

WATER SPECIALISTS TECHNOLOGIES LLC

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WST-2A PRECIPITANT

WST-2A is a precipitant formulated of alkali salts that can be used to remove metals in wastewater streams over a wide pH range. The greatest reduction of metals occurs in slightly alkaline wastewater, but the chemistry is designed to eliminate H₂S odor even in acid solutions as low as a pH of 3.

Principal Uses:

WST-2A is a liquid heavy metal removal product, which has a strong affinity for metal ions such as Mercury, Silver, Cadmium, Copper, Lead, Nickel, Zinc, Cobalt II Nickel, Iron and Manganese II. This product is unique in that the structure of the product provides both metal removal as well as some coagulation of the insoluble metal particles. Applications include:

- Ash Ponds
- Automotive
- Chemical Manufacture
- Contaminated Groundwater
- Contaminated Soils
- Electronic Manufacturing
- Electroless Plating
- Flue Gas Waters
- Hazardous Waste Landfills
- Hazardous Waste Treatments
- Incinerators
- Metal Fabrication
- Metal Finishing
- Metal Plating
- Military Bases
- Municipal Landfills
- Nuclear Waste
- Petroleum Drilling
- Petroleum Refiners
- Printed Circuit Board Manufacturers
- Sludge Stabilization
- Waste Oil

Product dosages:

WST-2A dosages will vary depending upon the:

1. Level of metals in the water
2. Types of metals to be removed
3. Chelators present
4. Required reduction
5. Oxidizers in the water

Competitive Comparisons:

There are a number of advantages of the WST-2A chemistry over the following competitive products:

1. DTC (Dimethyldithiocarbamate)
2. TMT
3. TTC
4. Sodium Sulfide

Advantages:

1. Low Hydrogen Sulfide Generation: Sulfur compounds can generate hydrogen sulfide in less than neutral pH conditions. WST-2A is especially formulated to prevent hydrogen sulfide emissions from exceeding H₂S allowable limits.
2. Mixed Wastes: WST-2A products are effective in precipitation of mixed metal wastewater in the presence of chelating agents, surfactants and high solids waste streams.
3. Low Toxicity: WST-2A is 10-30 times less toxic than other organic metal precipitants such as DTC compounds, and therefore less toxic to employees and the environment.
4. Wide pH Range: WST-2A can be used over a wide pH range of 3-14 without generating harmful levels of H₂S.
5. High Filterability: WST-2A precipitates a dense particle that is easily separated and filtered.
6. Sludge Reduction: With WST-2A a reduction in sludge generated from the removal of metals is normally quite noticeable.
7. Low Level Removal: WST-2A removes metals to trace levels. In most cases ppb levels are achievable.

WST-2A will go after metals in the following order, in DI water:

<u>Element</u>	<u>Symbol</u>	<u>WST-2A *</u>
Mercury	Hg	8 ppm
Silver	Ag	6 ppm
Cadmium	Cd	12 ppm
Copper	Cu	22 ppm
Lead	Pb	8 ppm
Nickel	Ni	24 ppm
Zinc	Zn	22 ppm
Cobalt II	CoII	24 ppm
Iron II	FeII	26 ppm
Manganese	MnII	26 ppm

*WST-2A dosage needed for metal removal.(1ppm)

Materials of Compatibility:

<u>Compatible</u>	<u>Non-compatible</u>
304SS	Mild Steel
316SS	Copper
Fiberglass	Brass
PVC	Galvanized
Polyethylene	
Neoprene	
Polypropylene	
Hypalon	
Teflon	