Micro Kleen

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS: Highly corrosive, causes irreversible eye damage and skin burns. Do not get in eyes, on skin, or clothing. May be fatal if swallowed. Do not get on bare hands. Wear goggles or face shield and neoprene gloves when handling. Wash thoroughly with soap and water after handling and before eating, drinking, using tobacco, or using the toilet. Remove contaminated clothing at once to avoid fire and wash separately before reuse. Avoid breathing fumes and leave poorly ventilated areas as soon as possible and do not return until odors have dissipated.

ENVIRONMENTAL HAZARDS: This product is toxic to fish and other 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.

PHYSICAL AND CHEMICAL HAZARDS

DANGER: This product becomes a fire or explosive hazard if allowed to dry. Strong oxidizing agent. Mix or dilute into water only. Mixing with acids, or alcohol, or other chemicals may cause evolution of chlorine and chlorine dioxide gas which is toxic and may be explosive. Combustible materials contaminated with this product may burn rapidly. Keep handling areas and equipment clean and free of oils, greases, combustibles, and dust. Do not contaminate this product with garbage, dirt, organic matter, paint products, solvents, acids, vinegar, beverages, oils, pine oils, dirty rags, or other foreign matter. Do not expose to hot surfaces, sparks or open flame.

STORAGE AND DISPOSAL

DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL: Store upright in cool, dry and well-ventilated place. Avoid excessive heat or freezing. Protect from contact with other chemicals; avoid storage with organic chemicals, acid reducers and combustible material. Keep container tightly closed when not in use. In case of spills, flush and strain promptly to sewer with large quantities of water. Do not allow liquid to dry out because this could present a fire hazard. If fire occurs, extinguish with large volume of water. Avoid exposure to high temperatures during storage. Store remote from other chemicals and combustible materials. Do not spill or dilute. PESTICIDE DISPOSAL: Do not contaminate water, food, or feed by storage or 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 directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Triple rinse container or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

EMERGENCY HANDLING: In case of contamination or decomposition, do not reseat container. Isolate in an open, well-ventilated area. Flood with large volumes of water. Cool unopened drums in vicinity by water spray.

WARRANTY: Seller expressly warrants that the product conforms to its chemical description. There are no warranties associated with the sale of this product either express or implied, including but not limited to the warranties of fitness for a particular purpose or use.
DIRECTIONS FOR USE

METHOD OF APPLICATION
Use Micro Kleen with a Chlorine Dioxide Generator to generate an aqueous chlorine dioxide solution. Alternatively, Micro Kleen can be used to form acidified sodium chlorite solutions by mixing the product with a Generally Recognized as Safe (GRAS) acid such as citric, phosphoric, hydrochloric or acetic acid. Chlorine Dioxide Generators react Micro Kleen with either chlorine or a chlorine solution and hydrochloric acid. The generated chlorine dioxide solution can be added at a point in the system to be treated which ensures uniform mixing. Follow all instructions in the chlorine dioxide generator manual carefully. Always prepare and use chlorine dioxide solutions in a well-ventilated area.

APPLICATIONS

POTABLE WATER AND WASTEWATER DISINFECTION: For most municipal and other potable water systems, a chlorine dioxide residual concentration up to 2.0 ppm is sufficient to provide adequate disinfection. Typically, the target residual concentrations range from 0.20-0.75 ppm. Monitor the distribution system to ensure that the chlorite concentration does not exceed its maximum contaminant level (MCL) of 1 mg/L and that chlorine dioxide does not exceed its maximum residual disinfection level (MRDL) of 0.8 mg/L. For wastewater and sewage applications, residual chlorine dioxide concentrations up to 5.0 ppm are generally adequate.

FOOD PROCESSING PLANTS, DAIRIES, BOTTLING PLANTS AND BREWERIES, FOOD PLANTS PROCESS WATER: For microbial control in typical food processing water systems, such as flume transport, chill water systems, hydro coolers, and retort cooling water apply Micro Kleen through a chlorine dioxide generation system to achieve a chlorine dioxide residual concentration ranging from 0.25 to 5.0 ppm.

Residual concentrations of up to 5.0 ppm chlorine dioxide generated from Micro Kleen may also be used as a water sanitizer for fruit and vegetable washing and cut and peeled potato products followed by a subsequent potable water rinse.

POULTRY PROCESSING WATER: Use Micro Kleen to generate chlorine dioxide for use as an antimicrobial agent in water used in poultry processing in an amount not to exceed 3 ppm residual chlorine dioxide as determined by an appropriate method.

AQUEOUS DISINFECTION SYSTEMS FOR CIP CLEANING: If the concentration of chlorine dioxide generated from Micro Kleen exceeds 5.0 ppm, a potable water rinse must follow treatment. Care must be taken to ensure the biological and chemical quality of the potable water.

GENERAL INDUSTRIAL PROCESS WATER TREATMENT (OILFIELD INJECTION WATER, WHITE WATER PAPER MILL SYSTEMS, AND RECIRCULATING COOLING TOWERS): For control of microbial slime, these systems will require a chlorine dioxide residual concentration ranging between 0.25 and 5.0 ppm.

ONCE THROUGH COOLING WATER SYSTEMS: Control of mollusks can be effectively accomplished using Micro Kleen as directed in commercial and industrial once through cooling water systems. Micro Kleen may be fed on a continuous or slug basis depending on the degree of system fouling.
SLUG DOSE: Add 42 to 210 lbs. of chlorine dioxide per million gallons of water (5 to 25 ppm).
CONTINUOUS DOSE: Add 2 to 16 lbs. of chlorine dioxide per million gallons of water (0.25 to 2 ppm).

IRRIGATION WATER SYSTEMS INCLUDING SPRINKLER, DRIP, RECIRCULATING AND MICRO IRRIGATION SYSTEMS: Control of bacteria, mollusks, and slime can be effectively accomplished using Micro Kleen as directed in sprinkler, drip, recirculating and micro irrigation water systems. Micro Kleen may be fed on a continuous or slug basis depending on the degree of system fouling.
SLUG DOSE: Target the residual chlorine dioxide concentration to between 0.25 and 25 ppm for slug dosing. Repeat applications as needed to maintain control.
CONTINUOUS DOSE: Target the chlorine dioxide concentrations to up to 5 ppm from continuous dosing.