Can burn mouth, throat, and stomach. Ingestion causes burns of the upper digestive and respiratory tracts.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphoric acid 7664-38-2	= 1530 mg/kg ( Rat )	= 2740 mg/kg ( Rabbit )	> 850 mg/m <sup>3</sup> ( Rat ) 1 h
Nitric acid 7697-37-2	-	-	= 2500 ppm ( Rat ) 1 h

**Information on toxicological effects**

**Symptoms** No information available.

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

**Sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nitric acid 7697-37-2	-	Group 2A Group 1	-	X

**Legend**

**IARC (International Agency for Research on Cancer)**

Group 2A - Probably Carcinogenic to Humans (Nitrate or nitrite (ingested) has been shown to be carcinogenic only under conditions that result in endogenous nitrosation)

Group 1 - Carcinogenic to Humans (May cause cancer upon inhalation of strong inorganic acid mists)

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

**Unknown Acute Toxicity** 0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

**Oral LD50** 4,636.40 mg/kg

**Dermal LD50** 8,303.00 mg/kg

**Mist** 0.6445 mg/l

**Vapor** 64.1075 mg/l

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Toxic to aquatic life with long lasting effects

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Phosphoric acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	4.6: 12 h Daphnia magna mg/L EC50
Nitric acid 7697-37-2	-	72: 96 h Gambusia affinis mg/L LC50	-

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
Nitric acid - 7697-37-2	-2.3

**Mobility**

Soluble in water.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging**

Dispose of in accordance with federal, state and local regulations.

**14. TRANSPORT INFORMATION**

**DOT**

<b>UN/ID No.</b>	3264
<b>Proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (contains phosphoric and nitric acids)
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>Emergency Response Guide Number</b>	154

**15. REGULATORY INFORMATION**

**International Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies

**Legend:**

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Nitric acid - 7697-37-2	1.0

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid 7664-38-2	5000 lb	-	-	X
Nitric acid 7697-37-2	1000 lb	-	-	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Nitric acid 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**California Proposition 65**

WARNING! "This product can expose you to chemicals which is [are] known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov." 9-(2-carboxyphenyl)-3,6-bis(diethylamino)xanthylium chloride 81-88-9;

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

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid 7664-38-2	X	X	X
Nitric acid 7697-37-2	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION**

<b>NFPA</b>	Health hazards 3	Flammability 0	Instability 0	<b>Physical and Chemical Properties</b> OX - Oxidizer Corrosive, Acid <b>Personal protection</b> H (splash goggles, gloves, synthetic apron, vapor respirator)
<b>HMIS</b>	Health hazards 3	Flammability 0	Physical hazards 0	

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**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 health hazards given on this SDS apply to this product in its concentrated form (as supplied) and may differ significantly at use dilution. The signs and symptoms of exposure apply only to negligence in handling or misuse of the concentrated product and not to the routine exposure of the diluted product under conditions of ordinary use.

**End of Safety Data Sheet**