FORMULA 312


ACTIVE INGREDIENTS: GLUTARALDEHYDE .......................... 45% INERT INGREDIENTS .................................................. 55%

KEEP OUT OF REACH OF CHILDREN

DANGER

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

KEEP OUT OF REACH OF CHILDREN

Corrosive. Causes irreversible eye damage. Causes skin burns. Harmful if ingested. May be fatal if swallowed. Harmful if absorbed through the skin or inhaled or frequently repeated skin contact may cause allergic reactions in some individuals. Causes asthmatic signs and symptoms in hyper-reactive individuals.

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor. Do not swallow.

Wear goggles, protective clothing, and butyl or nitrile gloves.

Wash thoroughly with soap and water after handling.

Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. 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.

STORAGE AND HANDLING

FORMULA 312 is incompatible with many commonly used materials of construction such as steel, galvanized iron, aluminum, tin, and zinc. FORMULA 312 can be stored and handled in baked phenolic-lined steel, polyethylene, stainless steel, or reinforced epoxy-plastic equipment. This product freezes at about 1°F (-17°C). Therefore, unless the storage tank is inside or underground, heating and insulation may be required. If heating is needed, exposure to high temperatures should be avoided. FORMULA 312 is not compatible with most greases. Formulated storage times (up to about 1 month), temperatures of up to 100°F (37.8°C) can be tolerated but the preferred maximum storage temperature is about 80°F (26.7°C).

A stainless steel centrifugal pump is suggested for transfer service. Spiral-wound stainless steel to TEFON® Polymer is suitable for gaskets and packing.

Handle in a well-ventilated area. If vapors are irritating to the nose or eyes, special ventilation or respiratory protection (MSHA/NIOSH approved air purifying respirator equipped with an organic vapor cartridge) may be required.

BEFORE HANDLING OR USING THIS PRODUCT, SEE YOUR EMPLOYER AND READ CURRENT MATERIAL SAFETY DATA SHEET

STORAGE AND DISPOSAL

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal.

Open dumping is prohibited. Pesticide wastes are toxic. 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 your 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 or pressure rinse (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or other procedures approved by state and local authorities.

DIRECTIONS FOR USE

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

AIR WASHERS AND INDUSTRIAL SCRUBBING SYSTEMS/RECIRCULATING COOLING AND PROCESS WATER SYSTEMS

This product may be used only in industrial air washers and air washer systems which have mist-eliminating components. FORMULA 312 should be added at the application rates described below to a water treatment system at a convenient point of uniform mixing such as the basin area. Addition may be made intermittently (SLUG DOSE) or continuously. Initial Dose: When the system is noticeably fouled, apply 12.7 to 25.4 fluid ounces of FORMULA 312 per 1,000 gallons of water in the system. Repeat until control is achieved.

INTERMITTENT (SLUG DOSE) METHOD

Badly fouled systems can be shock treated with FORMULA 312. Under these conditions, blowdowns should be discontinued for up to 24 hours. FORMULA 312 can be used in industrial process water systems that contain ultra filtration units and non-medical reverse osmosis membranes (where approved for compatibility by the membrane manufacturer) and associated distribution systems.

INTERMITTENT (SLUG DOSE) METHOD

Initial Dose: When the system is noticed to be fouled, apply 12.7 to 25.4 fluid ounces of FORMULA 312 per 1,000 gallons of water in the system. Repeat until control is achieved. Subsequent Dose: When microbial control is evident, add 5.1 to 12.7 fluid ounces of FORMULA 312 per 1,000 gallons of water in the system weekly, or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

NOTICE

Do not Ship or Store with Food, Feeds, Drugs, or Clothing.

SOLD BY: GARRATT-CALLAHAN COMPANY

PRODUCT NO. 0918110N

NETWORK WEIGHT 504 NET LBS. (55 GAL.)

EPA REG. NO. 464-692-8540

EPA EST. NO. 8540-CA-1

8540-TX-1

8540-MA-1

8540-IL-1

8540-NJ-1

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MADE IN USA
DIRECTIONS FOR USE - cont

CONTINUOUS FEED METHOD
Initial Dose: When the system is noticeably fouled, apply 12.7 to 25.4 fluid ounces of FORMULA 312 per 1,000 gallons of water in the system.

Subsequent Dose: Maintain this treatment level by starting a continuous feed of 2.5 to 12.7 fluid ounces of FORMULA 312 per 1,000 gallons of water in the system per day. Badly fouled systems must be cleaned before treatment is begun.

SERVICE WATER AND AUXILIARY SYSTEMS
FORMULA 312 should be used at the same application rates, and in the same manner as described above. It should be added to the system at a point that will allow for uniform mixing throughout the system.

HEAT TRANSFER SYSTEMS
(EVAPORATIVE CONDENSERS, DAIRY SWEETWATER SYSTEMS, HYDROSTATIC STERILIZERS AND RETORTS, AND PASTEURIZERS AND WARMERS)
FORMULA 312 should be used at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

INDUSTRIAL WASTEWATER SYSTEMS
(Wastewater Systems, Wastewater Sludge And Wastewater Holding Tanks) FORMULA 312 should be added as a wastewater stream or sludge at a convenient point of uniform mixing such as the digester. Add 0.45 to 2.2 gallons (500 to 2,500 ppm FORMULA 312) per 1,000 gallons of wastewater or sludge.

BEET SUGAR MILLS AND BEET SUGAR MILL PROCESS WATER SYSTEMS
FORMULA 312 should be added as a wastewater stream or sludge at a convenient point of uniform mixing such as the digester. Add 0.45 to 2.2 gallons (500 to 2,500 ppm FORMULA 312) per 1,000 gallons of wastewater or sludge.

CORROSIVE AND TOXIC SUBSIDIARY LABEL REQUIRED

WATER BASED CONVEYOR LUBRICANTS
(Brewery, Juice, Dairy, Beverage, and Food Processing Systems) Avoid contamination of food in application of product.
Thoroughly clean all tracks and conveyors to remove gross soil. Rinse well. Use an automatic feed system as recommended by your Garratt Callahan representative to provide 1.3 to 7.6 fluid ounces (50 to 300 ppm active) of FORMULA 312 per 100 gallons of diluted lubricant.

GENERAL PRESERVATIVE USE
FORMULA 312 is recommended for use in aqueous or water containing products and systems, including industrial, institutional and consumer in-can processes and products, to control the growth of bacteria and fungi. For effective preservation, add FORMULA 312 to the product formulation at a rate of 9.022% to 0.22% (222.5 to 2,222.5 ppm) based on water content of the product (0.22 to 2.2 lbs FORMULA 312 per 1,000 lbs water content). Mix uniformly.

PRESERVATIVE FOR CONCENTRATES
For use in concentrates where effective preservation is needed after dilution, add FORMULA 312 to the product formulation at a rate such that the diluted end-use product will contain 0.02% to 0.22% FORMULA 312. At no time during the preservation process should the level of FORMULA 312 exceed 2.2%.

REVERSE Osmosis MEMBRANES
Reverse osmosis membranes (where approved for compatibility by membrane manufacturer), immerse elements in a tank containing 0.2% to 2.2% FORMULA 312. FORMULA 312 can also be added to in-line recirculating systems for preservation of installed out-of-service reverse osmosis equipment (where approved for compatibility by membrane manufacturer). Add 0.22% to 2.2% FORMULA 312 to the tank in the circulating system. Maintain the concentration of FORMULA 312 by periodic addition to make up for losses.

HEAT TRANSFER SYSTEMS
For effective preservation of reverse osmosis elements (where approved for compatibility by membrane manufacturer), immerse elements in a tank containing 0.22% to 2.2% FORMULA 312. FORMULA 312 can also be added to in-line recirculating systems for preservation of installed out-of-service reverse osmosis equipment (where approved for compatibility by membrane manufacturer). Add 0.22% to 2.2% FORMULA 312 to the tank in the circulating system. Maintain the concentration of FORMULA 312 by periodic addition to counteract any system leakage.

HYDROTESTING
Water used to hydrotest pipelines or vessels should contain 110 to 4,444 ppm FORMULA 312 (Wastewater Systems, Wastewater Sludge And Wastewater Holding Tanks) FORMULA 312. It should be added to the system at a point of uniform mixing such as the diffuser, transport water pump, weir box, or diffuser feed water pump. Additions may be made intermittently (SLUG DOSE) or continuously.

INTERMITTENT (SLUG DOSE) METHOD
Initial Dose: When the system is noticeably contaminated, add 6.1 to 15.2 fluid ounces (222 to 560 ppm product) of FORMULA 312 per ton or 200 to 500 mL of FORMULA 312 per metric ton of sliced beets as a slug dose. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.9 to 9.1 fluid ounces (33 to 330 ppm) of FORMULA 312 per ton or 30 to 300 mL of FORMULA 312 per metric ton of beets sliced per minute in the system, or as necessary to maintain control. The total should not exceed 118 gallons per 1,000 tons of beets sliced per day.

PAPER MILLS AND PAPER MILL PROCESS WATER SYSTEMS
FORMULA 312 should be added to the paper making system at a point of uniform mixing such as the beaters, broke chest pump, save-all tank, or white-water tank.

Initial Dose: When the system is noticeably contaminated, add 0.6 to 3.3 lbs of FORMULA 312 per ton of pulp or paper (dry basis) as a slug dose. Repeat until control is achieved. Heavily fouled systems should be boiled out prior to initial treatment.

Subsequent Dose: When microbial control is evident, add 0.3 to 2.2 lbs of FORMULA 312 per ton of pulp or paper (dry basis) as a slug dose as necessary to maintain control.

PIGMENTS AND FILLER SLURRIES FOR PAPER AND PAPERBOARD
For use in food and non-food contact pigments and filler slurries
Use from 0.11 to 0.7 lbs of FORMULA 312 per 1,000 lbs. of dry powder to produce a concentration from 111 to 667 ppm as product (based on slurry solids) in the mixed slurry.

WATER BASED COATINGS FOR PAPER AND PAPERBOARD
Note: For use in non-food contact coatings only.
Use from 0.11 to 0.7 lbs. of FORMULA 312 per 1,000 lbs. of dry powder to produce a concentration from 111 to 667 ppm as product (based on slurry solids) in the mixed slurry.

AQUEOUS METALWORKING FLUIDS
FORMULA 312 should be added to a metalworking fluid system at a point of uniform mixing such as the fluid collection tank. Additions may be made intermittently (SLUG DOSE) at intervals of one week or less.

Initial Dose: When the system is noticeably fouled apply 2 to 6 gallons of FORMULA 312 per 10,000 gallons of metalworking fluid to the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.8 to 4 gallons of FORMULA 312 per 10,000 gallons of metalworking fluid to the system weekly, or as needed to maintain control. Badly fouled systems should be cleaned before treatment is begun.

For effective preservation of concrete admixtures, add FORMULA 312 to the product formulation at a rate of 2.22 to 8.889 ppm based on the weight of the admixture (2.2 to 8.9 lbs FORMULA 312 per 1,000 lbs. concrete admixture). Mix uniformly.

LIMITED WARRANTY AND DISCLAIMER
Sellers warrants that the product conforms to its chemical description as contained on this label and is reasonably fit for the purposes stated on this label when used in accordance with directions under normal conditions of use.

The WARRANTIES MADE IN THIS PARAGRAPH ARE SELLER’S SOLE WARRANTIES WITH RESPECT TO THE PRODUCT AND ARE MADE EXPRESSLY IN LIEU OF AND EXCLUDE ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER EXPRESS OR IMPLIED REPRESENTATIONS AND WARRANTIES.

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