UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

APR 25 2002

Kenneth Howlett
Nu Tek International, Inc.
1220 North Market Street, Suite 606
Wilmington, DE 19801

SUBJECT: January 23, 2002
Verox®-15
EPA Registration Number 73727-18

Dear Mr. Howlett:

The application cited above is conditionally accepted in accordance with 40 CFR 3(c)(7)(A) provided that you revise the label as follows:

1. Delete the asterisk at Sodium Chlorite and its reference *Available Chlorine....23%.

2. In the first section of precautionary statements, move the signal word danger in front of "Highly Corrosive". After "May be fatal if swallowed" insert the sentence "Do not get on bare hands." Change the last sentence to read "Remove contaminated clothing at once to avoid a fire and wash separately before reuse."

3. Under heading Treatment in the second sentence change "and/or muriatic acid" to read and/or with a Generally Recognized as Safe (GRAS) acid".

4. Fix typo at Potable Water Treatment section for contact time (CT Value).

5. As requested, the Agency will update its files to reflect the name change of your product.

In addition, to the above, certification of Child Resistant Packaging for your 1 gallon product container in accordance with 40 CFR § 157.22. A copy of your new label is enclosed. Please submit two copies of your revised finished labels for our files. If you have any questions regarding this letter, call Tom Luminello at (703) 308-8075.

Sincerely yours,

Robert S. Brennis
Product Manager (32)
Regulatory Management Branch II
Antimicrobial Division (7510-C)

Enclosure

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VEROX®-15

CHLORINE DIOXIDE PRECURSOR FOR MICROBIAL CONTROL IN WATER AND WASTEWATER

delete

ACTIVE INGREDIENT:
Sodium Chlorite..... 15%
INERT INGREDIENTS.....75%
TOTAL.....100%

delete

~~*Available Chlorine.....29%~~

KEEP OUT OF REACH OF CHILDREN

DANGER!

See Side Panels for Additional Precautions

FIRST AID

If on Skin or Clothing :	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If Swallowed:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious Person.
If Inhaled:	**Move person to fresh air. If person is not breathing,** call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for treatment advice.
If In Eyes::	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

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with COMMENTS
In EPA Letter Dated:
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73727-18

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-858-7378 for emergency medical treatment information.

EPA REG. NO. 73727-18

EPA EST. 73727-DE-001
EPA EST. 73727-GA-001
EPA EST. 73727-FL-001
EPA EST. 73727-MA-001

Manufactured by:
NuTek™ International, Inc.
Wilmington, DE 19801

NET CONTENTS:_____ gal
_____ liters

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER move

HIGHLY CORROSIVE. CAUSES EYE AND SKIN DAMAGE. MAY BE FATAL IF SWALLOWED. Irritating to nose and throat. Avoid breathing vapor. Do not handle with bare hands. Wear goggles or face shield and neoprene gloves and use only clean, dry utensils when handling this product. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash separately ~~to avoid fire.~~ before reuse. at once to avoid a fire

Do not get on bare hands.

CHEMICAL HAZARDS

Dry sodium chlorite is a strong oxidizing agent. This product becomes a fire or explosive hazard if allowed to dry. Mix only into water. Contamination may start a chemical reaction with generation of heat, liberation of hazardous gases (chlorine dioxide is a poisonous, explosive gas) and possible fire and explosion. Do not contaminate with garbage, dirt, organic matter, household products, chemicals, soap products, paint products, solvents, acid, vinegar, beverages, oils, pine oil, dirty rags, or any other foreign matter.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic organisms. 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.

DIRECTIONS FOR USE

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

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labeling.

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TREATMENT

VEROX®-15 is a source of chlorine dioxide for use in controlling microorganisms in water and wastewater systems. In treating water systems, VEROX®-15 must be used only in conjunction with approved chlorine dioxide generation equipment, which utilizes chlorine gas, or a combination of chlorine solution and/or ~~muriatic acid~~ or food grade acid as the activating agent. In general, the chlorine dioxide solution is applied to achieve residual concentrations of 10 ppm or less for water treatment. Because of the variability of demand in water and process systems the dosage of chlorine dioxide which is required to achieve the target residuals, is normally lower for continuous feed systems than for slug or timed feed applications. The minimum acceptable residual for chlorine dioxide, as determined by a verified procedure is 0.1 ppm for a minimum one minute contact time.

with a GRAS acid,

POINTS OF ADDITION

In all cases, generated chlorine dioxide solution be applied in such a manner to ensure adequate mixing and minimal violation. The water system to be treated may either be passed directly through the chlorine dioxide generator or treated via side stream injection point. The generation system employed must be in good working order and capable of achieving chlorine dioxide solutions free from chlorine contamination. Residual determination procedures must be substantiated methods and must also be specific for chlorine dioxide or used in systems where no chlorine contamination is possible. Do not add VEROX®-15 directly to process water.

POTABLE WATER TREATMENT

Feed Requirements:

The required dosages will vary with water conditions and to the extent of contamination present. For municipal and other potable water systems, a chlorine dioxide residual concentration of up to 2 ppm is sufficient to provide adequate disinfection. Normal target residual concentrations are in the 0.20 - 0.75 ppm range. Chlorine dioxide must be applied at a sufficient residual concentration for a sufficient contact time (C•T Value) to achieve the required disinfection. The concentration of total residuals oxidants (chlorine dioxide, chlorite and chlorate) should be monitored such **that it does not exceed 1.0 ppm in the system.**

typo

Method of Feed:

VEROX®-15 is converted to chlorine dioxide though a chlorine dioxide generator. Chlorine dioxide solutions must be applied to the processing system at a point, and in such a manner which permits adequate mixing and even distribution. The feed point must be well below the water level to prevent volatilization of the chlorine dioxide. Do not apply VEROX®-15 directly to the potable water. Avoid co-incident feeding of chlorine dioxide with lime or powdered activated carbon.

Chlorine Dioxide Analysis:

Residual chlorine dioxide concentrations must be determined using a VEROX®- Test kit.

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Feed Requirements:
The required dosages will vary with water conditions and the degree of contamination present. For most municipal and other wastewater systems, a chlorine dioxide residual concentration of up to 5 ppm is sufficient to provide adequate disinfection.

For sulfide odor control, between pH 5-9, a minimum of 5.2 ppm (wt) of chlorine dioxide should be applied to oxidize 1 ppm of sulfide (measured as sulfide Ion). For phenol destruction, at pH less than 8, 1.5 ppm chlorine dioxide will oxidize 1 ppm phenol; at pH greater than 10, 3.3 ppm chlorine dioxide will oxidize 1 ppm phenol.

Method of Feed:
VEROX®-15 is converted to chlorine dioxide through a chlorine dioxide generator. Chlorine dioxide solutions must be applied to the processing system at a point, and in a manner which permits adequate mixing and uniform distribution. The feed point must be well below the water level to prevent volatilization of the chlorine dioxide. Avoid co-incident feeding of chlorine dioxide with lime or powdered activated carbon.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations should be determined using a VEROX® Test kit.

FOOD PROCESSING PLANTS, DAIRIES, BOTTLING PLANTS, BREWERIES

For microbial control in typical food processing water systems, such as flume transport, chill water systems, hydrocoolers, and other water systems. Apply VEROX®-15 through a chlorine dioxide generation system to achieve chlorine dioxide residual concentration ranging from 0.25 to 5.0 ppm.

Chlorine dioxide generated from VEROX®-15 may also be used for washing whole uncut and unpeeled potatoes without subsequent potable water rinse requirement, provided that the concentration of total residual oxidants meet the residual limitations of $\leq$ 1.0 ppm.

Residual concentrations up to 5.0 ppm chlorine dioxide in process water may be used as a water sanitizer for fruit and vegetable washing and cut and peeled potatoes without a subsequent potable water rinse requirement, provided that the concentration of total residual oxidants meet the residual limitations of $\leq$ 1.0 ppm.

Residual concentrations up to 5.0 ppm chlorine dioxide in process water may be used for washing whole uncut and unpeeled fruits and vegetables although a final potable water rinse is required if the residual exceeds 1 ppm.

Potatoes, including those which have been peeled or cut, may be treated with sufficient chlorine dioxide to product a residual concentration of up to 5.0 ppm provided this is followed by a potable water rinse.

Feed Requirements:
The required dosages will vary with process conditions and the degree of contamination

present. Depending on the requirements of the specific water system, chlorine dioxide must be applied continuously or intermittently to achieve a chlorine dioxide residual concentration between 0.25 and 5.0 ppm.

Water containing up to 3 ppm residual chlorine dioxide may be used for washing fruits and vegetables provided that the treatment is followed by a potable water rinse, blanching or cooking.

Method of Feed:
VEROX®-15 must be applied to the processing system at a point, and in a manner which permits adequate mixing and uniform distribution. The feed point must be well below the surface of the water to prevent loss of the chlorine dioxide.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations should be determined using a VEROX® Test kit.

GENERAL INDUSTRIAL PROCESS WATER TREATMENT (OILFIELD INJECTION WATER, WHITE WATER PAPER MILL SYSTEMS, AND RECIRCULATING COOLING TOWERS)

INDUSTRIAL PROCESS WATER TREATMENT

Feed Requirements:
The required dosages will vary with water conditions and the degree of contamination present. For most process water, a chlorine dioxide residual concentration of up to 5 ppm is sufficient to provide adequate disinfection.

Method of Feed:
VEROX®-15 is converted to chlorine dioxide through a chlorine dioxide generator. Chlorine dioxide solutions must be applied to the processing system at a point, and in a manner which permits adequate mixing and uniform distribution. The feed point must be well below the water level to prevent volatilization of the chlorine dioxide. Avoid co-incident feeding of chlorine dioxide with lime or powdered activated carbon.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations should be determined using a VEROX® Test kit.

OILFIELD INJECTION

Feed Requirements:
The required dosages will vary with process conditions. VEROX®-15 may be applied either continuously or intermittently through a chlorine dioxide generating system to oil well production water as it is separated from the oil, and before it is re-injected into the well.

For continuous feeds, chlorine dioxide may be applied at dosages slightly higher than sulfide's oxidative demand as determined by a demand study. For intermittent treatment, chlorine dioxide must be applied at a shock dosage of 200-3000 ppm.

Method of Feed:
VEROX®-15 is applied through a chlorine dioxide generator. Chlorine dioxide solutions must be fed where adequate mixing and uniform distribution can be accomplished. Multiple treatment points may be required in some cases. The feed point must be below the water level to prevent volatilization of the chlorine dioxide.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations should be determined using a VEROX® Test kit.

WHITE WATER PAPER MILL SYSTEMS

Feed Requirements:
The required dosage will vary with the degree of microbiological and process contamination present. Depending on the specific requirements of the system, VEROX®-15 should be applied continuously or intermittently through a chlorine dioxide generating system to achieve a chlorine dioxide residual concentration between 0.1 and 5.0 ppm. Intermittent treatments must be repeated as often as necessary to maintain control.

Method of Feed:
VEROX®-15 is converted to chlorine dioxide through a chlorine dioxide generator. Chlorine dioxide solutions must be applied to the processing system in a manner that permits adequate mixing and uniform distribution. In many systems, this may require multiple feed points. The feed points must be carefully selected to provide effective microbial control at critical points within the paper-mill system. Feed points must be well below the surface of the water to prevent volatilization of the chlorine dioxide.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations must be determined using a VEROX® Test kit.

RECIRCULATING COOLING TOWERS

Feed Requirements:
For control of bacterial slime and algae in industrial recirculating and one-pass cooling systems, the required dosage will vary depending on the exact application and the degree of contamination present. The required chlorine dioxide residual concentrations range between 0.1 and 5.0 ppm. Chlorine dioxide may be applied either continuously or intermittently. The typical chlorine dioxide residual concentration range is 0.1 - 1.0 ppm for continuous doses, and 0.1 - 5.0 ppm for intermittent doses. The minimum acceptable residual concentration of chlorine dioxide is 0.1 ppm for a minimum one minute contact time.

Method of Feed:
VEROX®-15 chlorine dioxide must be fed to the cooling tower drip pan (cold water well) or other feed point that permits adequate mixing and uniform distribution. The feed point must be well below the water level to prevent volatilization of the chlorine dioxide.

Chlorine Dioxide Analysis:
Residual chlorine dioxide concentrations must be determined using a VEROX® Test kit

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STORAGE AND DISPOSAL

Storage: Do not contaminate water, food or feed by storage or disposal. Keep product in tightly closed container when not in use. Don't drop, roll or skid container. Keep upright. Always replace cover. Store in a cool, dry well-ventilated area away from direct sunlight and heat to avoid deterioration.

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 quantities of water. Any unopened drums near the fire should be cooled by spraying with water.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Disposal: Triple rinse all containers. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. If incinerated, stay out of smoke.

DOT SHIPPING NAME:
CHLORITE SOLUTION
8 (CORROSIVE); UN 1908, PGIII

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