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Revision Number 2

This safety data sheet was created pursuant to the requirements of 29 CFR 1910.1200

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

Product identifier

Product Name Phosphorus - 1000 mg/L, 125 mL
Product Number 063
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use For Research and Development purposes only. Must only be handled by technically qualified individuals
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier ERA, A Waters Company
Supplier Address 16341 Table Mountain Parkway, Golden, CO 80403 USA
Non-Emergency Telephone Number +1-303-431-8454
E-mail address sdsinfo@eraqc.com

Emergency telephone number

Company Emergency Phone Number In case of EMERGENCY call CHEMTREC Day or Night
 Within USA and Canada: 800-424-9300
 International Call Collect: +1-703-527-3887

2. Hazard(s) identification

Classification

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

Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Corrosive to Metals	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Signal Word WARNING

hazard statements

CAUSES SKIN IRRITATION
 Causes serious eye irritation
 MAY BE CORROSIVE TO METALS



Appearance Clear, colorless**Physical state** Liquid**Odor** Odorless**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep only in original container
 Wear eye/face protection

Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label)

EYES

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

skin

IF ON SKIN: Wash with plenty of soap and water
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash before reuse

Spill

Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown toxicity

1 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

No information available

Interactions with other chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Nitric Acid	7697-37-2	1

4. First-aid measures

First aid measures**General advice**

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

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

	eye wide open while rinsing. Do not rub affected area. Seek immediate medical attention/advice. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
INHALATION	Remove to fresh air. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen.
INGESTION	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Most important symptoms and effects Burning sensation. Burning.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

CO₂ (except for Cyanides), dry chemical, dry sand, alcohol-resistant foam. Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk. Use water spray or fog; do not use straight streams. Dike fire control water for later disposal; do not scatter the material.

Unsuitable Extinguishing Media

Note: Most foams will react with the material and release corrosive/toxic gases.

Specific Hazards Arising from the Chemical

Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Substance will react with water (some violently), releasing corrosive and/or toxic gases. Reaction with water may generate much heat which will increase the concentration of fumes in the air. Containers may explode when heated or if contaminated with water.

Uniform Fire Code Irritant: Liquid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to mechanical impact NO.

Sensitivity to static discharge NO.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do it without risk.

OTHER INFORMATION Do not get water inside containers.

Advice for emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.

Methods and material for containment and cleaning up

Methods for Containment A vapor suppressing foam may be used to reduce vapors. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

Methods for Cleaning Up Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. Handling and Storage

Precautions for safe handling

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. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitric Acid 7697-37-2	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection If splashes are likely to occur, wear safety glasses with side-shields. Face protection shield. If splashes are likely to occur: None required for consumer use.

Skin and Body Protection Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves. Chemical resistant apron.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Liquid	Odor	Odorless
Appearance	Clear, colorless	Odor Threshold	No information available
Color	No information available		
Property	Values	Remarks	Method
pH	<= 2		
Melting / freezing point	No data available	None known	
Boiling point / boiling range	> 37.7 °C / 99.9 °F	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific gravity	1		
Water Solubility	Soluble in water		
Solubility in Other Solvents	no data available	None known	

Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	no data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product information****INHALATION**

Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye Contact

Specific test data for the substance or mixture is not available. (based on components). Causes serious eye irritation. Causes burns. Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact

Specific test data for the substance or mixture is not available. (based on components). Corrosive. Causes burns.

INGESTION

Specific test data for the substance or mixture is not available. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid 7697-37-2	-	-	= 2500 ppm (Rat) 1 h = 130 mg/m ³ (Rat) 4 h

Information on toxicological effects

Symptoms Erythema (skin redness). May cause redness and tearing of the eyes. Burning. Coughing and/ or wheezing.

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

Sensitization 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

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

Group 1 - Carcinogenic to Humans

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.

Chronic toxicity No known effect based on information supplied. Effects from this product caused by acute exposure may cause permanent damage to target organs and/or may cause chronic conditions. Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen.

Target Organ Effects Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Teeth.

Aspiration hazard No information available.

Numerical measures of toxicity Product Information

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

Not Applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nitric Acid 7697-37-2		96h LC50: = 72 mg/L (Gambusia affinis)		

Persistence and Degradability

No information available.

Bioaccumulation

Chemical name	Log Pow
Nitric Acid 7697-37-2	-2.3

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated packaging	Dispose of contents/containers in accordance with local regulations.
US EPA Waste Number	D002

California Hazardous Waste Codes 791

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste
Nitric Acid 7697-37-2	Toxic Corrosive Ignitable

14. TRANSPORT INFORMATION

Transportation classifications may vary depending on the quantity per package and may be influenced by regional or country variations in regulations.

DOT

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III
Emergency Response Guide Number	154

TDG

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

MEX

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

ICAO

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

IATA

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
ERG Code	154
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

IMDG/IMO

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
EmS-No.	F-A, S-B
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

RID

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Classification code	C1
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III
ADR/RID-Labels	8

ADR

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Classification code	C1
Tunnel restriction code	(E)
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III

ADN

UN-No.	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Hazard Class	8
Packing Group	III
Classification code	C1
Description	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID), 8, III
Hazard Labels	8

15. REGULATORY INFORMATION

International Inventories

TSCA Contact supplier for inventory compliance status
 DSL Contact supplier for inventory compliance status
 IECSC -

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

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	CAS No	Weight-%	SARA 313 - Threshold Values %
Nitric Acid - 7697-37-2	7697-37-2	1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard No
 Chronic Health Hazard No
 Fire Hazard No
 Sudden release of pressure hazard No
 Reactive Hazard 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
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	Extremely Hazardous Substances RQs	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

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Nitric Acid 7697-37-2	X	X	X	X	X

International regulations

Mexico

National Occupational Exposure Limits

Component	Carcinogen Status	Exposure limits
Nitric Acid 7697-37-2 (1)		Mexico: TWA 2 ppm Mexico: TWA 5 mg/m ³ Mexico: STEL 4 ppm Mexico: STEL 10 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

CANADA

WHMIS Hazard Class

Not Determined

16. OTHER INFORMATION

NFPA	Health hazards 3	flammability 0	Instability 0	Physical and chemical hazards - PERSONAL PROTECTION X
HMS	Health hazards 3	flammability 0	Physical hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

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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 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



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End of Safety Data Sheet