

TRAMFLOC, INC.

6046 FM 2920 Road, #615, Spring, TX 77379 Voice: 888-929-8973 Fax: 480-383-6895

Technical Information Bulletin TRAMFLOC® 910 PRECIPITANT

Product Uses

Tramfloc® 910 is a sulfur-based solution designed for use in treatment systems as a metal precipitating agent. Tramfloc® 910 effectively stabilizes and reduces soluble toxic metals such as Cr, Pb, As, Cd, Cu, and other metals which could be a major health risk. Geochemical fixation using a chemical such as Tramfloc® 910 converts soluble toxic metals into insoluble nontoxic compounds. The extent of metals' precipitation is a function of the pH environment. Metal hydroxides change solubility with pH changes. Metal sulfides remain insoluble within a pH range of ~5-9. Tramfloc® 910 with a pH of 10.5-11.5 typically forms sulfides with most metals and, in the case of Cr, hydroxides. Tramfloc® 910 is particularly effective in soil washing applications.

Treatment Notes for Specific Metals

Adjustment of the pH of the treatable substrate can enhance the metals' precipitation process. **Arsenic:** Acid medium only forms various arsenic sulfides; pH > 7.0; Arsenic-Sulfur compounds are soluble; pH < 7.0; Arsenic-Sulfur compounds are soluble; **Lead:** in a pH range of 4-9, lead sulfide is formed; **Copper:** in a pH range of 5-7, copper sulfide is formed; **Zinc:** in a pH range of 4-9, zinc sulfide is formed; **Cadmium:** in a pH range of 4-9, cadmium sulfide is formed; **Molybdenum:** in a pH range of 4-9, molybdenum sulfide is formed; **Uranium:** in a pH range of 4-9, uranium sulfide is formed; **Cyanide:** Chemical conversion produces thiocyanate. It can be bio-treated or it can be treated with lime to produce calcite, gypsum and ammonia. Chromium (Cr⁺⁶) can be treated with Tramfloc® 910 to reduce the metal to Cr⁺³ which is then precipitated as chromium hydroxide.

Typical Properties

Tramfloc® 910 is a 29% active sulfide solution. It forms a filterable sludge and operates well in areas where the pH of the system is > 7.0. Excess calcium precipitates as CaCO₃ or CaSO₄. Tramfloc® 910 is easy to apply and handle in comparison to solid material which must first be dissolved prior to application.

Active Solids.....29%; Specific Gravity.....~1.27; Color.....Ruby Red; Approximate weight/gal.....10.6#; pH, neat.....10.5-11.5; pH, 300 ppm in DI water.....9.88@24⁰ C with water pH of 7.05; pH, 300 ppm in tap water.....9.18@24⁰ C with water pH of 7.55

Packaging and Handling

Tramfloc® 910 is a water soluble liquid packaged in non returnable 55 gallon drums, 275 gallon IBC's, and in bulk tank trucks and rail cars. Store containers out of direct sunlight at moderate temperatures. Suitable materials of construction for storing and handling the solution at temperatures up to 120⁰F include stainless steel, polyethylene and polypropylene. Precautions should be taken to prevent inhalation, ingestion or contact with skin or eyes. Observing basic industrial hygiene precautions should prevent any health or safety hazards. Do not breathe product vapors. Dilute only in closed containers. Avoid contact with acids or acidic materials. Use in a well-ventilated area. Observe all safety precautions on label and on the Tramfloc® 910 MSDS.

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