

SOIL EROSION POLYMERS

JRM Chemical offers a full line of quality and diverse linear anionic polymers for the professional in the erosion industry. The products vary in molecular weight, charge density and form to perform in all types of soil/site conditions and applications in the erosion industry. Applications include but are not limited to: Construction and Building Sites, Hydroseeding, Highway Construction, Mine Tailings, Refuse Sites, Reforestation and Revegetation. All products comply and are certified with NSF International ANSI/NSF 60, drinking water. All products do not bioaccumulate.

The linear compound polymers help maintain soil structure and reduce soil erosion. The anionic or negative charge linear polyacrylamide/acrylic acid polymers are designed to flocculate discharge water. The sodium breaks from the polymer chain (disassociates) once introduced to water and become a negative charge. The negative charged polymer will form a bridge with positive charged parts (divalent cation) of the suspended soils in the water and make larger soil aggregates. Larger soil aggregates will settle to the bottom of the discharge water. The anionic polymer bonds soil particles along the discharge water channels and maintains soil erosion. When used in hydroseeding or as an over spray, the anionic polymer binds the hydroseeding media to the soil particles. For complete information on hydroseeding applications, refer to form 700/701.

BENEFITS AND FEATURES

- Reduces soil erosion
- Removes soil and clay particles from discharge water.
- Eliminates colloidal solutions in discharge water when applied directly to the discharge ditch
- Improves soil by increasing soil porosity and water infiltration
- Reduces fertilizer and pesticide loss
- Improves site conditions and compliance with regulatory requirements.

Pam Tablets are designed to reduce soil erosion, remove soluble particles and reduce NTU values in water channel applications.

The tablets are ideal on sites where electricity and machinery are not available for metering, pumping or dispensing devices. The

tablet can be used on all water applications where there is turbid water. One important and distinct advantage of the tablets over large blocks/bricks and logs of polymer is their ability to release polymer in all water velocity flow rates, in particular low flow rates of turbid water. The surface area of the tablets is significantly higher than blocks and logs. The tablets release the polymer and do not "gel block" and become ineffective as larger sized blocks and polymer logs can do.

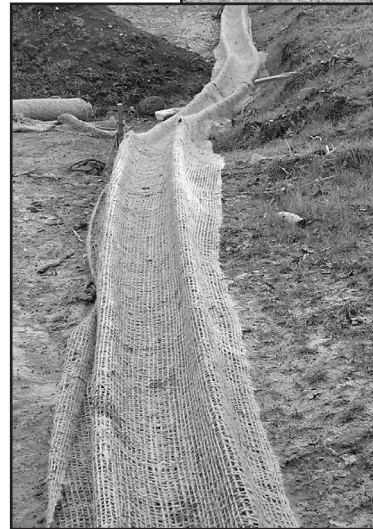
Application: Prior to any application, perform a standard jar test to test the effectiveness of the product for the specific site. There are many environmental and soil variables that effect the performance of the products. Place 20 up to 40 tablets in the supplied nylon mesh bags. Use the higher range of tablets in the higher water flow applications. Tie a not in the mesh bag 5-6 inches above the tablets. The extra space give the tablets more surface area to treat the turbid water. Note: In high water flow applications (> 100 gpm) tie the knot in the nylon mesh bag as close as possible to the tablets. Stake and secure the nylon mesh bag as close to the source of the water flow and turbidity as possible. Place the mesh bag as close to the center of the water flow. In earthen channels and applications of high turbidity, additional mesh bags should be evenly spaced (15 to 25 feet) in the first 20% of the channel. To increase the effectiveness and performance of the tablets, place a nylon mesh bags directly below drop inlets, rock checks and other obstacles in a channel that causes water turbulence. Periodically check site and replace sacks as needed.



Powders: Three powders commonly used in turbid water applications are the FI series of linear anionic polymers, FI-1000, FI-1045 and FI-1046. Each anionic polymer has a unique charge density, UL viscosity and molecular weight to treat various types of turbid water and site conditions. Another influential factor that effects the performance of linear polymers in the field is the content of cation in soil. The FI-1000 series is better suited for sandy soils in turbid water while the FI-1045 and FI-1046 products are more suited for higher density soils and clays. Always perform a standard jar test to insure the effectiveness of the product with site conditions. For hydroseeding and temporary dust control applications, refer to form 700/701.

These products are packed in plastic pails and are resistant to weather conditions in the field. They are supplied with a built in spout for ease of application.

Application: The powders can be used either alone or in conjunction with the erosion tablets. In earthen water channels that will be used on an extended basis, if possible, line with 2-3 layers of jute. The jute mesh acts as a filter and increases the residual effect of the linear anionic polymer. Apply 5 up to 20 pounds (use the higher rate with highly turbid water) along the first 20% of the source of turbidity and flow of water. This initial treatment is used to "shock" the turbid water. The polymer should be reapplied after a few heavy discharges caused from mechanical or natural (rainfall) occurrences.



When water is being pumped from the site to holding ponds prior to final discharge, a "split pipe system" is widely used. Any diameter of plastic drain pipe is cut lengthwise in half. The pipes are then bolted together and patched with common roofing cement to keep water tight. Line the pipe with two to three layers of jute. Align the split pipe from the water pump to the holding ponds. Slowly pour 5 to 20 pounds of polymer from the water pump down the first 20% of the split pipe.

Periodically check the water turbidity of the treated water and reapply as needed. Small concentration rates of polymer from .5 ppm to 3.5 ppm can greatly reduce the NTU values in water. In closed drain applications, product should be applied directly after the drop inlets or storm drains.

TABLET CHARACTERISTICS

Chemical:	Anionic linear copolymer of acrylamide
Appearance:	Solid White
Molecular Wt.:	12-15mg/mole
pH:	5.5 - 8.0
Shelf life:	1 year
Storage temperature:	32F-95F (0-35 C)
Acute Toxicity:	
Algae:	IC50/ Scenedesmus subspicatus / 72 h > 500 mg/L
Fish:	LC50/ Pimephales Promelas / 96 h > 450 mg/L
Daphnids:	LC50/ Daphnia magna 48h > 500 mg/L

POWDER CHARACTERISTICS

Anionic linear copolymer of acrylamide
Solid white
Range from 6.5 to 18 mg/mole
5.5 - 8.0
1 year
32F-95F (0-35 C)
IC50/ Scenedesmus subspicatus / 72 h > 500 mg/L
LC50/ Pimephales Promelas / 96 h > 4000 mg/L
LC50/ Daphnia magna / 48h > 5000mg/L

LC50 endpoints were determined by the Trimmed Spearman-Karber method of analysis using CT-Tox 1.1

JRM Chemical, Inc.

4881 NEO Parkway, Cleveland, Ohio 44128
 (216) 475-8488 • Toll Free: 800-962-4010
 Fax: 216-475-6517

E-mail: jrm@en.com • Web: www.soilmoist.com

Data on application rates is provided for information purposes only. Application rates will vary according to soil conditions, soil type, slope, condition or water, flow rate and temperature of water. Information is supplied as a guideline only; it does not constitute any specification. Liability is not assumed nor any freedom from any existing patent.

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