

TRAMFLOC, INC.

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Technical Information Bulletin for Product Application

Tramfloc® 910 METAL PRECIPITANT

Features

Tramfloc® 910 is a calcium polysulfide liquid consisting of multiple sulfur compounds that strongly bond to heavy metals in water. The metal sulfides formed have an extremely low solubility (see chart) and persist as stable solids, which allows for a more environmentally sound disposal as the metals will not leach out. The product is effective even when treating chelated and/or complexed metals without employing other pretreatment options. Hexavalent chromium (Cr VI) is easily removed and does not need to be reduced to trivalent levels prior to precipitation. Electrolyse nickel and other metals in plating wastewater are effectively treated with Tramfloc® 910.

Application

Tramfloc® 910 is used in applications where metals need to be removed to meet discharge levels. The product can either be poured directly into a batch treatment system or fed with a chemical metering pump. Mixing is required to provide contact time and 1-2 minutes is usually sufficient. The metal precipitate can be removed by filtration or by allowing the solids to settle and decanting the liquid. Although the product will perform within a wide pH range, best results are obtained when the pH of the wastewater is maintained between 7 and 10. The optimal way to ensure the metals removed meet discharge standards is to calibrate the wastewater system with an ORP controller.

Dosage

Generally 120% of the total metals is required to remove all of the metals of concern. Since dosage rates are affected by a number of parameters, it is highly recommended that jar tests be performed to identify the optimum dosage for metals removal based on your specific water chemistry.

Physical Properties

Tramfloc® 910 is an aqueous calcium polysulfide solution with a typical pH of 11.5. It has a specific gravity of 1.27 and weighs 10.6 pounds per gallon. The solution is ruby red in color and may have a slight odor of rotten eggs.

Storage and Handling

Tramfloc® 910 is readily available in 55-gallon drums, 265-gallon totes, and in tank truck quantities. Product is not DOT regulated. Compatible materials of construction for storing and handling Tramfloc® 910 at ambient temperature (up to 120° F) include stainless steel, fiber glass, polypropylene, polyethylene. Store containers out of direct sunlight. Avoid contact with acids or acidic materials, to prevent H₂S evolution. Handle Tramfloc® 910 in enclosed containers to avoid breathing product vapors. Avoid contact with skin and eyes. Use in a well-ventilated area. Wash thoroughly after handling. Please refer to the Safety Data Sheet for the most current safety and handling information.

Precipitation Activity

The extent and rate of metal precipitation is generally a function of the pH of the system. Metal hydroxides change solubility with changes in pH. Tramfloc® 910 precipitates dissolved metals as metal sulfides, which exhibit lower solubility than the corresponding metal hydroxides, achieving a more complete precipitation and providing a better stability over a broader pH range. When it comes to the removal of heavy metals from process waste streams, Tramfloc® 910 has proven to be a strong and cost effective precipitant.

Product Advantages

- Removes chromates and dichromates without preliminary reduction of the chromium to its trivalent state.

- Can break and precipitate highly chelated and/or complexed heavy metals without pretreatment.
- High reactivity with heavy metal ions and very low solubility of resulting metal sulfides over a wide pH range.
- Better settling and dewatering aspects of the metal precipitate resulting in a more compact, easy filterable sludge.
- Dissolved calcium ions form a coagulant aid.
- Does not contain dithiocarbamate or its related salts.
- It is not DOT regulated.
- No need to dissolve prior to use as compared to solid material.
- It has a low crystallization temperature and a shelf-life of minimum 1 year.

For additional information samples or assistance please contact water@tramfloc.com.