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TECH DATA SHEET

Sulf-B-Gone-3

(AQUIOUS, STABILIZED, INHIBITED CLO₂)

Application Description

Chlorine dioxide is effective in the remediation of bacterial and sulfide contamination commonly found in oil and gas production, injection and disposal fluids. Sulfides (S²⁻) are formed by the metabolism of anaerobic sulfate reducing bacteria found in oil wells, gas wells and water handling systems. These sulfides react with iron to form insoluble iron sulfide, which together with the bacterial biofilm act as plugging agents. The sulfides can also result in sour crude oil and gas that is of lower quality and more expensive to refine.

Chlorine dioxide is used for two purposes in this application. First, as a chemical oxidant to oxidize the sulfides to sulfates, thus preventing the formation of colloidal sulfur or iron sulfide, which can plug the well and second, as a biocide to kill the bacteria which produce the sulfides.

The performance of chlorine dioxide is unaffected by pH or by the presence of other organic materials.

Feed Requirements

The required dosages will vary with process conditions. Sulf-B-Gone-3 may be applied either continuously or intermittently to oil well production water as it is separated from the oil, and before it is re-injected into the well. For continuous feeds, Sulf-B-Gone-3, chlorine dioxide may be injected at dosages slightly higher than sulfide's oxidative demand as determined by a demand study. For intermittent treatment, Sulf-B-Gone-3 chlorine dioxide should be applied at a shock dosage of 200-3000 ppm.

Method of Feed

Sulf-B-Gone-3, chlorine dioxide solutions for best results should be fed where adequate mixing and uniform distribution can be accomplished. Multiple treatment points may be required in some cases. The feed point should be below the solution level to prevent volatilization of the chlorine dioxide.

Chlorine Dioxide Analysis

Residual chlorine dioxide concentrations must be determined by substantiated methods that are specific for chlorine dioxide. Two suitable methods are published in Standard Methods for the Examination of Water and Wastewater:

3500-CLO₂B Iodometric Method

3500-CLO₂E Amperometric Method I

EPA Approved Method of CLO₂ injection