



KEY ASPECTS OF PAM USE & SAFETY

The **US Department of Agriculture's Agricultural Research Service's (USDA-ARS)** Northwest Irrigation and Soils Research Laboratory located in Kimberly, Idaho has been the leading world research center and proponent for the use of small amounts of anionic polyacrylamide (PAM) in irrigation water to reduce irrigation-induced erosion. Their research dates from 1991 and has been complemented by studies in several other western states, including California.

- "Polyacrylamide treatment of irrigation water may be the fastest growing conservation technology in irrigated agriculture. PAMs were registered in most western states by late 1994 and the **Natural Resources Conservation Service (NRCS)** published an interim Conservation Practice Standard for PAM use in January 1995." The final standard was published in July 2000. **California's NRCS Standard for Furrow Irrigation** was published in July 2002.

Source: A PAM Primer – A Brief History of PAM and PAM-Related Issues, March 1997

- "One concern often voiced regarding PAM use is whether environmental or health threats exist from residual acrylamide monomer (a toxin) left behind from a product synthesis, or as a result of PAM degradation. **Products labeled for sale in the USA as erosion polymers are formulated to the same EPA and FDA standards as those used in potable water treatment and food processing and packaging uses.**

They are large anionic PAM copolymers that are **both environmentally safe and among the most efficacious formulations for this use.**" (Lentz et al, 1993)

"PAM does **not** decompose to release free monomer." (Barvenik, 1994)

"No negative impacts have been documented on soil microflora from fields with several years of exposure to polyacrylamide for erosion control." (Watwood and Kay Shoemaker, 1996)

Source: "Reducing Furrow Irrigation Erosion with Polyacrylamide" (PAM), **USDA-ARS Northwest Irrigation and Soils Research Laboratory**, April 1996

- "PAM is an environmentally safe industrial flocculant widely used in municipal water treatment, paper manufacturing, food processing and other sensitive applications." (including as food additives and in dental devices)

Source: **USDA-ARS**, March 1997

- The **Code of Federal Regulations**, Section 21 from **FDA** defines criteria for use of polyacrylamide as a direct food and secondary food additive.
- "Be aware that although all PAMs are polymers, **NOT ALL POLYMERS ARE PAMs.**"



- “An environmentally friendly compound (PAM) nabs nutrients and troublesome microbes before they can escape from farmers’ fields and make their way to ponds, lakes, streams or rivers.”

“Findings from **ARS** scientists from the **Northwest Irrigation and Soils Research Laboratory** in Kimberly, Idaho and outdoor experiments have prompted US growers to put PAM to work on more than **1 million acres of irrigated farmland.**”

Source: “PAM Protects Against Pollutants and Pathogens”, Agricultural Research Magazine, July 2002

- “One ounce of PAM anchors as much as 1000 pounds of topsoil that might otherwise be carried away by irrigation water.” (Rodrick D. Lentz, **ARS** Soil Scientist)
- “PAM helps growers avoid exceeding **Total Maximum Daily Loads (TMDLs)** for sediments and nutrients.”

Source: Agricultural Research Magazine, July 2002

- PAM is environmentally safe. It will naturally degrade with UV light and is biodegradable. A variety of PAM products have been approved by NSF International for potable water clarification. They have also been approved by the FDA under several 21CFR regulations that allow their use as both direct and indirect food additives. They are registered by thirty-seven individual state Departments of Agriculture.
- The **Department of Food and Agriculture for the State of California**, through its Agricultural Commodities and Regulatory Branch, promotes the distribution of agricultural chemicals that are effective and safe. Their role is to assure the consumer that they are properly identified, and indicate on packaging the validity of quality and quantity.

PAMs are regulated as “auxiliary soil and plant substances.”

- The **Department of Transportation for the State of California (CALTRANS)** has approved the use of several of Hydrosorb, inc.’s products, including Soilfloc 100D for “temporary erosion control”, Soilfloc Dry**Tack** for “temporary hydraulic mulch”, and Soilfloc Liqua**Tack** for erosion control. “The material is to be installed by contractors on projects per the manufacturer’s recommendations and per a project-approved Stormwater Pollution Prevention Plan.” This approval followed an extensive examination by the Product Safety Committee and Office of Landscape Architecture.