

ZI-CHEM 11120

Oilfield Microbiological Control

HIGHLIGHTS

ZI-CHEM 11120 is a broad-spectrum micro-biocide containing the active substance tetrakis (hydroxymethyl) phosphonium sulfate for controlling microbial growth in oil field applications such as injection water systems, drilling muds, packer fluids, completion and workover fluids. The unique mechanism of action of THPS enables it to not only kill microorganisms but also reduce hydrogen sulfide concentrations.

ZI-CHEM 11120 is especially effective in controlling sulfate-reducing bacteria which are particularly troublesome in the oilfield, causing corrosion, filter plugging, inefficient demulsification, reduced pump life, and the generation of toxic gases.

TYPICAL PROPERTIES

- Appearance: Clear Colorless to Pale Yellow Liquid
- Specific gravity: 1.3 – 1.4
- pH: 3.0 – 5.0
- Flash point: > 96.1°C

PRIMARY APPLICATIONS

The desired dose rate of ZI-CHEM 11110 will depend on the specific application and dosing methods. Actual dose will depend on the conditions and the results required. Specific recommendations will be provided by your ZI-TECHASIA technical representative.

Water Floods

ZI-CHEM 11120 should be added to a water flood system at a point where uniform mixing will occur. Initial Treatment: add 93-350 ppm ZI-CHEM 11120 a flowing system, 2-6 hours based on flow rates. Repeat as necessary until control is achieved. Subsequent Treatment: add 7.5-98 ppm ZI-CHEM 11120 weekly or as needed to maintain control. Slug dose for 2-6 hours based on flow rates or continuously at 7.5-67 ppm.

Oil and Gas Production and Transmission Pipelines and Systems

ZI-CHEM 11120 should be added at a point in the pipeline where uniform mixing will occur. Slug Dosing: Follow instructions for water flood treatment. Continuous Dosing: 14-100 ppm.

Hydraulic Fracturing

ZI-CHEM 11120 should be added to the frac water storage tanks or directly into the well head injection pipeline as the water is being pumped down-hole. Add 66.7-350 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

ZI-CHEM 11120 should be added to these fluids at a point where uniform mixing will occur. Add 33-1400 ppm to a freshly prepared fluid depending on severity of contamination.

THE BENEFITS

- Avoid deterioration of crude oil and petroleum products
- Avoid disruption in oil extraction and processing technology
- Protect oil and gas pipeline from MIC
- Avoid unscheduled downtime
- Environmentally friendly

COMMON APPLICATIONS

- Water Floods
- Oil and Gas Production and Transmission Pipelines and Systems
- Hydraulic fracturing operations
- Drilling muds, Packer fluids, Completion and workover fluids
- Pipeline protections

PACKAGING

- 30kg pails
- 250kg drums
- 1,250kg IBC's or in bulk

HANDLING & SAFETY

ZI-TECHASIA maintains a database of safety data sheets (SDS) on all our products. These contain health & safety information to assist in the safe and appropriate chemical handling, ensuring the protection of personnel.



Gas Storage Well and Systems

Individual injection wells should be treated with ZI-CHEM 11120 at the same application rates, and in the same manner as described under Water Floods. Injections should be repeated as needed to maintain control.

Individual drips should be treated with quantity of ZI-CHEM 11120 to produce a concentration of 33.3-133.3 ppm. Injections should be repeated as needed to maintain control.

Well Remediation Operations

Individual production or injection wells may be bullheaded with ZI-CHEM 11120 to control bacteria and simultaneously dissolve iron sulfide deposits. Pump into the well as a solution in water containing from 13.33 to 40%. The well is shut-in for at least 6 hours.

Hydrotesting

Slug dose to produce 67-667 ppm depending on water quality and length of time the equipment will remain idle.

Pipeline Pigging and Scraping Operation

Add to a slug of water immediately following the scraper to produce a concentration of 0.007% to 0.07% in the water at the discharge point or pig trap, depending on the length of the pipeline and the severity of the biofouling.