



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure****US Version**

MSDS No: 2-800-26-004-US

Date of Issue: 30/10/2006

Revision: 0/US

Page 1/9

1. Chemical Product and Company Identification**1.1. Product Identification:**

Chemical name Phosphoric acid, pure
Synonyms: Orthophosphoric acid
Chemical formula H₃PO₄
CAS number 7664-38-2
Chemical family Inorganic acid
Type of product end use Food additive, chemical industry, cleaning industry, other industrial uses.

1.2. Company Identification:

Manufacturer: Rotem Amfert Negev Ltd.
PURIPHOS Division
Mishor Rotem Plants
M. P. Arava 86800
Israel

Distributor: Rotem BKG LLC
2115 Linwood Ave
Fort Lee, NJ 07024

Non-Emergency telephone: Tel.: 1-201-242 3663

E-mail: wpacmarketing@rotem-group.com

Emergency telephone: CHEMTREC 1-800-424 9300

2. Composition / information on ingredients

Components	Weight %	CAS No	ACGH-TLV		OSHA		Notes
			TWA	STEL	TWA	STEL	
Phosphoric Acid	75 - 93	7664-38-2	1 mg/cu m	3 mg/cu m	1 mg/cu m	3 mg/cu m	
Water	Balance	7732-18-5					



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure**
US Version

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 2/9

3. Hazards identification

A. EMERGENCY OVERVIEW

Physical Appearance and Odor

Colorless liquid, odorless.

Warning Statements:

DANGER! CAUSES BURNS.

Contact with reactive metals zinc, bare steel may evolve highly flammable hydrogen gas. Danger of explosion if hydrogen gas evolved in confined area.

B. POTENTIAL HEALTH EFFECTS

Phosphoric acid is corrosive to all parts of the body.

Acute eye:

Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness.

Acute skin:

Causes irritation, burns.

Acute inhalation:

Mists may cause lung irritation, shortness of breath, fluid in lungs.

Acute ingestion:

Can cause corrosion of and damage to the gastro-intestinal tract.

Chronic effects:

Severity of acute effects is such that significant repeated or prolonged exposure is unlikely. The product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. First-aid measures

Contaminated individuals must be taken for medical attention if any adverse reaction occurs. Rescuers should be taken for medical attention, if necessary.

Take a copy of label and MSDS to health professional with contaminated individual.

Eye contact

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention. Continue intermittent irrigation until medical attention can be obtained.

Skin contact

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use.



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure****US Version**

MSDS No: 2-800-26-004-US

Date of Issue: 30/10/2006

Revision: 0/US

Page 3/9

Inhalation

Move the injured person to fresh air at once.
Assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. Seek immediate medical attention.

Ingestion**Do not induce vomiting.**

If victim is conscious and alert, give 2-3 glasses of water to drink. Seek immediate medical attention.

NOTE: Never give an unconscious person anything to drink.

Notes to physician:

Treat symptomatically.

5. Fire - fighting measures**Extinguishing media**

Not combustible. Use extinguishing method suitable for surrounding fire.

Special fire fighting procedure

Call the fire brigade. Avoid breathing the fumes as they may be toxic. Stand upwind of the fire.

In closed stores, provide fire-fighters with the approved self-contained breathing apparatus in positive pressure mode and full protective closing.

Prevent the dissolved material to run into drains or watercourses.

Unusual fire and explosion hazards

Not combustible. Hydrogen may form upon contact with metals (danger of explosion!).

Hazardous decomposition materials (Under Fire Conditions)

Emits toxic fumes of phosphorous oxides.

6. Accidental release measures**Evacuation procedures & personal precautions**

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

After spillage / leakage procedures

Dike and salvage, absorb with liquid acid absorbent or neutralize. Soda ash and lime are neutralizing agents.

If material can not be salvaged, a method is neutralization, followed by discharge into a treatment system in accordance with all local and state regulations.

7. Handling and storage**Handling**

Do not get on skin or in eyes. Avoid breathing vapors and mists. Do not ingest. This product reacts violently with bases liberating heat and causing spattering.



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure****US Version**

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 4/9

Storage conditions	Wear chemical goggles and PVC gloves for handling small quantities. Wear full protective clothing where there is a risk of splashes or leakage. Store in a dry, well-ventilated area away from incompatible materials (see "materials to avoid" in section 10). Provide sufficient heating to prevent crystallization. Keep containers tightly closed.
Incompatible products	Fluorine, strong oxidizing agents, strong reducing agents, bases, metals, sulfur trioxide, phosphorus pentoxide.

8. Exposure controls / personal protection**Exposure limits:**

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to Phosphoric acid.

Components	ACGH-TLV		OSHA		Notes
	TWA	STEL	TWA	STEL	
Phosphoric Acid	1 mg/cu m	3 mg/cu m	1 mg/cu m	3 mg/cu m	

Engineering measures to reduce exposures /ventilation requirements Mechanical exhaust required. Ventilate at floor level. Adequate to meet maximum exposure limit for acid mist of 1 mg/ m³ in 8 hours.

Personal protection equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of hazardous substances handled.

Respiratory protection

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Skin Protection

Wear PVC gloves, boots, acid resistant apron and protective clothing.



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure****US Version**

MSDS No: 2-800-26-004-US

Date of Issue: 30/10/2006

Revision: 0/US

Page 5/9

Eye/Face protection

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Use chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Face contact should be prevented through use of a face shield.

Industrial hygiene

Avoid breathing vapors. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.

9. Physical and chemical properties

Molecular weight	98.00
Appearance	Colorless liquid
Odour	Odourless
pH (1 w/w% water solution)	< 1
Melting point/range	-18 ⁰ C to 27 ⁰ C depending on H ₃ PO ₄ concentration.
Boiling point/range	138 ⁰ C to 171 ⁰ C depending on H ₃ PO ₄ concentration.
Vapour pressure, (25⁰C)	<1 mm to 6.8 mm Hg depending on H ₃ PO ₄ concentration.
Vapour density (air=1)	Not available
Flash point	Not available
Density, (25⁰C)	1.574 to 1.791 depending on H ₃ PO ₄ concentration.
Flammable/Explosion limits	Not available
Auto-ignition temperature	Not available
Solubility in water	Fully soluble
Thermal decomposition	Transforms to pyrophosphoric acid at 200°C
Other data	Possesses phenomena of super-cooling

10. Stability and reactivity

Chemical stability This material is stable under normal handling and storage conditions described in Section 7.



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure**
US Version

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 6/9

Incompatibility with other substances	Fluorine, strong oxidizing agents, strong reducing agents, bases, metals, sulfur trioxide, phosphorus pentoxide.
Hazardous Decomposition Products	Fumes produced when heated to decomposition may include corrosive phosphorous oxides. Hydrogen gas may form from reaction with metals.
Hazardous polymerization	Not likely to occur when stored under proper conditions.

11. Toxicological information

Phosphoric acid is corrosive to the eyes, skin and irritating for the respiratory tract.

Acute oral toxicity to Rat, LD50	1,530 mg/Kg (for 50% solution)
Acute dermal toxicity to Rat, LD50	2,740 mg/Kg (for 50% solution)
Skin Irritation, Rabbit	119 mg. Severely irritating.
Eye Irritation, Rabbit	595 mg/24 hr. Severely irritating
Skin Sensitization, guinea pigs	NA
Ames Test, <i>Salmonella typhimurium</i> & <i>Escherichia coli</i>	NA
<i>Carcinogenicity</i>	
IARC	Not included
NTP 11th Report on Carcinogens	Not included
OSHA	Not included

12. Ecological information

Phosphoric acid is harmful to aquatic life even in low concentration due to its acidity.

Ecotoxicity NA

Chemical Fate

Mobility Low volatility. Soluble in water.

Persistence/Degradability Freely dissociates.

Bio-accumulation The calcium salt of the acid is a normal constituent of bone. May contribute to the eutrophication of confined surface water.



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure****US Version**

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 7/9

13. Disposal considerations

Waste disposal If Phosphoric acid is to be used in water reactions, triple rinse drum with water and put into process (reduce water volume equal to rinsing). Soda ash and Lime may be used as neutralizing agents for material that cannot be salvaged. Neutralized liquid may be discharged to treatment in accordance with regulatory procedures. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste Yes
EPA RCRA Hazardous Waste Codes "C" Corrosive

14. Transportation information

UN No.	1805
IMO-Code/IMO	Hazard Class :8 corrosive
ICAO/IATA	Label :Corrosive (8)
	Packaging group :III
	Proper shipping name :Phosphoric acid, liquid
ADR/RID	UN No :1805
	Hazard Class :8 C1 Corrosive substances
	Packaging group :III
	Label :8
	Proper shipping name :Phosphoric acid, solution
US DOT	UN No :1805
	Hazard Class :8 corrosive
	Packaging group :III
	Danger Label Mode :No. 8
	Proper shipping name :Phosphoric acid solution
CANADA TDG	UN No :1805
	Hazard Class :8 corrosive
	Label :Corrosive (8)
	Packaging group :III
	Proper shipping name :Phosphoric acid, liquid



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure**

US Version

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 8/9

15. Regulatory information

Inventory Status

United States (TSCA)	Listed
Canada (DSL)	Listed
Europe (EINECS/ELINCS)	Listed
Australia (AICS)	Listed
Japan (MITI)	Listed
South Korea (KECL)	Listed
Philippines	Listed

UNITED STATES

US Federal Regulations

TSCA	Listed on the TSCA Inventory
Health & Safety Reporting List	Not listed.
Chemical Test Rules	Not listed.
Section 12b	None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule	Not listed.
CERCLA Hazardous Substances and corresponding RQs	CAS# 7664-38-2: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances	Not listed.
SARA Codes	Immediate.
Section 313	Not listed.
Clean Air Act	Not air pollutant. Not listed as a Class 1 / Class 2 Ozone depletors.
Clean Water Act	Listed as a Hazardous Substance under the CWA. Not listed as Priority / Toxic Pollutants under the CWA.

US State Regulations

Right to Know Lists California, New Jersey, Pennsylvania, Minnesota, Massachusetts.	Listed
California Prop 65	California No Significant Risk Level: None of the chemicals in this product are listed.

FDA

Status	This product meets the compositional requirements of: 21 CFR 182.1073 Phosphoric Acid
---------------	---



MATERIAL SAFETY DATA SHEET

Product: **Phosphoric Acid, Pure**
US Version

MSDS No: 2-800-26-004-US Date of Issue: 30/10/2006 Revision: 0/US Page 9/9

Canada - WHMIS

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and the MSDS contains all the information required by the CPR.

WHMIS Classification



E: Corrosive material

16. Other information

National Fire Protection Association Hazard Ratings--NFPA(R)

- 3** Health Hazard Rating--Serious
- 0** Flammability Rating--Minimal
- 0** Instability Rating--Minimal

Australian HazChem: Code 2R

Poison Schedule: S5

Reason for revision:

New, US version of the MSDS.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined

Prepared By: EHS UNIT in ISRAEL
Tel.: +972-8-6465341
E-mail: lati@dsw.co.il

End of safety data sheet