

innovative turf solutions

5132 Ballantrae Court, Cincinnati, OH 45238
Cell: 513-317-8311 Fax: 513-672-9633
www.innovativeturfsolutions.com

Floccin™

Coagulant/Flocculating Agent

Precaution:

Avoid prolonged or repeated breathing of dust. Dust contains low concentrations of crystalline silica. Wear Niosh/Msha breathing apparatus.

Application Rates:

4lbs./1,000 gallons or a dosage rate at 30 gpm (1,800 gph flow capacity). Application rates will vary depending on turbidity and flow rate. Product can be hand applied or applied through a hand spreader directly onto/into BMPs.

First Aid Measures:

Wash off exposed skin. Remove affected personnel from dusty area to area with clean air.

Caution:

This product contains free crystalline silica, which according to the IARC has exhibited limited evidence of carcinogenicity in humans. Avoid creating dusty conditions and use a NIOSH approved breathing apparatus.

Net 50 lbs.

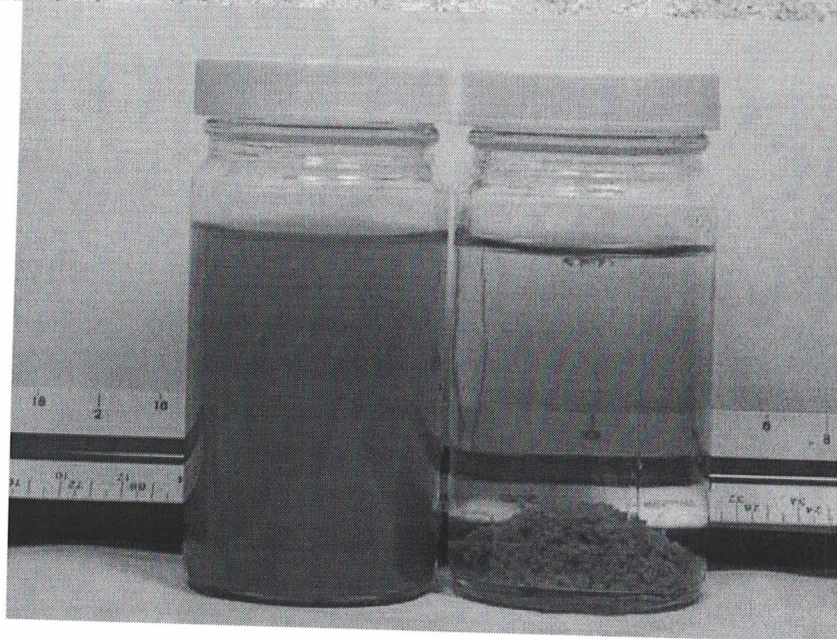
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The facility discharges to a marine sanctuary that has very strict discharge requirements. The facility is looking at an effective solution to reduce the effluent water turbidity. The discharge is at a rate of 30 gpm and is often out of compliance with solids in the water reported in the form of turbidity.

Treatability:

The samples were tested using the Floccin J. The initial pH was 7.0 and the treated water was at a pH of 7.0. The sample required 0.45 grams/1,000 ml to form a good floc. This equates to 4 lbs/1,000 gallons treated or a dosage rate at 30 gpm of 7.2 lbs/hour (1,800 gph flow). The untreated and treated water results are shown below:



Constituent	Untreated	Treated
Biochemical Oxygen Demand (BOD)	ND	ND
Chemical Oxygen Demand (COD)	16	21
Total Organic Carbon (TOC)	3.2	4.9
Total Suspended Solids (TSS)	120	ND

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Floccin™

Flocculation using our Floccin™ Flocculating Agent results in:

- Reduced Quantity of Chemicals
- Increased Settling Rates
- Increased Hydraulic Capacity
- Increased Flocculent (Floc) Size
- Improved Flocculent (Floc) Shear and Mixing
- Heavy Metals Removal and Recovery
- Sludge Leachability Tests with reduced Environmental Liability
- Enhanced BOD/TSS Removal
- Reduced Impact on TDS/EC
- Meets US EPA TCLP (Toxic Characteristic Leaching Procedure) testing
- Works Over Broader pH Ranges (4 to 12)
- Reduced Costs

Flocculation or **floculation**, is the process of adding a flocculant, coagulant or other catalyst to dirty water or wastewater. The flocculant then binds with the contaminants to form flocculent or floc. This process is a critical part of virtually all discharge sites or wastewater treatment. Separating solids from liquid is the primary basis of the treatment.

Flocculation is a clumping together of substances or **encapsulation of substances** that form **flocculent**.

Innovative Turf Solutions' flocculants are based on natural products to bind to contaminants in your discharge site or wastewater. This causes the contaminants to not only floc up but also become encapsulated in the flocculant.

Floccin™ is designed to break emulsified oils as well as encapsulate the heavy metals or entrained oil in a strong floc.

The Floccin™ products are formulated from chemicals that are either NSF 60 approved for drinking water application, FDA approved for direct human contact, or meeting the GRAS status as defined by the FDA.

Additional benefits to you are that the Floccin™ products operate over a wide pH range, generate a high shear strength floc, require no additional chemistry to dewater, **simplify the operations by using just 1 product**, and **reduce operating costs**.

Floccin™ products coagulate, break emulsified oils in water, change the pH, encapsulate the metals, and flocculate to separate the solids from the discharge site or waste stream resulting in the ultimate flocculation.

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Directions For Use

Floccin™ is designed for placement by sprinkling the Floccin™ granular product as needed (before or after rain events) on wattles, rock check dams, jute/coconut coirs, ditches, ponds and streams.

Note: Actual GPM or dosage will vary based on site criteria and soil/water testing.