Polyacrylamide for Irrigation
SNF is the world’s leading manufacturer of water-soluble polymers, including polyacrylamide-based flocculants. SNF is well-positioned to supply quality products to the Turf and Production Agriculture markets through authorized distributors. That partnership is effective in providing the latest technology and products that provide value to our customers and end-users.

POLYACRYLAMIDE (PAM) USE IN IRRIGATION

PAM is a chemical flocculant (polymer) widely used in municipal drinking water and wastewater treatment, paper manufacturing, mining, and food processing. When applied to soil during irrigation, PAM acts as a soil conditioner by binding to clay and other fine particles. This flocculation results in larger, heavier particles that are harder to dislodge. This increased cohesiveness of particles on the surface makes soil more resistant to erosion caused by flowing water. The addition of PAM also creates a more consistent and porous soil profile, thus allowing increased infiltration and utilization of the applied water and nutrients down to the root zone.
APPLYING PAM

PAM is an effective and proven irrigation aid. It is not a wetting agent, soil surfactant, or a soil penetrant. During irrigation, loosened soil creates the greatest soil losses. Therefore, PAM should be applied during the first irrigation if the soil has been disturbed by cultivation or is loose due to lack of rain.

Regardless of the physical form of PAM used, sufficient mixing is required to dissolve the polymer in water and for it to become properly activated and hydrated when used in irrigation systems. PAM applied with irrigation water brings about higher infiltration rates than does untreated water alone. It is recommended that irrigation practices be adjusted accordingly to prevent overwatering, especially on soil that already has high infiltration rates naturally.

PAM is not harmful to the environment. It degrades safely into harmless organic molecules within weeks following its application. Because PAM limits soil erosion, its use can prevent non-point source pollutants, including soil, nutrients, and pesticides from leaving the field.

PAM based products are available in several formulation types, with the two most common physical forms being dry granular and liquid emulsions. SNF provides versions of these products certified for drinking water treatment (NSF/ANSI Standard 60), as well as consistent with the USDA Conservation Practice Standard Code 450 for improving overall irrigation efficiency.
The use of PAM in Turf irrigation applications is compatible with all irrigation methods and can provide numerous benefits:

- Reduced water costs
- Reduced energy costs
- Improved overall turf quality
- Increased playable surfaces (golf courses and recreational areas)
- Increased efficacy of fertility and chemical programs
- Decreased direct irrigation labor costs
- Reduced runoff from irrigation and rain events
- Reduced localized dry spots and wet zones
- Use of a non-toxic soil conditioner
PRODUCTION AGRICULTURE APPLICATION AREAS

Flood and furrow irrigation systems, common to production agriculture, have benefitted from utilizing PAM for the past 25 years. Since irrigation water efficiency is a primary concern for crop growers across the globe, PAM usage has been proven to provide many valuable environmental and cost-effective advantages:

- Improved pre- and post-irrigation water quality
- Reduced soil runoff by 94% in furrow irrigation and 75% in sprinkler irrigation
- Increased soil stabilization of nutrients and chemicals
- Enhanced lateral movement of water in the root zone by 25%
- Improved field infiltration uniformity
- Reduced levels of contaminants in runoff
- Reduced crop stress
APPLICATION METHODS

Although benefits of using PAM in turf and crop irrigation applications have been well established, its use in actual practice has been limited. Application and handling of PAM were the primary reasons. As a result, SNF provides various equipment solutions to meet the special demands and needs of our customers’ applications. One example is the Poly Dolly™ Polymer Injection Unit. The Poly Dolly produces a rapid and consistent solution of liquid PAM that can be injected into micro-jet, center-pivot, drip, and high-pressure irrigation systems - without nozzle blockage.

The Poly Dolly™ Polymer Injection Unit is:

- Lightweight and portable
- Reliable and cost-effective
- Capable of creating PAM solutions from 0.1 - 1.0%, at a max. injection rate of 12 gpm
- Ruggedly constructed of stainless steel
- Equipped to operate with conventional 110, 220, or 460 VAC power
- Easy to calibrate and operate
Please contact SNF Agriculture today to learn more about PAM usage in irrigation and turf applications.

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