

AquaT™ Metal Drop

AquaT™ Metal Drop is a safe, buffered, multi-sulfur bearing reducing agent and precipitant that deflates costs. It improves control associated with the treatment of metal bearing waste.

Features/Benefits

- Minimizes the dependence on hydroxide precipitation for improved removal of amphoteric metals.
- Reduces overall cost due to reduction in caustic and acid usage.
- Improves settling with a dense particle that settles faster.
- Generates less solid waste with improved de-watering. When required, the solid waste will pass TCLP testing for de-listing of the solid waste.
- Generates fewer salts during treatment so scale in the system is dissolved and there is potential for water re-use.
- Increases flow in a Micro-Filtration unit with a charged particle that sloughs off the filter.

Operating Conditions

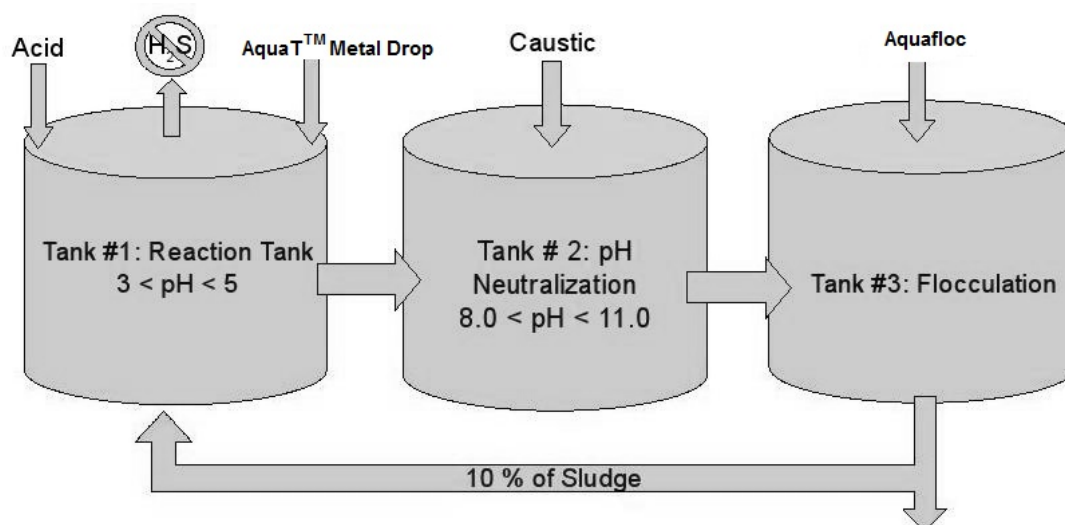
AquaT™ Metal Drop	Additions triggered by ORP set-point
Reaction Tank	3.0 to 7.0
Neutralization Tank	8.0 to 11.0

Recommended Starting Point for AquaT™ Metal Drop addition in the Reaction Tank:

ORP	150 mV
pH	4.0

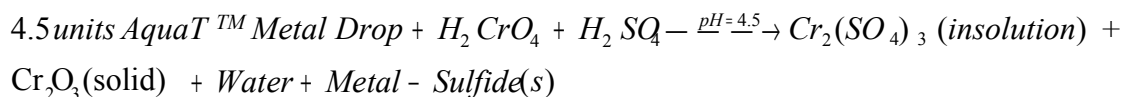
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Operational Guidelines



For the treatment of Hexavalent Chromium AquaT™ Metal Drop should be added to the reduction tank at an appropriate amount to reduce and precipitate the metal, which can be determined by Jar Tests. This treatment is carried out in two steps:

First, the Hexavalent Chromium, present in the form of chromic acid, is reduced and precipitated using AquaT™ Metal Drop. Roughly 50% of the chrome is reduced to trivalent chrome in the form of chromic-sulfate and the other half of the chrome precipitates out as insoluble chromium oxide. The general, unbalanced, chemical reaction is as follows:



The above equation is unbalanced but the dosage of AquaT™ Metal Drop is 4.5 units per unit of hexavalent chrome.

Second, the trivalent chromic-sulfate is mixed with sodium hydroxide to form an insoluble chrome hydroxide. The chromic oxide experiences no chemical transformation during this stage of the reaction.

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For the removal of metals other than Hexavalent Chromium, AquaT™ Metal Drop should also be added by ORP. Through Jar Testing an ORP set-point can be found that lowers the metal concentration in treated water to a desired level precipitating out the rest. If a Chromium reduction tank precedes this step the ORP can be set to allow AquaT™ Metal Drop to overflow to the main metal equalization tank to treat the remaining metals.

Other metals will influence ORP and chemical demand. Dosage, pH & ORP set points, and supplementary agglomerating agents are determined through jar testing.

The Jar Test is a piece of equipment that contains 4 to 6 identical beakers (or jars) that are mixed at a uniform speed by a stirring paddle. If a Jar Test kit is not available a beaker and stir bar mixer can be used for testing. Using this apparatus the most appropriate pH and ORP for AquaT™ Metal Drop addition can be determined through trials that simulate waste water treatment tanks.

The data and statements contained in this bulletin are based on testing information and are believed to be accurate and reliable. This bulletin is not a Guarantee or Warranty, express or implied regarding the products use. The product is sold on the condition that the purchaser will do their own tests to determine the suitability of the product in a particular application.

READ THE SDS BEFORE USING THIS PRODUCT