



Tiarco Chemical Europe GmbH



TRCC Europe GmbH

# Technical Data Sheet

## Octopol STC-25

Polythiocarbonate

Octopol STC-25 is a clear, red/orange aqueous solution with the following properties:

Product Specifications		Methods
Density	1.040 – 1.060	WI-WGC-320
pH	12.0 - 12.5	WI-PHC-010

### PRODUCT DESCRIPTION:

Octopol STC-25 is used as a precipitant for removing heavy metals from process waste-waters, Octopol STC-25 reacts with metallic ions to form organo-metallic precipitates (thiocarbonates/sulfides) of extreme low solubility. The result is the near total removal of metals from waste streams - even in the presence of complexing/ chelating agents. Octopol STC-25 can be used over a wide pH range; that is, it is not pH dependent. The material will simultaneously precipitate ALL metals in solution and produce a stabilized by-product (sludge). STC-25 can also be used as a "polishing" agent, after pH adjustment, to precipitate the remaining ionic metals (chelated or complexed) which will not precipitate as hydroxides during pH adjustment. The particles formed by the Octopol STC-25 reaction are very dense and may require coagulation to assist in their removal from solution. The high density of STC-25 precipitate generates less sludge when compared to metallic hydroxide or carbamate sludges. The STC-25 by-product is also extremely stable and meets TCLP stabilization requirements. Octopol STC-25 as a detoxification/stabilization reagent, upon contact with metals in contaminated soils, sludges, ash and sediment, reduces multiple valence metals to their lowest valence state, and renders all metals insoluble as stable, nontoxic, organo-metallic complexes. They will not leach under either acidic (TCLP) or alkaline conditions. These compounds are not hazardous nor toxic and, in fact, are similar to their common metallic forms in nature, which maintain and increase their stability over time. It is effective for both in-situ and ex-situ applications.

### Octopol STC-25 recommended usage:

To determine the approximate dosage of Octopol STC-25, use the following formula:

$$\text{mls STC-25} = (\text{total ppm metal}) \times (\text{no. of gallons}) \times (Y)$$

The factor (Y) in the above formula is determined by the atomic weight of heavy metals. In a wastewater stream containing several mixed metals, the average atomic weight of the metals is used to arrive at the number 0.0401. When calculating dosages for individual metals, (Y) is as follows:

Metal (Y)	Factor
Lead	0.0196
Cadmium	0.0362
Zinc	0.0622
Copper	0.0641
Nickel	0.0693
Mixed Metals	0.0401

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When STC-25 is used as a polishing agent, consider only those metals remaining in solution after hydroxide precipitation (via pH adjustment) for calculating the dosage per the above formula. Bench scale jar testing should be performed to determine the optimum dosage, preferably monitored by an ORP electrode. To optimize the dosage of STC-25 required, oxidizers present in solution must be destroyed (oxidized) prior to dosing. The type and concentration of chelators, coagulants, and other components of the wastewater may also affect the dosing criteria. In a full scale installation, dosing of STC-25 is most efficiently accomplished with an automatic control system which includes an ORP electrode, millivolt controller and metering pump.

All of the ingredients used in the manufacture of Octopol STC-25 are listed on the US, TSCA.

## Storage and Handling:

Octopol STC-25 is a water solution with an alkaline pH. For this reason, it should not be used in acid systems, where decomposition may occur. Storage at temperatures below 5°C or above 33°C should also be avoided. Material should be transferred, shipped and/or stored in 304 stainless steel or better, fiberglass, or plastic. Read the MSDS before using.

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