



# MATERIAL SAFETY DATA SHEET

## 1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME(S) **KOCHKLEEN™ L-02**  
CAS NUMBER MIXTURE  
MSDS NUMBER 30  
PRODUCT CODE ND  
PRODUCT USE MEMBRANE CLEANER



MANUFACTURER / SUPPLIER Koch Membrane Systems, Inc.  
850 Main Street  
Wilmington, MA  
01887 USA

### TELEPHONE NUMBERS - 24 HOUR ASSISTANCE

Chemtrec: +1(800) 424-9300 (inside USA)  
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### TELEPHONE NUMBERS - GENERAL ASSISTANCE

Product Assistance +1(978) 657-4250  
8 - 5, M - F, Eastern Time

For technical assistance regarding this product, please contact your local Koch Membrane Systems representative.

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
PHOSPHONIC ACID, (1-HYDROXYETHYLIDENE)BIS-	2809-21-4	10 - 20 %	ND
2-HYDROXY-1,2,3 - PROPANETRICARBOXYLIC ACID	77-92-9	10 - 20 %	Total Particulate Dust: 15 mg/m <sup>3</sup> 8-Hour TWA (OSHA) Respirable Particulate: 5.0 mg/m <sup>3</sup> 8-Hour TWA (OSHA)

\*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

WHMIS Classification: D2B, E.

### 3 HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

DANGER!

#### HEALTH HAZARDS

CORROSIVE TO EYES. MAY CAUSE BLINDNESS  
MAY BE IRRITATING TO THE SKIN AND RESPIRATORY TRACT

\*\*SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

#### FLAMMABILITY HAZARDS

NON-COMBUSTIBLE

#### REACTIVITY HAZARDS

STABLE

#### POTENTIAL HEALTH EFFECTS, SKIN

MAY BE IRRITATING. Contact may cause reddening, itching, inflammation, burns, blistering and possibly severe tissue damage.

#### POTENTIAL HEALTH EFFECTS, EYE

CORROSIVE. Exposure may cause severe burns, destruction of eye tissue and possible permanent injury or blindness.

#### POTENTIAL HEALTH EFFECTS, INHALATION

Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

#### POTENTIAL HEALTH EFFECTS, INGESTION

May cause painful irritation and burning of the mouth and throat, painful swallowing, labored breathing, burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

### 4 FIRST AID MEASURES

#### SKIN

Immediately flush skin with plenty of water, for at least 15 minutes, while removing contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

#### EYE

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

## **INHALATION**

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

## **INGESTION**

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Never give anything by mouth to an unconscious person. Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis.

Have victim rinse mouth thoroughly with water, then drink 2 to 8 oz. (60 to 240 ml) of water. If vomiting occurs naturally, have the victim lean forward to reduce risk of aspiration. Repeat administration of water. Quickly transport to emergency care facility.

## **NOTES TO PHYSICIAN**

This product is primarily an irritant and corrosive. As a corrosive, give attention to potential complication of esophagus or stomach perforations if ingested. Use of emetics and lavage are contraindicated. Necrosis and associated inflammatory processes peak at about 48 hours, but may extend up to four days. Initial healing processes occur during the period 4 to 14 days, but the esophageal wall is weakest during this period.

If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

# **5 FIRE FIGHTING MEASURES**

## **HAZARDOUS COMBUSTION PRODUCTS**

Combustion may produce COx, POx, phosphine.

## **EXTINGUISHING MEDIA**

Material itself will not burn.

## **BASIC FIRE FIGHTING PROCEDURES**

Evacuate area and fight fire from a safe distance.

Use extinguishing agent suitable for type of surrounding fire. Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible.

Firefighters must wear MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

## **UNUSUAL FIRE & EXPLOSION HAZARDS**

None known.

Flash Point	NA (WATER BASE)
Autoignition Temperature	ND
Flammability Limits in Air, Lower, % by Volume	ND
Flammability Limits in Air, Upper, % by Volume	ND

# **6 ACCIDENTAL RELEASE MEASURES**

## **EMERGENCY ACTION**

Keep unnecessary people away. Isolate spill area and keep unnecessary people away.

## **ENVIRONMENTAL PRECAUTIONS**

If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released product. Notify local, provincial and/or federal authorities, if required.

## **SPILL OR LEAK PROCEDURE**

Large spills may be neutralized with dilute alkaline solutions of soda ash or lime. Stop leak when safe to do so.

Do not touch or walk through spilled material.

See Exposure Controls/Personal Protection (Section 8).

## **7 HANDLING & STORAGE**

### **HANDLING**

This material should be stored and shipped in plastic or plastic lined containers. Do not use with materials or equipment sensitive to acidic solutions.

Do not eat, drink or smoke in areas of use or storage.

### **STORAGE**

Avoid contact with strong oxidizers, bases, and metals. Store in tightly closed containers in cool, dry area away from heat and incompatibles.

Empty containers may contain product residue. Do not reuse without adequate precautions.

## **8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

### **ENGINEERING CONTROLS**

General or local exhaust ventilation and other forms of engineering controls are the preferred means for controlling exposures.

### **EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)**

Wear chemical safety goggles and face shield. Have eye washing facilities readily available where eye contact can occur.

### **SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)**

Avoid skin contact with this material. If skin contact is anticipated, protective clothing, including impervious gloves, should be worn. Protective glove materials include, but are not limited to natural rubber, neoprene or nitrile.

Additional protection may be necessary to prevent skin contact including use of apron, armcovers, face shield, or boots. Provide safety showers at any location where skin contact can occur.

Use good personal hygiene.

### **RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)**

A NIOSH/MSHA approved air purifying respirator with an acid vapor cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

## **9 PHYSICAL & CHEMICAL PROPERTIES**

### **ODOR AND APPEARANCE**

CLEAR, COLORLESS LIQUID WITH AN ACIDIC ODOR

Boiling Point	212 °F (100 °C)
Specific Gravity	ND
Melting Point	NA
Percent Volatile	NA
Vapor Pressure	17 mm Hg @ 20° C (68° F)
Vapor Density	ND
Bulk Density	9.2 - 10.4 LBS/GAL
Solubility in Water	100 %
Octanol/Water Partn	ND
Volatile Organic	NA
Pour Point	NA
pH Value	< 2
Freezing Point	ND
Viscosity	ND
Evaporation Rate	ND
Molecular Formula	NA
Molecular Weight	ND
Chemical Family	ORGANIC PHOSPHONATES
Odor Threshold	ND

## 10 STABILITY & REACTIVITY

### STABILITY/INCOMPATIBILITY

Incompatible with bases, and oxidizers. See precautions under Handling & Storage (Section 7).

### HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce CO<sub>x</sub>, PO<sub>x</sub>, acid fumes, phosphine.

## 11 TOXICOLOGICAL INFORMATION

### ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact.

### LD50

Phosphonic acid, (1-hydroxyethylidene)bis-

LD50: Skin (rabbit) > 7940 mg/kg

LD50: Oral (rat) > 2,000 mg/kg

### TOXICOLOGICAL DATA

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin, eye, teeth, blood and respiratory system.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: chronic obstructive pulmonary disease, erosion of teeth and chest pains. Other symptoms of exposure may include the following: cardiovascular collapse, acidosis, bloody diarrhea, bloody vomit and shock.

### PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin, eye respiratory and cardiovascular systems.

## 12 ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

Not toxic to aquatic organisms and not suspected of long-term adverse effects in the aquatic environment.

## 13 DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL

This product, as supplied, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261) due to its corrosivity.. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

In Canada, wastes should be disposed of according to federal, state, provincial and local regulations.

## 14 TRANSPORT INFORMATION

### BILL OF LADING - BULK (U. S. DOT)

Corrosive Liquid, Acidic, Organic, N.O.S. (phosphonic acid (1-hydroxyethylidene)bis-), 8, UN3265, PG II

### BILL OF LADING - NON-BULK (U. S. DOT)

Corrosive Liquid, Acidic, Organic, N.O.S. (phosphonic acid, (1-hydroxyethylidene)bis-), 8, UN3265, PG II

The above description may not cover shipping in all cases, please consult 49 CFR 172.101 for specific shipping information.

## 15 REGULATORY INFORMATION

### FEDERAL REGULATIONS

All components of this product are listed on the TSCA Inventory.

This product, as supplied, contains no hazardous substances regulated under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302), or any extremely hazardous substances regulated under the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355), and thus a release of this product as supplied has no reporting requirements under these regulations.

Failure to report may result in substantial civil and criminal penalties. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations.

This product does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

There may be specific regulations at the local, regional or state/provincial level that pertain to this product.

### SARA TITLE III RATINGS

Immediate Hazard:	X	Delayed Hazard:	X	Fire Hazard:	-	Pressure Hazard:	-
Reactivity Hazard:	-						

### STATE REGULATIONS

Based on available information this product does not contain any components or chemicals currently known to the State of California to cause cancer, birth defects or reproductive harm at levels which would be subject to Proposition 65. Reformulation, use or processing of this product may affect its composition and require re-evaluation.

PENNSYLVANIA - Non-hazardous ingredients present at >3%: Water, CAS # 7732-18-5

## INTERNATIONAL REGULATIONS

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

WHMIS Classification: D2B, E.

All known major components of this product are listed on the Canadian DSL.

### WHMIS RATINGS

Compressed Gas	-	Flammable/Combustible	-	Oxidizer	-	Acutely Toxic	-
Other Toxic Effects	X	Bio Hazardous	-	Corrosive	X	Dangerously Reactive	-

### NFPA RATINGS

Health	3	Flammability	0	Reactivity	0	Special Hazards	
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### HMIS RATINGS

\* - Indicates chronic health hazard

Health	3*	Flammability	0	Reactivity	0
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## 16 OTHER INFORMATION

### DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

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Completed By Koch Chemical Technology Group, LLC, call (978) 694-7346 or (978) 657-4250