Material Safety Data Sheet
Phosphoric acid, 85 wt% solution in water

Section 1 - Chemical Product and Company Identification

MSDS Name: Phosphoric acid, 85 wt% solution in water
Catalog Numbers: 20114-0000, 20114-0010, 20114-0025, 20114-0050, 20114-5000
Synonyms: Orthophosphoric acid

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
<th>Hazard Symbols:</th>
<th>Risk Phrases:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-38-2</td>
<td>Phosphoric acid</td>
<td>85%</td>
<td>231-633-2</td>
<td>C</td>
<td>34</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>&lt;15%</td>
<td>231-791-2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Text for R-phrases: see Section 16

Hazard Symbols: C

Risk Phrases: 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Causes burns. Hygroscopic (absorbs moisture from the air).

Potential Health Effects
Eye: May cause irreversible eye injury. Contact with liquid is corrosive to the eyes and
causes severe burns.

Skin: Contact with liquid is corrosive and causes severe burns and ulceration. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause hemorrhaging of the digestive tract. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract. Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Prolonged inhalation may cause respiratory tract inflammation and lung damage.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner which limits further exposure.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Substance is noncombustible.

Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Cover with sand, dry lime or soda ash and place in a closed container for disposal. Flush spill area with water.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a
Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits
CAS# 7664-38-2:
United Kingdom, WEL - TWA: 1 mg/m3 TWA United Kingdom, WEL - STEL: 2 mg/m3 STEL
United States OSHA: 1 mg/m3 TWA
Belgium - TWA: 1 mg/m3 VLE Belgium - STEL: 2 mg/m3 VLE
France - VME: 0.2 ppm VME; 1 mg/m3 VME France - VLE: 0.5 ppm VLE; 2 mg/m3 VLE
Germany: 1 mg/m3 TWA
Japan: 1 mg/m3 OEL
Malaysia: 1 mg/m3 TWA
Netherlands: 0.5 ppm STEL; 2 mg/m3 STEL Netherlands: 0.2 ppm MAC; 1 mg/m3 MAC
Spain: 1 mg/m3 VLA-ED Spain: 2 mg/m3 VLA-EC

CAS# 7732-18-5:

Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European
Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Viscous liquid
Color: APHA: 10 max - Clear
Odor: odorless
pH: Not available
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: 158 deg C @760mmHg (316.40°F)
Freezing/Melting Point: 21 deg C (69.80°F)
Autoignition Temperature: Not available
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature:
Solubility in water: Miscible
Specific Gravity/Density: 1.680
Molecular Formula: H3O4P
Molecular Weight: 98

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, metals, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials

Metals, bases, alcohols, amines, halogenated agents, organic peroxides, phenols, steel, alcohols and glycols (e.g. butyl alcohol, ethanol, methanol, ethylene glycol), aldehydes (e.g. acetaldehyde, acrolein, chloral, formaldehyde), amides, azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), carbamates (e.g. carbanolate, carbofuran), caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), cyanides (e.g. potassium cyanide, sodium cyanide), esters (e.g. butyl acetate, ethyl acetate, propyl formate), fluorides (inorganic, e.g. ammonium fluoride, calcium fluoride, cesium fluoride), halogenated organics (e.g. dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), ketones (e.g. acetone, acetophenone, MEK, MIBK), mercaptans and other organic sulfides (e.g. butyl mercaptan, carbon disulfide, methanethiol), phenols and cresols, organophosphates,
phosphothioates (e.g. methylparathion, parathion, phorate, thionazin),
sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide),
epoxides (e.g. butyl glycidyl ether), combustible and flammable
materials (e.g. alkyl resins, asphalt, gasoline, grease, methyl acetone,
polystyrene, polyurethane), explosives (e.g. ammonium nitrate,
hydrazoic acid, sodium azide), nitromethane,

Hazardous
Decomposition
Phosphine, oxides of phosphorus, hydrogen gas.
Products
Hazardous
Polymerization
May occur.

Section 11 - Toxicological Information

RTECS:
CAS# 7664-38-2: TB6300000
RTECS:
CAS# 7732-18-5: ZC0110000

RTECS:
CAS# 7664-38-2: Draize test, rabbit, eye: 119 mg Severe;
Draize test, rabbit, skin: 595 mg/24H Severe;
Inhalation, mouse: LC50 = 25.5 mg/m3;
Inhalation, rat: LC50 = >850 mg/m3/1H;
Inhalation, rat: LC50 = 25.5 mg/m3;
Oral, mouse: LD50 = 1.25 gm/kg;
LD50/LC50: Oral, rat: LD50 = 1530 mg/kg;
Oral, rat: LD50 = 1.25 gm/kg;
Skin, rabbit: LD50 = 2740 mg/kg;

RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;

Phosphoric acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Carcinogenicity:
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other:
See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:
Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA  IMO  RID/ADR
Shipping  PHOSPHORIC ACID,  PHOSPHORIC ACID  PHOSPHORIC ACID,
<table>
<thead>
<tr>
<th>Name:</th>
<th>SOLUTION</th>
<th>SOLUTION</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>UN Number:</td>
<td>1805</td>
<td>1805</td>
<td>1805</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

USA RQ: CAS# 7664-38-2: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

Hazard Symbols: C
Risk Phrases:
R 34 Causes burns.
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**

CAS# 7664-38-2: 1
CAS# 7732-18-5: Not available

**Canada**

CAS# 7664-38-2 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List

**US Federal**

**TSCA**

CAS# 7664-38-2 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

Text for R-phrases from Section 2
R 34 Causes burns.

MSDS Creation Date: 12/05/1996
Revision #1 Date 10/16/2003
Revisions were made in Sections: General revision.
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

-------------------------------------------------------------------------------------------------