

MATERIAL SAFETY DATA SHEET

1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME(S) **KOCHKLEEN® OX SANITANT**
CAS NUMBER MIXTURE
MSDS NUMBER 111
PRODUCT CODE ND
PRODUCT USE SANITANT
SYNONYM(S) ND
MANUFACTURER / SUPPLIER Koch Membrane Systems, Inc.
850 Main Street
Wilmington, MA
01887

TELEPHONE NUMBERS - 24 HOUR ASSISTANCE

Chemtrec: +1(800) 424-9300 (inside USA)
+1(703) 527-3887 (outside USA)

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
HYDROGEN PEROXIDE	7722-84-1	25 - 27.4 %	1 ppm 8-Hour TWA (OSHA) 1.4 mg/m ³ 8-Hour TWA (OSHA) 1 ppm 8-Hour TWA (ACGIH) 1.4 mg/m ³ 8-Hour TWA (ACGIH)
ACETIC ACID	64-19-7	5 - 10 %	10 ppm 8-Hour TWA (OSHA) 25 mg/m ³ 8-Hour TWA (OSHA) 10 ppm 8-Hour TWA (ACGIH) 15 ppm 15-Min STEL (ACGIH)
PEROXYACETIC ACID	79-21-0	5 - 6 %	ND

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

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER!

HEALTH HAZARDS

CORROSIVE TO THE SKIN, EYES AND RESPIRATORY TRACT

POSSIBLE RISKS OF IRREVERSIBLE EFFECTS

MAY BE HARMFUL OR FATAL IF INHALED OR ABSORBED THROUGH THE SKIN

MAY BE HARMFUL IF SWALLOWED

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

FLAMMABILITY HAZARDS

DECOMPOSES AT > 156°F (68.9°C)

SEE SECTION 5 (FIRE FIGHTING MEASURES) FOR MORE INFORMATION

REACTIVITY HAZARDS

STABLE

OXIDIZER! CONTACT WITH ORGANIC MATERIALS MAY CAUSE VIOLENT REACTION

POTENTIAL HEALTH EFFECTS, SKIN

CORROSIVE. Contact may cause reddening, itching, inflammation, burns, blistering and possibly severe tissue damage.

Absorption from prolonged or repeated skin contact may cause systemic toxicity. May be fatal, if absorbed through skin.

POTENTIAL HEALTH EFFECTS, EYE

CORROSIVE. Exposure may cause severe burns, destruction of eye tissue and possible permanent injury or blindness. Exposure to vapors, fumes or mists may cause irritation. Exposure may cause sensitivity to light.

POTENTIAL HEALTH EFFECTS, INHALATION

SEVERELY IRRITATING. 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). May be fatal.

POTENTIAL HEALTH EFFECTS, INGESTION

CORROSIVE. 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.

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).

4 FIRST AID MEASURES

SKIN

Immediately flush skin with plenty of water, for at least 15 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.

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. Remove contact lenses, if worn, after the first 5 minutes.

GET IMMEDIATE MEDICAL ATTENTION. Do not attempt to neutralize with chemical agents.

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

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.

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.

5 FIRE FIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS

Combustion may produce acetic acid, irritating vapors and oxygen. Thermal decomposition may produce oxygen which can initiate combustion.

EXTINGUISHING MEDIA

Use water spray, carbon dioxide or foam.

BASIC FIRE FIGHTING PROCEDURES

This product may accelerate burning when involved in a fire.

Evacuate area and fight fire from a safe distance.

If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak.

Use flooding quantities of water only. Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Fire fighters must wear approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE & EXPLOSION HAZARDS

Decomposes to form oxygen. This product may accelerate burning when involved in a fire.

Flash Point	> 200 °F (93 °C) closed cup
Autoignition Temperature	518 °F (270 °C)
Flammability Limits in Air, Lower, % by Volume	NA
Flammability Limits in Air, Upper, % by Volume	NA

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 800 meters (1/2 mile) in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8.)

ENVIRONMENTAL PRECAUTIONS

Eliminate all sources of ignition. Isolate hazard area and deny entry.

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, state, and/or Federal authorities, if required.

SPILL OR LEAK PROCEDURE

Flush spilled material with large quantities of water. Undiluted material should not enter confined spaces. Spill may be neutralized with soda ash (sodium carbonate) broadcasted on surface. Use 1.0 to 1.5 lbs. soda ash per gallon spilled material. Flush with large quantity of water and collect for disposal. Stop leak when safe to do so.

Do not touch or walk through spilled material. Combustible materials should be removed and/or rinsed with water to ensure all residual hydrogen peroxide is removed.

See Exposure Controls/Personal Protection (Section 8).

7 HANDLING & STORAGE

HANDLING

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld in the vicinity of the product or reuse containers unless adequate precautions are taken against these hazards.

Equipment used for handling product should be made only of compatible material including but not limited to glass, stainless steel, aluminum or plastic.

Do not eat, drink or smoke in areas of use or storage. Wash hands thoroughly before eating, drinking or smoking. Keep containers tightly closed and upright when not in use.

STORAGE

Never return Kochkleen® OX Sanitant to the original container after it has been removed. Avoid all contaminants, especially dirt, caustic, reducing agents, and metals. Contamination and impurities will reduce shelf life and can induce decomposition. In case of a decomposition, isolate container, douse container with cool water and dilute Kochkleen® OX Sanitant with large volumes of water. Avoid damage to containers. Keep container closed at all times when not in use. Containers should be vented. Keep container out of direct sunlight. To maintain product quality, store at temperatures below 86°F.

Do not double stack containers. Do not store near reducing agents or fuels. Additional recommendations and/or requirements for the storage of oxidizers and organic peroxides can be found in NFPA 1 Chapter 70.

Empty containers may contain product residue. Do not reuse without adequate precautions. Rinse empty containers out with water prior to disposal.

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. If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used.

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. Protective glove materials include, but are not limited to rubber. 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 gas 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

COLORLESS LIQUID; SHARP, PUNGENT VINEGAR ODOR

Boiling Point	210 °F (99 °C)
Specific Gravity	1.1 AT 68 °F (20 °C)
Melting Point	-14.6 °F (-25.9 °C)
Percent Volatile	> 99 %
Vapor Pressure	22 mmHg AT 77 °F (25 °C)
Vapor Density	ND
Bulk Density	9.35 LBS/GAL
Solubility in Water	100 % AT 77 °F (25 °C)
Octanol/Water Partn	NA
Volatile Organic	NA
Pour Point	NA
pH Value	1.8 (10% SOLUTION)
Freezing Point	ND
Viscosity	ND
Evaporation Rate	> 1 (BUTYL ACETATE =1)
Molecular Formula	ND
Molecular Weight	ND
Chemical Family	OXIDIZER
Odor Threshold	ND

10 STABILITY & REACTIVITY

STABILITY/INCOMPATIBILITY

Incompatible with iron and other heavy metals, galvanized iron, cobalt, copper, copper alloys, chromium, aluminum, and rust. Incompatible with dirt, alkali (lye), organics, wood, paper, leather or other combustible materials.

Avoid contamination. Major contaminants that contribute to instability are reducing agents, rusts, dirt, organic materials and a pH above 4.

Avoid open flames, elevated temperatures and any heat source.

See precautions under Handling & Storage (Section 7).

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce acetic acid, irritating vapors and oxygen.

11 TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact.

LD50

LD50: Hydrogen peroxide Oral Rat 500 mg/Kg

LD50: Acetic acid Oral Rat 3310 mg/Kg

LD50: Acetic acid Dermal Rabbit 1060 microliters/Kg

LD50: Peracetic acid Oral Mouse 210 mg/Kg

LD50: Peracetic acid Dermal Rat > 12,000 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, and respiratory tract.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: headache, dizziness, tremors, numbness, convulsions, unconsciousness and shock.

CARCINOGENICITY

This product contains hydrogen peroxide. IARC has determined that there is limited evidence for the carcinogenicity of hydrogen peroxide in experimental animals and inadequate evidence in humans. (IARC Group 3).

TERATOGENICITY, MUTAGENICITY, OTHER REPRODUCTIVE EFFECTS

This product contains a component which has been shown to be positive in mutagenicity assays.

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

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

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Toxic to birds, fish and aquatic invertebrates.

Freshwater:

LC50 (96 hr): 0.68 ppm (Rainbow Trout)

LC50 (96 hr): 1.21 ppm (Bluegill Sunfish)

EC50 (48 hr): 0.76 ppm (Daphnia Magna)

Marine:

LC50 (96 hr): 2.2 ppm (Pacific silverside)

LC50 (96 hr): 3.8 ppm (Sheepshead minnow)

CHEMICAL FATE INFORMATION

Peracetic acid is completely miscible with water. Aqueous solutions of peracetic acid hydrolyze to acetic acid and hydrogen peroxide.

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.

14 TRANSPORT INFORMATION

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

Hydrogen Peroxide and Peroxyacetic Acid Mixtures, Stabilized (with not more than 6% Peroxyacetic Acid), 5.1(8), UN3149, PG II

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

Hydrogen Peroxide and Peroxyacetic Acid Mixtures, Stabilized (with not more than 6% Peroxyacetic Acid), 5.1(8), UN3149, PG II

Within the United States and Canada; 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 is a registered pesticide. EPA Registration No.: 63838-1-81284.

This product, as supplied, contains peroxyacetic acid, an Extremely Hazardous Substance as per 40 CFR Part 355. The reportable quantity for peroxyacetic acid is 500 pound(s). Any release of this product that results in a release of peroxyacetic acid equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 302.6 and 40 CFR 355.40, respectively. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

This product, as supplied, contains acetic acid, a Hazardous Substance as per 40 CFR 302.4. The reportable quantity for acetic acid is 5,000 pound(s). Any release of this product that results in a release of acetic acid equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 302.6 and 40 CFR 355.40, respectively.

This product contains one or more components designated as hazardous substances or toxic pollutants pursuant to the Federal Clean Water Act (40 CFR 116.4 Table A; 40 CFR 401.15). Any unpermitted introduction of this product into a facility stormwater or wastewater discharge may constitute a violation of the Clean Water Act. Facilities must notify the appropriate permitting agency prior to introducing this product into the aforementioned discharges.

This product contains one or more substances listed as hazardous, toxic or flammable air pollutants under Section 112 of the Clean Air Act.

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: - Fire Hazard: - Pressure Hazard: -
Reactivity Hazard: -

Following ingredients of this product are listed in SARA313

SARA Listed Ingredient Name	CAS Number	Maximum %
PEROXYACETIC ACID	79-21-0	6.0

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

NFPA RATINGS

Health	3	Flammability	1	Reactivity	1	Special Hazards	OX
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HMIS RATINGS

Health	3	Flammability	1	Reactivity	1
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16 OTHER INFORMATION**DISCLAIMER**

This information must be brought to the attention of the person responsible for advising on safety matters. Adequate training and instruction should be given. Appropriate warning and safe handling procedures should be provided to handlers and users. The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, safety data sheets 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 damages 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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