VigorOx™ Liquid Sanitizer and Disinfectant

PM-31 Reg # 65402-1

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EPA Registration No. 65402-1
EPA Est. No. 00279-NY-003

VigorOx™ liquid sanitizer is for institutional/industrial sanitizing of previously cleaned non-porous food contact surfaces in:

- Dairies, Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing/Packing Plants
- Milk and Dairy Products Processing/Packing Plants
- Seafood and Vegetable Processing/Packing Plants
- Food Processing/Packing Plants
- Egg Processing/Packing Equipment Surfaces
- Eating Establishments

VigorOx™ liquid sanitizer and disinfectant is for sanitizing of inanimate, non-food contact surfaces (general environmental surfaces).

VigorOx™ liquid sanitizer and disinfectant is for use in the sanitization of ultra filtration and reverse osmosis (RO) membranes and their associated distribution systems. **VigorOx liquid sanitizer and disinfectant** is also for use in the disinfection of hard surfaces in general commercial and medical environments.

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 65402-1

APR 21 1997

ACCEPTED

For Industrial Use Only

Active Ingredients:	Peroxyacetic Acid	5.1%
	Hydrogen Peroxide	21.7%
Inert Ingredients:		73.2%

KEEP OUT OF REACH OF CHILDREN

DANGER

See side panel for additional precautionary statements

FMC and VigorOx are trademarks of FMC Corporation.

FMC Corporation
Peroxygen Chemicals Division
1735 Market Street
Philadelphia Pennsylvania 19103

Precautionary Statements
Hazards to Humans and Domestic Animals

DANGER
Corrosive, causes eye and skin damage. Harmful or fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Wash thoroughly with soap and water after handling. Do not breath vapor or spray mist. Do not enter an enclosed area without proper respiratory protection.

Physical or Chemical Hazards
Strong oxidizing agent. Mix only with water. VigorOx™ is not combustible; however, at temperatures exceeding 156°F, decomposition occurs releasing oxygen. The oxygen released could initiate or promote combustion of other materials.

Environmental Hazards
This pesticide is toxic to birds, mammals, fish and aquatic life. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your state Water Board or Regional Office of the EPA.

Any solution released from the system should be diluted with water and tested for residuals to ensure that there is less than 3 ppm peroxygen remaining.

Statement of Practical Treatment
If swallowed: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. See a physician.

If inhaled: Remove to fresh air. If breathing discomfort occurs, call a physician. If breathing has stopped, apply artificial respiration and see a physician.

If in eyes: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a physician.

If on skin: Immediately flush with plenty of water while removing contaminated clothing and/or shoes. Wash skin thoroughly with soap and water. See a physician. Wash contaminated shoes and clothing before reuse.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

This product is not to be used as a terminal sterilant/high-level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or (2) contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to precleanor decontaminate critical or semi-critical medical devices prior to sterilization or high-level disinfection.

Storage and Disposal
Storage

NEVER RETURN VigorOx™ TO THE ORIGINAL CONTAINER AFTER IT HAS BEEN REMOVEI Avoid all contaminants, especially dirt, caustic, reducing agents, and metals. Contamination ar impurities will reduce shelf life and can induce decomposition. In case of a decomposition, isola container, douse container with cool water and dilute VigorOx™ with large volumes of water.

Avoid damage to containers. Keep container closed at all times when not in use. Keep contain out of direct sunlight. To maintain product quality, store at temperatures below 86°F. Do not sto on wooden pallets.

Procedure for Leak or Spill
Stop leak if this can be done without risk. Shut off ignition sources; no flames, smoking, flares, spark producing tools. Keep combustible and organic materials away. Flush spilled material wi large quantities of water. Undiluted material should not enter confined spaces.

Disposal

Pesticide Disposal
If material has been spilled, an acceptable method of disposal is to dilute with at least 20 volum of water followed by discharge into suitable treatment system in accordance with all local, stat and Federal environmental laws, rules, regulations, standards, and other requirements. Becau acceptable methods of disposal may vary by location, regulatory agencies should be contacte prior to disposal.

VigorOx™ Liquid Sanitizer which is to be discarded, should be disposed of as hazardous waste aft contacting the appropriate local, state, or Federal agency to determine proper procedures.

Container Disposal
Empty drums are not returnable to FMC unless special arrangements have been made. Triple rin drums with water. Dispose of drums in accordance with local, state, and Federal regulations. D **not reuse.**

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For use in circulation cleaning and institutional/industrial sanitizing of previously cleaned non-porous food contact surfaces and equipment such as tanks, pipelines, evaporators, fillers, pasteurizers, aseptic equipment in:

- Dairies, Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing/Packing Plants
- Milk and Dairy Products Processing/Packing Plants
- Seafood and Vegetable Processing/Packing Plants
- Food Processing/Packing Plants
- Egg Processing/Packing Equipment Surfaces
- Eating Establishments

VigorOx is for use in the sanitization of ultra filtration and non-medical institutional/industrial reverse osmosis (RO) membranes and their associated distribution systems.

Sanitizing Non-Porous Food Contact Surfaces.

Clean equipment immediately after use:

1. Remove gross particulate matter with a warm water flush.
2. Wash equipment with detergent or cleaning solution.
3. Rinse equipment with potable water.
4. Prepare VigorOx™ solution as follows:
   Add 1.6 to 1.9 ounces VigorOx™ to 5 gallons potable water. This will provide 128 to 152 ppm peroxyacetic acid and 550 to 644 ppm hydrogen peroxide.
5. Fill closed systems with diluted sanitizer solution at a temperature of 5°C (41°F) to 40°C (104°F) and a contact time of one (1) minute.
6. Allow surfaces to drain thoroughly before resuming operation.

Eating Establishment Sanitizing

1. Scrape/prewash plates, utensils, cups, glasses whenever possible.
2. Wash all items with a detergent.
3. Rinse thoroughly with potable water.
4. Prepare VigorOx™ sanitizing solution as follows:
   Add 1.6 to 1.9 ounces VigorOx™ to 5 gallons of potable water. This will provide 128 to 152 ppm peroxyacetic acid and 550 to 644 ppm hydrogen peroxide.
5. Immerse all items for at least 2 minutes or for a contact time as specified by the local governing sanitizing code.
6. Place all sanitized items on a rack or drainboard to air dry.

General Environmental Surfaces Sanitization (Non-Food Contact)

VigorOx is an effective inanimate non-food contact surface sanitizer against Staphylococcus aureus, Klebsiella pneumonia, and Saccharomyces cerevisiae. Sanitation of surfaces such as floors, walls, tables, chairs, benches, drains etc., can be accomplished, using the following procedures:

1. Remove gross filth with a cleaner or other suitable detergent.
2. Add 1 oz. VigorOx liquid sanitizer to 16 gallons of water to prepare a solution containing 27 ppm of peroxyacetic acid and 115 ppm of hydrogen peroxide.
3. Soak items in/with diluted solution using mop/wipe, coarse spray or flood techniques and allow contact for at least 5 minutes.
4. Allow items and/or surfaces to air dry.

Note: Before using VigorOx to sanitize metal surfaces, it is recommended that the diluted VigorOx solution be tested on a small area to determine compatibility.

Sanitizing:

VigorOx liquid sanitizer and disinfectant is for use in the sanitization of ultra filtration and institutional/industrial use reverse osmosis membranes and their associated piping systems, and general commercial and medical environments. VigorOx may be added continuously to the feed water stream to prevent the accumulation of biological matter between sanitization episodes. VigorOx is not for use in kidney dialysis reprocessing equipment.

Surface Disinfection:

VigorOx is an effective disinfectant against gram positive and negative bacteria (vegetative forms) such as Staphylococcus aureus, Salmonella choleraesuis, Pseudomones aeruginosa which may be used in general commercial and in medical environments. Prepare VigorOx disinfecting solution be adding 3.2 oz. of VigorOx to 5 gallons of water (a 1:200 dilution), this will provide 292 ppm peroxyacetic acid and 1240 ppm hydrogen peroxide. Remove gross filth from surfaces to disinfected by cleaning with a detergent or suitable cleaning product. Rinse with clean water. Apply VigorOx disinfecting solution by wiping, mopping, or as a coarse spray. Allow to soak for at least 10 minutes, then air dry.

Batch Sanitization of Ultra-Filtration and Reverse Osmosis (RO) Membranes

This product has been shown to be an effective disinfectant when tested by AOAC and EPA methods. This product may not totally eliminate all vegetative microorganisms in reverse osmosis membranes and their associated piping systems due to their construction and/or assembly, but can be relied upon to reduce the number of microorganisms to acceptable levels when used as directed. Check with equipment manufacturer for membrane compatibility with VigorOx™.

1. Remove biological or organic fouling from the membrane or other parts of the system with an appropriate cleaner.
2. Flush the system with RO permeate or similar quality water.
3. Remove mineral deposits with an acidic cleaner prior to sanitizing the membranes.
4. Flush the system with RO permeate or similar quality water.
5. Prepare an appropriate volume of 1% solution of VigorOx. This will provide 530 ppm of peroxyacetic acid and 2250 ppm hydrogen peroxide.
6. Fill the entire water circuit to be sanitized with the dilute solution and allow the solution to reach a minimum of 20°C (69°F).
7. Recirculate the dilute solution of VigorOx for a minimum of 10 minutes.
8. Allow membrane elements to soak in the VigorOx solution for a minimum of 20 minutes.
9. Rinse the RO system and test for residuals to ensure that there is less than 3 ppm per oxygen. Residuals can be reduced by diverting product water to drain.

Batch Sanitization of Piping Systems Associated with RO Membranes

1. Isolate incompatible equipment from piping system. This includes activated carbon filters and ion exchange equipment. Turn off power to ultraviolet light units.
2. Estimate total volume of water contained in the system (tanks, rinse stations and piping). Prepare an appropriate volume of 1.0 - 1.5% VigorOx solution by adding 1.0 to 1.5 gal lons of VigorOx for every 100 gallons of solution prepared. Use RO permeate or similar quality water for dilution. This will provide.530 - 795 ppm peroxyacetic acid and 2250 - 3380 ppm hydrogen peroxide.
3. Recirculate the dilute VigorOx solution through the system for a minimum of 4 hours. Process usage valves should be opened and closed to expose internals to the VigorOx solution.
4. Completely drain the system of dilute VigorOx solution. Thoroughly rinse the system by filling with RO permeate or similar quality water and recirculate before drainage. Repeat the process until test for residuals indicates there is less then 3 ppm peroxygen.

Continuous/Intermittent Addition to Minimize the Accumulation of Biological Matter Between Sanitizing Episodes

1. VigorOx, as received or diluted, amy be added continuously to the feed water stream, between system sanitizing episodes, to aid in minimizing the regrowth/accumulation of biological matter. The peroxygen residual in the system which will be effective will vary with the design and usage characteristics of the system. Adjust the addition rate of VigorOx or VigorOx solution and periodically monitor residual peroxygen so that the desired effect is obtained.
2. For continuous addition do not exceed 20 ppm VigorOx. This will give 1 ppm peroxyacetic acid and 4 ppm hydrogen peroxide. For intermittent feed do not exceed 2000 ppm VigorOx. This will give 100 ppm peroxyacetic acid and 400 ppm hydrogen peroxide.

Spray Application

VigorOx sanitizing or disinfecting solutions, prepared as specified, may be applied as a coarse spray to surfaces to be sanitized or disinfected. Thoroughly wet surfaces, allow to soak for at least 5 minutes (for sanitizing) or 10 minutes (for disinfecting), then air dry.

In all applications, always prepare a new sanitizing/disinfecting solution daily to ensure effectiveness. Do not reuse sanitizing/disinfecting solutions. Dispose of any unused sanitizing/disinfecting.

Disposal of Effluents Containing VigorOx

Effluents containing this product should not be discharged into lakes, streams, ponds, estuaries, oceans, or public waters unless the product is specifically identified and included in the NPDES permit. Contact the appropriate local, state, or Federal regulatory agency prior to disposal.

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Contents Gallons Pounds

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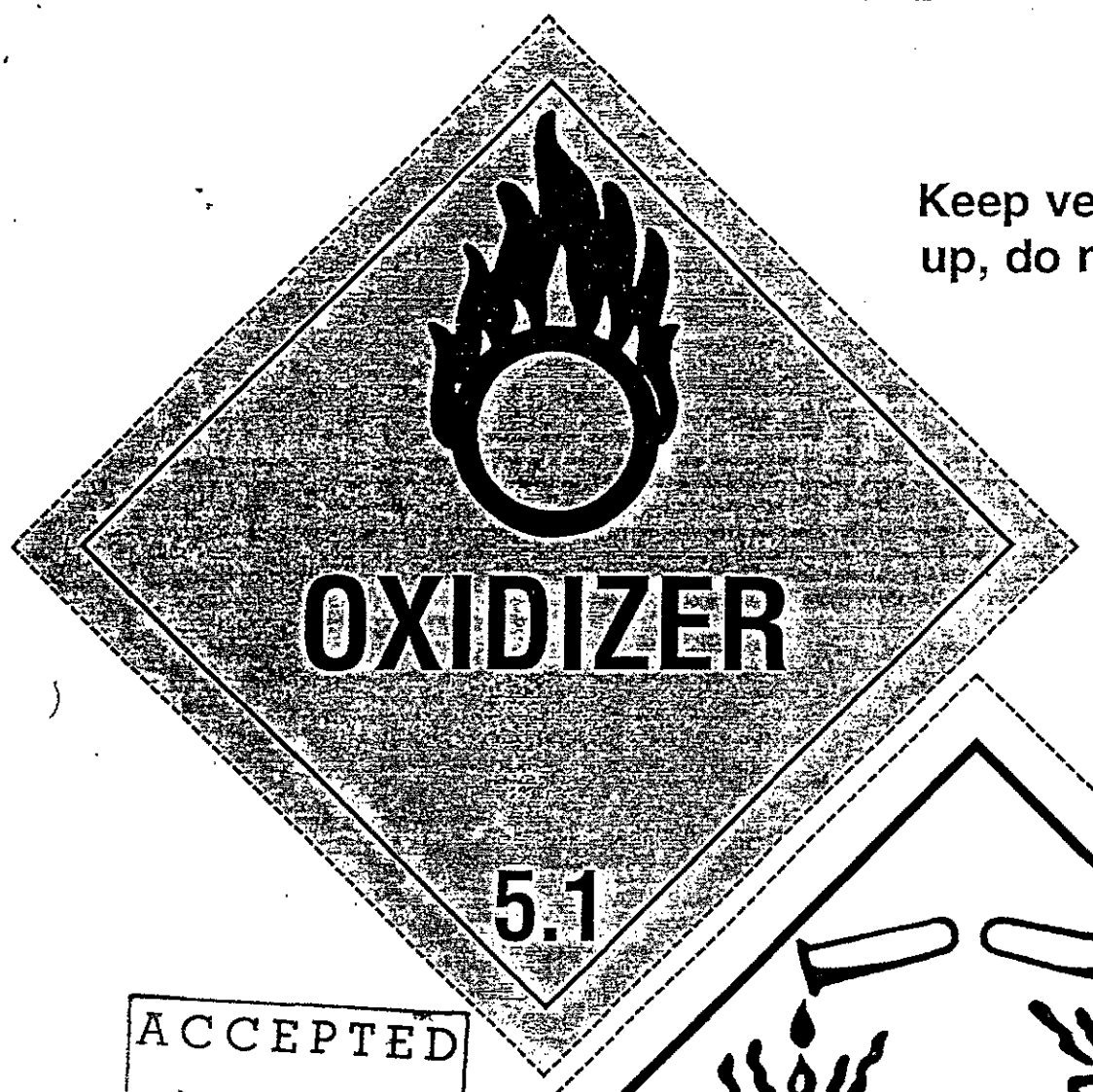

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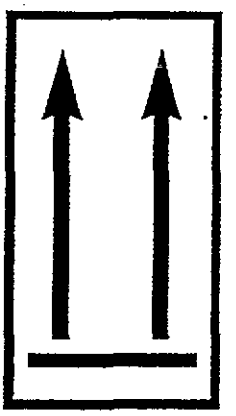

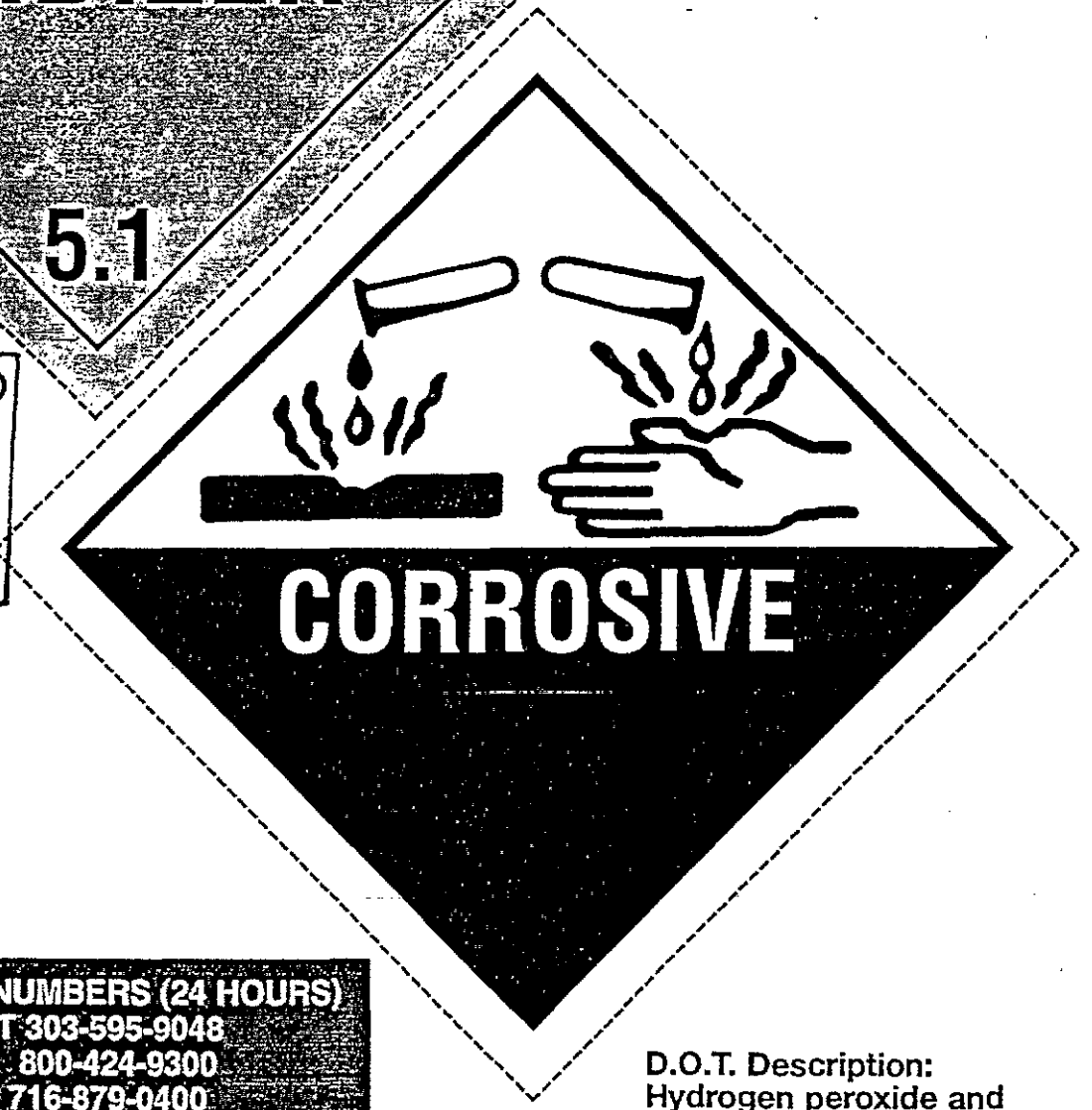

EMERGENCY TELEPHONE NUMBERS (24 HOURS)
MEDICAL: COLLECT 303-595-9048
TRANSPORTATION: 800-424-9300
OTHER: COLLECT 716-879-0400

For more information see Material Safety Data Sheet
Label Effective Date: October 1996

D.O.T. Description:
Hydrogen peroxide and peroxyacetic acid mixtures, stabilized with acids, water and not more than 6% peroxyacetic acid, UN 3149.