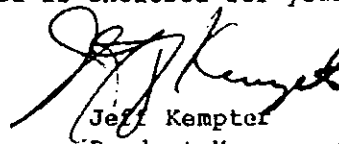


33576-43 1/1 PM-32

<p>US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (TS-767) WASHINGTON, DC 20460</p> <p><b>NOTICE OF PESTICIDE:</b> <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION (Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)</p>	<table border="1"><tr><td>EPA REGISTRATION NO. 33576-43</td><td>DATE OF ISSUANCE <b>19 JAN 1988</b></td></tr><tr><td colspan="2">TERM OF ISSUANCE</td></tr><tr><td colspan="2">NAME OF PESTICIDE PRODUCT Olin 3025</td></tr></table>	EPA REGISTRATION NO. 33576-43	DATE OF ISSUANCE <b>19 JAN 1988</b>	TERM OF ISSUANCE		NAME OF PESTICIDE PRODUCT Olin 3025	
EPA REGISTRATION NO. 33576-43	DATE OF ISSUANCE <b>19 JAN 1988</b>						
TERM OF ISSUANCE							
NAME OF PESTICIDE PRODUCT Olin 3025							
<p>NAME AND ADDRESS OF REGISTRANT (Include ZIP code)</p> <p>Olin Water Services Olin Corporation 120 Long Ridge Road Stamford, CT 06904</p>							
<p>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.</p>							
<p>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.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>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.</p>							
<p>This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:</p> <ol style="list-style-type: none"><li>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.</li><li>2. Add the phrase "EPA Registration No. 33576-43" to your label before you release the product for shipment.</li><li>3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.</li></ol> <p>If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.</p> <p>A stamped copy of the label is enclosed for your records.</p> <p> Jeff Kemper Product Manager (32) Disinfectants Branch Registration Division (TS-767C)</p>							
<p>Enclosures</p> <p><input type="checkbox"/> ATTACHMENT IS APPLICABLE</p> <p>SIGNATURE OF APPROVING OFFICIAL</p> <p><b>BEST AVAILABLE COPY</b></p> <p>DATE</p>							

*Pringle 1-19*

19 JAN 1988

Olin Water Services  
Olin Corporation  
120 Long Ridge Road  
Stamford, CT 06904

Attention: H.H. Klein

Gentlemen:

Subject: Olin 3025  
EPA Registration No. 33576-43

The registration record for the product referenced above has been amended to include the additional brand names listed below.

Additional Brand Names

Olin 4025  
Olin 4125  
Olin 6125  
Olin 6225  
Olin 7125  
Technical Sodium Chlorate Solution 25

It is understood that the labels will be identical with that of the basic label accepted under this registration except for product name.

Sincerely yours,

Jeff Kempter  
Product Manager (32)  
Disinfectants Branch  
Registration Division (TS-767C)

**BEST AVAILABLE COPY**

92081:I:Pringle:K-10:KENCO:01/14/88:01/26/88:aw:VO:lf:aw

CONCURRENCES						
SYMBOL	15-767C					
SURNAME	Pringle					
DATE	1-19					

OFFICIAL FILE COPY

EPA Reg No  
33576-

OLIN 3025

FOR USE IN THE MECHANICAL GENERATION

OF CHLORINE DIOXIDE AS A DISINFECTANT  
OR FOR MICROORGANISM CONTROL

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMAN AND DOMESTIC ANIMALS**

**DANGER: HIGHLY CORROSIVE - CAUSES EYE DAMAGE AND SKIN BURNS. IRRITATING TO NOSE AND THROAT. MAY BE HARMFUL IF INHALED. MAY BE FATAL IF SWALLOWED.**

Do not get in eyes, on skin, or on clothing. Do not handle with bare hands. Wear goggles or face shield and use neoprene gloves and only thoroughly clean utensils when handling. Irritating to nose and throat. Avoid breathing fumes. Remove and wash contaminated clothing to avoid fire.

**ENVIRONMENTAL HAZARDS** - This pesticide is toxic to fish. Do not discharge into lakes, streams, ponds or public water unless in accordance with an NPDES permit. For guidance, contact your Regional Office of the EPA. Do not contaminate water by cleaning of equipment or disposal of waste. Apply this pesticide only as specified on this label.

**CHEMICAL HAZARDS:** Danger: Dry OLIN 3025 is a strong oxidizing agent. Mix only into water. Contamination may start a chemical reaction with generation of heat and possible fire and explosion. Do not contaminate with garbage, dirt, organic matter, household products, chemicals, soap products, paint products, solvents, acids, vinegar, beverages, oils, pine oil, dirty rags or any other foreign matter.

**EMERGENCY HANDLING:** In case of contamination or decomposition, do not reseal container. If possible, isolate container in open and well-ventilated area. Flood with large volumes of water. If fire occurs, extinguish fire by applying large volumes of water. Any unopened drums near the fire should be cooled by spraying with water.

**ACTIVE INGREDIENTS:** Sodium Chlorate.....25%  
**INERT INGREDIENTS:**.....75%  
Contains 2 lbs. Sodium Chlorate per gallon at 70°F.

Keep Out Of Reach Of Children

**DANGER**

"See precautionary statement on side panel"

**FIRST AID - STATEMENT OF PRACTICAL TREATMENT**

If in **EYES:** Flush with plenty of water for at least 15 minutes. Call a physician.

If on **SKIN:** Flush skin with cold water for at least 15 minutes. Call physician.

If **Swallowed:** Give large amounts of water. Call physician.

**DIRECTIONS FOR USE**

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

**FEED REQUIREMENTS**

Feed rates of OLIN 3025 will depend on the severity of contamination and the degree of control desired. The exact dosage will depend on the size of the system and residual necessary for effective control in EPA. Approximately one pound of chlorine dioxide is generated from 3.7 pounds of OLIN 3025.

**DIRECTIONS FOR**

**METHOD OF FEED**

Large amounts of chlorine from OLIN 3025 with methanol, sodium chlorate dioxide and electrochemical

Not for use in the manufacturing of board products that will be

Consult Product Bulletin for the chlorine dioxide generated by OLIN 3025

**STORAGE**

**PESTICIDE DISPOSAL:** Do not feed or store in tightly closed container, roll or skid drum. Keep in a cool, dry, well-ventilated area away from heat or open flame. Do not

**CONTAINER DISPOSAL:** Then offer for recycling and dispose of in a sanitary manner. If allowed by state or local health department, burned, stay out of sink. Improper disposal of empty containers is a violation of EPA. For more information, contact your local Environmental Control representative at the number listed on the label.

JAN 19 1988

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 33576-43

1087

FOR INDUSTRIAL USE ONLY

OLIN WATER SERVICES, OVERLAND PARK, KANSAS 66210

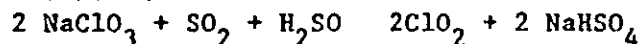
Olin Corporation, Stamford, Conn.

**BEST AVAILABLE COPY**

Olin technical sodium chlorate dry and solution products are offered as precursors of chlorine dioxide. Commonly, solutions of 25% active sodium chlorate or less are used to charge chlorine dioxide generators.

#### Generation of Chlorine Dioxide

Chlorine dioxide can be generated by activating technical sodium chlorate ( $\text{NaClO}_3$ ) with a reducing agent and an acid source. The most commonly available reducing agent is sulfur dioxide. It may be reacted in solution or in its gaseous form with sodium chlorate. Chlorine dioxide can also be prepared from sodium chlorate with other reducing agents such as methanol, sodium chloride, hydrosen peroxide and electrochemical. The principal reaction of sodium chlorate with sulfur dioxide is:



Stoichiometrically, 7.6 lbs of technical sodium chlorate reacts with 0.5 lbs of sulfur dioxide to produce 1.0 lb of chlorine dioxide. In most cases, the reaction is carried out by contacting sulfur dioxide gas with sodium chlorate solution and sulfuric acid in a reactor for under vacuum. The chlorine dioxide is drawn off with diluent air.

Commercial generators are available based upon the above chemistry. The ease of generation of chlorine dioxide in a closed system is illustrated in Figure 1, using activation by sulfur dioxide as an example.

Sodium chlorate solution and sulfuric acid are pumped into the reactor and reacted with sulfur dioxide gas. The resulting chlorine dioxide is drawn off by vacuum with diluent air.

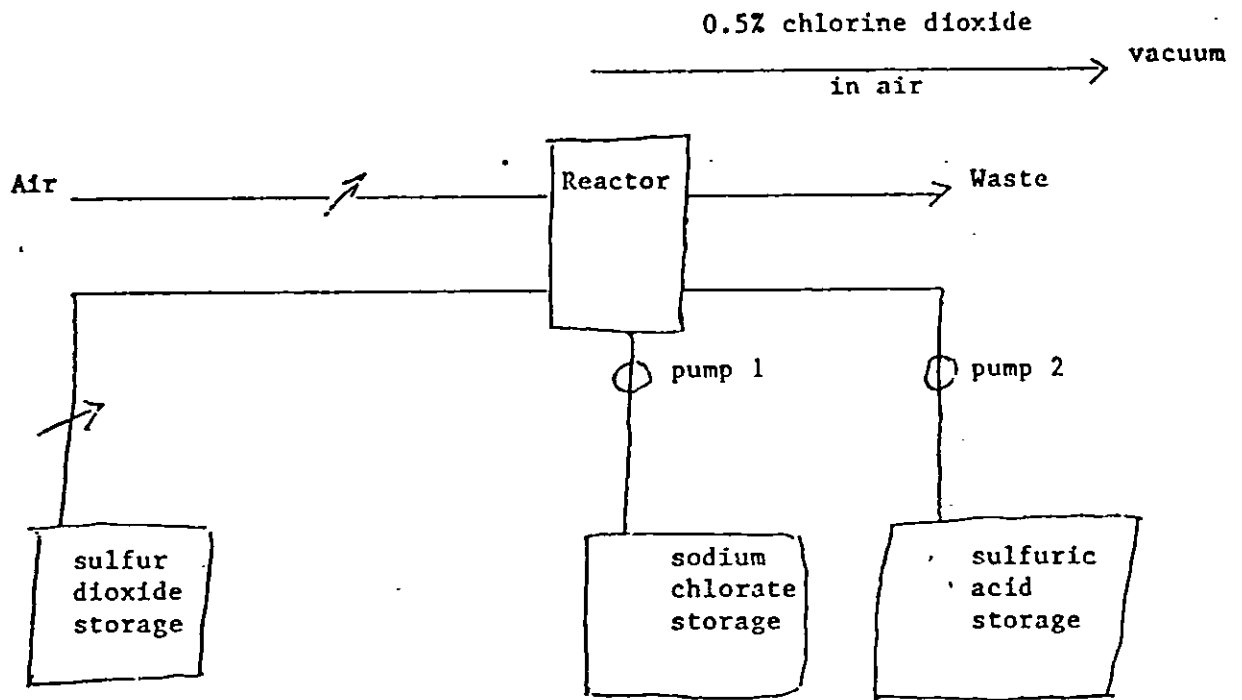
ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

JAN 19 1988

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
33576-43

FIGURE 1

Chlorine Dioxide Generator



## PRODUCTS

Technical sodium chlorate used to generate chlorine dioxide is available in both solution and dry forms. Typical chemical and physical properties are given for 2.3% sodium chlorate solution.

### Typical Properties of 45% Sodium Chlorate

Sodium Chlorite, min (%)	25
Sodium Chloride, max (%)	15
Water (%)	60
Appearance	Clear, slightly yellow solution
Density (lbs/gal)	11.19 lbs/gal.
Crystallization Point (°C)	0°C

## CHLORINE DIOXIDE APPLICATIONS

Stripping Dyestuffs from Textiles. Chlorine dioxide, generated from sodium chlorate under acidic conditions removes dyestuffs from textiles with a minimum of fiber degradation. However, its effectiveness depends upon the dyestuff and the type of fabric. This method also provides a good bottom for redyeing.

Pulp Bleaching. Sodium chlorate is used to generate chlorine dioxide for bleaching pulp. It is most frequently used in situations where the chlorine dioxide requirements are small and capital and operating costs are restrictive.

Upgrading of Fats and Oils. Chlorine dioxide generated from sodium chlorate is effective in bleaching fats. The process is simple, low cost, and since it eliminates the need for a filter medium, produces a higher yield than other methods. (About 30% of the weight of the filter residue, which is generally discarded, is tallow.) Problems such as storage and handling of the filter medium and disposal of filter residues are eliminated as well.

Bleaching of Natural Foliage. Chlorine dioxide, generated from sodium chlorate, is used for removing color from natural foliage. The foliage can then be used in the white state or it can be dyed. Degradation of cellulosic structure is minimal.

Treatment of Potable Water. Sodium chlorate is a simple way to generate chlorine dioxide, which has long been used to remove tastes and odors in potable water. Chlorine dioxide is also used in the disinfection of water, particularly where THMs are concerned. And it oxidizes soluble manganese and iron compounds, eliminating a major cause of stained sinks and fixtures. Chlorine dioxide has also found application in disinfection of sewage and plant wastes, and destruction of phenolics, simple cyanides and sulfides by chemical oxidation.

7/9

Bacterial Control in Oil Wells and Petroleum Systems.

Bacterial Slime Control in Paper Mills. Some of the major operational problems in paper and paperboard production are caused by proliferation of microbiological organisms in white water and stock systems. Chlorine dioxide as generated from sodium chlorate has excellent microbiological control properties. Chlorine dioxide, an oxidizing biocide, can control microbiological growths which cause paper malodors and discoloration, deterioration of felts, equipment corrosion, fouling of pipes and showers, and paper quality problems such as spots, specks and holes.

Food Processing. Chlorine dioxide, simple to generate and control from sodium chlorate, is highly effective for microbiological control in organically contaminated flume waters. Control of microbiological growths is necessary to insure food product safety and quality. Chlorine dioxide has also found application in cherry bleaching.

Algae Control in Cooling Towers. Chlorine dioxide as generated from sodium chlorate is an efficient and economical product to control microbiological growths under conditions unfavorable to chlorine in industrial cooling waters. Chlorine dioxide is the primary microbiological control agent in high pH, ammonia-nitrogen contamination, or persistent slime problem situations.

## STORAGE AND HANDLING

Do not contaminate sodium chlorate with foreign material such as dirt, organic matter, chemicals, soap products, solvents, acids or paint products. Contamination may start a chemical reaction with generation of heat. A fire or explosion may result. Flush all spills with large amounts of water.

Dry sodium chlorate. Do not expose to moisture. Store sodium chlorate in a cool, dry place in the original container. Always replace cover tightly. Mix only into water using a clean, dry metal scoop reserved for this product alone.

Keep away from flame or any burning material (such as lighted cigarette). If fire occurs, extinguish with plenty of water. Cool any unopened drums near the fire by spraying water on them.

Rinse empty containers thoroughly with water and dispose of in a chemically safe manner.

Sodium Chlorate Solution. Flush all spills with large amounts of water. If sodium chlorate solution is allowed to dry, the precautions described for dry sodium chlorate apply.

Specifically designed dispensing equipment should be used in accordance with manufacturers instructions and according to state regulatory agency recommendations for dosages or residual chlorine dioxide levels which should be maintained for each specific site of application.

## TOXICOLOGICAL PROPERTIES

Do not get in eyes, on skin or on clothing. Sodium chlorate is highly corrosive and may cause skin or eye damage. It may be harmful or fatal if swallowed.

## PERSONNEL PROTECTION

When handling sodium chlorate, goggles, neoprene gloves, coveralls and boots should be worn. Local exhaust is required where exposure to dust or mist might occur. If sodium chlorate is spilled on clothing, remove and wash contaminated clothing at once to avoid the potential of fire.

## FIRST AID

Contact with skin: Wash off excess chemical and flush skin with cool water for at least 15 minutes. Call a physician.

Contact with eyes: Flush eyes with cool water for at least 15 minutes. Call a physician.

## SPILL AND LEAK PROCEDURES

Remove all sources of ignition. Wear NIOSH/MSHA approved self contained breathing apparatus. Follow OSHA regulations for respirator use. (See Title 29, Section 1910.34, Code of Federal Regulations.) Wear goggles, coveralls and neoprene gloves and boots. Clean up in a manner to avoid contamination with organic material. Do not return material to original container. Place in fresh container and isolate outside or in a well ventilated area. Do not seal the container. Flush any residual material with large quantities of water.

## DISPOSAL

Dispose of unused product in a manner approved for this material. Consult the appropriate federal, state and local agencies to ascertain proper disposal procedures.

## TECHNICAL SERVICE

Technical assistance is available to facilitate further investigation or use of sodium chlorate and sodium chlorate solutions. If you have a specific question, desire a sample or need more information, please write or call your nearest Olin Sales Office.

Water Services

Olin Water Services.  
Olin Corp.  
120 Long Ridge Road  
Stamford, CT 06904