

Assessment of REMOTOX[®] for Precipitation of Heavy Metals in Laboratory Waste Stream

Abstract

The scope of this study is to assess the potential of REMOTOX in cleaning up heavy metals in laboratory waste stream in an effort to reduce hazardous waste to the minimum quantity, thereby reducing transportation and disposal cost. The objective is to determine the amount of REMOTOX to be added, the reaction time for the heavy metals to precipitate and to determine its effectiveness in reducing laboratory hazardous waste disposal. Two different solutions will be utilized in this study. A certified analytical control standard that contains a mixture of arsenic, cadmium, mercury, lead and selenium (Sample #1) and a laboratory waste stream resulting from the analysis of chloride, which contains chromium and mercury (Sample #2). REMOTOX will be added into both solutions. Observations will be recorded until reaction is complete. The completion of the reaction will be indicated by a clear supernatant and the metals precipitate seen at the bottom.



Figure 1

Figure 1 shows the initial color and volume of Sample #1, Sample #2, and REMOTOX.

The samples labeled from left to right: Sample #1, Sample #1 before addition of REMOTOX, Sample #2 before addition of REMOTOX, Sample #2, and REMOTOX.



Figure 2

Figure 2 shows the immediate reaction of the Sample #1 and Sample #2 after the first addition of REMOTOX. Two distinct layers formed in both samples.

The samples labeled from left to right: Sample #1, Sample #1 after addition of REMOTOX, Sample #2 after addition of REMOTOX, Sample #2, and REMOTOX.

Product Fundamentals

REMOTOX is an aqueous Calcium Polysulfide Solution, available at 29% (w/w) concentration with a typical pH of 11.5 and a Specific Gravity of 1.27 (10.6 lbs/gal). The solution is deep orange red in color and may have a moderate sulfide odor. REMOTOX does not contain dithiocarbamate, or its related salts. Its residues are inert and non-toxic. REMOTOX is non-DOT regulated.

Graus
Chemicals

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Conclusions

The supernatant was analyzed for heavy metals and the concentrations were below the waste disposal limits. As a result, the supernatant can be discharged safely and only the metals precipitate needs to follow the hazardous waste disposal protocol.

Please contact us to obtain
the complete study.

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