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### GENERAL DESCRIPTION

Organic Polymers are used in a wide variety of municipal and industrial applications. Organic Coagulants are used to enhance the coagulation, flocculation and removal of impurities in water, many of which require NSF certification for use in potable water systems.

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### USE AND BENEFITS IN WATER TREATMENT

Water soluble polymers, polyquaternary amines, polydads, etc. are supplied in easy to use solution forms. They are highly efficient contributors of cationic charge and molecular weight when applied in specific applications.

The process of coagulation is made highly efficient by the proper application of chemistry and dosage.

Organic Coagulants are used most efficiently in combination with inorganic coagulants such as polyaluminum chloride and other aluminum and iron salts. Depending on the specific chemistry of the target water, polymer use can vary from as little as 5% of the total coagulant dosage (inorganic+organic) to as much as 100% in cases where total organic use is indicated.

#### General Benefits are:

- Broad pH and Alkalinity performance window
- Comparative low use volumes, ordering, storage, etc.
- Minimize sludge volumes
- Reduce overall treatment costs
- Denser floc structure for improved sedimentation rates
- Floc structure lends to easier and less costly sludge dewatering
- Settled and finished water turbidity reduction
- Reduce suspended solids and filter loading
- Longer filter life
- Reduce total soluble metal addition

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### LABORATORY USE

Stock solutions of 1% by weight: weigh 1 gram of polymer in a dry screw-topped bottle, add 99 mls of good quality water and shake vigorously for 20-30 seconds. One milliliter of this solution added to a one-liter test water sample yields a dosage of 10 milligrams per liter. A further dilution down to 0.1% of stock solution (10 milliliters of 1% stock solution+90 milliliters of water) will allow lower dosage aliquots where 1 ml=1mg/l. Fresh stock solution should be prepared for each testing session, minimum once/day.

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### PLANT SOLUTION PREPARATION

Most Organic Coagulants can be fed either neat or diluted as best suited for the specific application and plant. Dilution can be easily achieved by using an in-line static mixer or simple tank and mixer apparatus. Solution concentrations of 1% to 10% are typically recommended. Solution holding times of less than 24 hours should be observed, however depending on make-up water quality.

Application points for the products are optimized where good mixing is achieved. The general rule-of-thumb is to feed organic polymers as far back in the system as possible. If dilution water is used it should be of the highest quality available.

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### PRODUCT SELECTION AND TECHNICAL SERVICE

Gulbrandsen's technical representatives are highly qualified and experienced in optimizing water treatment applications. A call to Gulbrandsen will serve to secure the technical expertise required to select the most technically efficient and cost effective treatment program for your water treatment application.

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## MATERIALS OF CONSTRUCTION

We recommend cross-linked polyethylene, fiberglass, stainless steel or lined mild steel as the preferred materials of construction for storage systems for Organic Coagulants. Unlined mild steel, black iron, galvanized steel, copper or brass should not be used in any part of the feed and delivery system if possible. Stainless steel or PVC are recommended materials for pump heads and feed lines.

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## HANDLING AND STORAGE

Although complete freeze-thaw characteristics are typical of Organic Coagulants, freezing or excessively high temperature conditions should be avoided. Spills are a slip hazard and should be quickly absorbed with sawdust, vermiculite or equal and properly disposed of immediately. All proper personal safety procedures should be followed while handling this and all chemicals.

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## HEALTH & SAFETY

Organic Coagulants typically exhibit a low order of toxicity and therefore require no special handling precautions. Detailed information on the handling of any specific product can be found in our Material Safety Data Sheets, available upon request.

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## SHIPPING AND PACKAGING

Organic coagulants are available from all Gulbrandsen manufacturing sites in Phillipsburg, NJ, Orangeburg, SC, and LaPorte, TX. Packaging is available out of all locations as follows:

- **Bulk:** 500-4,000 gallons quantities
- **Tote:** 275 or 330 gallon non-returnable totes
- **Drums:** 55 gallon, plastic, non-returnable drums

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## ADDITIONAL INFORMATION

Please contact Gulbrandsen Technologies Corporate Service Center at 908.735.5458 or 800.255.7759.

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