

US ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDES PROGRAMS  
REGISTRATION DIVISION (TS-767)  
WASHINGTON, DC 20460

EPA REGISTRATION NO.  
65402-1

DATE OF ISSUANCE

APR 05 1993

TERM OF ISSUANCE

NOTICE OF PESTICIDE: ☒ REGISTRATION  
☐ REREGISTRATION  
(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

NAME OF PESTICIDE PRODUCT

VigorOx Liquid Sanitizer

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

FMC Corporation  
Peroxygen Chemicals Division  
1735 Market Street  
Philadelphia, PA 19103

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/ reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the labeling changes listed below before you release the product for shipment:

a. Add the phrase "EPA Registration No. 65402-1".

b. It is preferred that the following statement be removed from the label

"Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations, or strictures may occur"

It is recommended that you consult with your medical staff regarding this statement and its implications. It would be more prudent for the physician to make this type of determination and/or consideration whenever the conditions warrant.

☐ ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

c. Delete the statements:

"Observation may be warranted. Treatment is controlled removal of exposure followed by symptomatic and supportive care"

d. Delete the statement:

No potable water rinse is required if used at or below 0.4% Vigorox.

NOTE: Potable water rinses are not permitted for food contact surfaces as per FDA directive.

e. Revised the statement: "... effective in eliminating a wide variety of problematic microorganisms..." to read

"... effective against a variety of microorganisms..."

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

John H. Lee  
Product Manager (31)  
Antimicrobial Program Branch  
Registration Division (H7505C)

Enclosures

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

# VigorOx™ Liquid Sanitizer

EPA Reg. No. 65402-1

EPA Est. No. 00279-NY-003

For Control of Microbes in Dairies,  
Wineries, Breweries and Beverage Plants

For Industrial Use Only

Active Ingredients: Peroxyacetic Acid	5.1%
Hydrogen Peroxide	21.7%

Inert Ingredients:	73.2%
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KEEP OUT OF REACH OF CHILDREN

**DANGER**

See side panel for additional precautionary statements

NET CONTENTS      gallons (    lbs.)

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, inhaled, or on clothing. Wear goggles or face shield and rubber gloves when handling. Wash thoroughly with soap and water after handling. Do not breathe vapor or enter an enclosed area without proper respiratory protection.

### Physical or Chemical Hazards

Strong oxidizing agent. Mix only with water. VigorOx™ is not combustible. At temperatures exceeding 156 F, decomposition occurs releasing oxygen. Released oxygen could initiate or promote combustion of other materials.

### Statement of Practical Treatment

If swallowed: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. If 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 eyelids intermittently. See a physician.

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

Note to Physician: Consideration should be given to careful endoscopic examination of the esophagus, stomach, and intestines. Esophageal burns, perforations, or strictures may occur. Probable mucosal damage contraindicates the use of gastric lavage. Observation may be warranted. Controlled removal of exposure followed by symptomatic and supportive treatment.

## EMERGENCY TELEPHONE NUMBERS

MEDICAL: COLLECT 303-595-9048

TRANSPORTATION: 800-424-9300

OTHER: COLLECT 716-879-0400

Label effective date: January 1993

**BEST AVAILABLE COPY**

## Storage and Disposal

### Storage

NEVER RETURN VigorOx 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 VigorOx™ with large volumes of water.

Avoid damage to containers. Keep container closed at all times when not in use. Keep container out of direct sunlight. To maintain product quality, store at or below 88 F. Do not store 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, or spark producing tools. Keep combustible and organic materials away. Flush spilled material with 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 volumes of water followed by discharge into a suitable treatment system in accordance with all local, state, and Federal environmental laws, rules, regulations, standards, and other requirements. Because acceptable methods of disposal may vary by location and because regulatory requirements may change, the appropriate regulatory agencies should be contacted prior to disposal.

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

#### Container Disposal

Drums are not returnable. Triple rinse drums with water. Dispose of drums in accordance with local, state, and Federal regulation. DO NOT REUSE DRUMS

## 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 sanitizing of equipment such as tanks, pipelines, evaporators, fillers, pasteurizers, and aseptic equipment in dairies, wineries, breweries, and beverage plants.

### Sanitizing 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:
  - a. Add 1.6 to 1.9 ounces VigorOx™ Liquid Sanitizer 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 (45 F) to 40 C (104 F) and a contact time of one (1) minute.
6. Allow surfaces to drain thoroughly before resuming operation.

No potable water rinse is required if used at or below 0.4% VigorOx™.

Always prepare a new sanitizing solution daily to ensure effectiveness. Do not reuse sanitizing solution. Dispose of any unused sanitizer in accordance with the disposal directions on this label.

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version 11293

APR 05 1993

RECEIVED  
BY [illegible]  
DATE [illegible]

65462-1

VigorOx™ is an equilibrium solution of two active ingredients - peroxyacetic acid (CH<sub>3</sub>COOOH) and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>).

VigorOx™ has been formulated for use in the circulation cleaning and sanitizing of equipment such as tanks, pipelines, evaporators, fillers, pasteurizers, and aseptic equipment in dairies, wineries, breweries and beverage plants. When properly diluted, VigorOx™ meets the specifications for an indirect food additive in accordance with 21 CFR 178.1010 (b) (30) and (c) (25). VigorOx™ is effective in eliminating a wide variety of problematic microorganisms.

## BENEFITS

- Excellent non-foaming action at low concentrations
- Broad spectrum sanitizing action
- Effective at low temperatures
- Non-corrosive to most food and beverage systems
- Non-absorptive in materials of plant construction
- Upon use, active ingredients breakdown into water, oxygen and acetic acid

ACCEPTED  
WITH COMMENTS  
by EPA Letter Dated:

APR 05 1993

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for registration  
sponsored under FIFRA Reg. No.

65402-1

## VigorOx™ Properties

Chemical	(% by weight)	Physical	
Peroxyacetic acid	5.1%	Melting/Freezing point	-25.9°C
Hydrogen peroxide	21.7%	Vapor pressure	22mm Hg
Inert ingredients	73.2%	Odor	strong, pungent
Active oxygen content	11.3%	Appearance	colorless liquid
		pH (1% solution)	2.5
		Solubility in water (20°C)	100%
		Density (lbs/gal)	9.17

## DIRECTIONS FOR USE

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

For use in the circulation cleaning and sanitizing of equipment such as tanks, pipelines, evaporators, fillers, pasteurizers, and aseptic equipment in dairies, wineries, breweries, and beverage plants.

### Sanitizing 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™ sanitizing solution as follows:  
Add 1.3 to 1.9 ounces VigorOx™ Liquid Sanitizer to 5 gallons of 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 minimum contact time of one (1) minute.
6. Allow surfaces to drain thoroughly before resuming operation.

No potable water rinse is required if used at or below 0.4% VigorOx™

Always prepare a new sanitizing solution daily to ensure effectiveness. Do not reuse sanitizing solutions. Dispose of any unused sanitizer.

## SHIPPING AND PACKAGING

The U. S. Department of Transportation (DOT) classifies VigorOx™ Liquid Sanitizer as an ORGANIC PEROXIDE.

VigorOx™ is packaged in DOT approved, vented, polyethylene drums.

- 30 gallon - net weight 250 pounds
- 55 gallon - net weight 475 pounds.

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

ACCEPTED  
with COMMENTS  
in EPA Letter Docket

APR 05 1993

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
on 04/05/93, the following pesticide  
product was found to be in violation of the  
FIFRA Act: FMC Corp., VigorOx™

65402-1

## SAFETY AND HANDLING PRECAUTIONS

Proper handling and storage of VigorOx™ Liquid Sanitizer solutions minimize health hazards. Material Safety Data Sheets (MSDS) provide information concerning exposure, emergency first aid, as well as disposal of VigorOx™ solutions. You may request an MSDS from any FMC office.

VigorOx™ solutions which are actively decomposing are potentially hazardous. Observe the following precautions to prevent decomposition:

- Avoid all contaminants, especially dirt, caustic, reducing agents, and metals. Contamination and impurities will reduce shelf life and can induce decomposition. Never return unused portions of VigorOx™ to the original container.
- Open flames and elevated temperatures should be avoided at all times. These conditions promote decomposition and the concurrent release of oxygen can initiate or promote combustion of other materials. (see Decomposition).
- Do not store VigorOx™ on wooden pallets or near other combustible materials.
- Store VigorOx™ only in the original vented containers. To ensure proper venting, keep drums upright and do not stack. Keep drums closed when not in use. Avoid damage to containers.

## PERSONAL PROTECTIVE EQUIPMENT

Concentrated VigorOx™ solutions and mists are corrosive to tissues. When handling VigorOx™ Liquid Sanitizer solutions follow the guidelines listed here and in the Material Safety Data Sheets (MSDS).

### EYES

Wear chemical type goggles or a face shield whenever handling or mixing VigorOx™ solutions. Due to the strong oxidizing nature of VigorOx™ direct contact with the eyes must be avoided. Any direct contact with the eyes can cause irreversible damage including blindness.

### RESPIRATORY SYSTEM

Always use in a well ventilated area. High concentrations of VigorOx™ vapors will irritate nose, throat and lungs. If strong odors are detected in an enclosed area, do not enter without self-contained breathing apparatus.

### SKIN

- Protect your hands with long, general purpose, neoprene gloves.
- Protect yourself with a long rubber or plastic apron
- Protect your feet with rubber or neoprene footwear

ACCEPTED  
with COMMENTS  
EPA Letter Dated:

APR 05 1993

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

65462-1

## STORAGE

### General

To maintain product quality, store VigorOx™ at or below 86°F (30°C). Do not store VigorOx™ in direct sunlight. Provide good ventilation of storage areas.

### Procedure for Release or Spill

Stop leak if this can be done without risk. Shut off or remove all ignition sources. Remove combustible and organic material. Flush spilled material with large quantities of water. Do not let undiluted material enter sewers or confined spaces.

## DISPOSAL

Undiluted VigorOx™ must never be poured down drains or directly into sewers. Unused, undiluted VigorOx™ solutions that become waste material are classified as hazardous wastes due to their low pH and oxidizing properties. Contact the appropriate local, state, or Federal regulatory agency prior to disposal.

An acceptable method for disposal of spilled material is to dilute with at least twenty volumes of water and allow the VigorOx™ solution to decompose followed by discharge into a suitable treatment system in accordance with all local, state, and Federal laws, rules and regulations.

## DECOMPOSITION

Decomposition reaction is exothermic and releases large volumes of oxygen and heat. The oxygen produced by decomposition may cause rupture of the container - especially if proper venting is not provided and the released oxygen can increase the intensity of a nearby fire.

If decomposition is suspected, observe the drums for bulging or excessive heat. Cool the drums by deluging with cold water. This will slow the decomposition. Call FMC for assistance (Collect 716-879-0400). Once the container has been cooled for at least 20 minutes, dilute the material with large amounts of water and flush to an acceptable disposal area or sewer if Federal, state, and local laws and regulations allow.

**BEST AVAILABLE COPY**

ACCEPTED  
with COMMENTS  
by EPA Region 1

**APR 05 1993**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
Registration No. 100-100000  
EPA 65402-1

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## FMC CORPORATION

FMC is a leader in the research, development and application of peroxygen technology. The FMC Chemical Products Group is headquartered in Philadelphia, PA, and is the largest producer of specialty peroxygen chemicals in North America.

FMC is a world leader in the development and manufacture of products which serve the food industry. FMC's agricultural chemicals protect crops in fields and orchards worldwide. FMC equipment harvests crops, handles produce, extracts juices, fills, conveys, packages, and warehouses diverse food products. FMC functional ingredients - phosphates, carrageenans, konjacs, and cellulose gels - enhance many foods.

FMC has substantial depth in research and development directly related to the food industry. FMC is committed to being the food industry's most valued supplier.

### CUSTOMER SUPPORT SERVICES

#### Quality

Product quality is of critical importance to FMC. Excellent quality reflects teamwork and good communication with our customers and throughout the FMC organization. There are many behind-the-scenes activities and programs carried out by FMC plant and technical staffs which have made our product quality second to none.

VigorOx™ is guaranteed to meet certified limits. We monitor incoming raw material and analyze each segment of the manufacturing operation. Deviations from quality parameters are instantly detected and corrected.

#### Customer Safety Assistance

FMC is committed to the proper delivery, handling and use of peroxygen products. Safety and handling programs conducted by FMC experts are available to all customers. We encourage you to take advantage of these programs which can be conducted at your location.

#### Technical Service

All FMC customers have access to a staff of technical service representatives at the Research and Development Center in Princeton, NJ and at the plant in Tonawanda, NY. These chemists and engineers are experienced in the production, use, distribution, and sale of peroxygen chemicals. They are capable of answering questions on the proper handling and use of VigorOx™ Liquid Sanitizer.

Our engineering services include the design and construction of storage facilities, as well as safety inspections of your present warehouse, and assistance in choosing materials of construction.

#### Distribution Services

FMC operates an extensive distribution network throughout North America and worldwide to provide customers with fast, dependable service.

FMC and VigorOx are Trademarks of FMC Corporation.

Because conditions of use are beyond our control, we make no warranty or representation, expressed or implied, except that the product described herein conforms to the chemical description shown on its label and that the information contained herein is to our knowledge true and accurate. Nothing contained herein should be construed as a recommendation of any specific use or as permission or recommendation to infringe any patent. No agent, representative or employee of this company is authorized to vary any of the terms of this notice.

Version 11293

ACCEPTED  
WITH COMMENTS  
In EPA Laboratory

APR 05 1993

65402-1