

Biocide KHF003G

1. Introduction

The mixing water for the preparation of fracture fluid should be free of bacteria and enzymes. Either can cause degradation of the polymer and premature viscosity break. They can also prevent viscosity development. Bacteria produce enzymes to which most guar or guar derivative polymers are particularly sensitive.

2. Physical Properties and Hazards

| Additives | Form | S.G. | Water Solubility | Health Hazard | Physical Hazard | pH |
|-----------|----------------------------------|-----------|------------------|------------------------|-----------------|---------|
| KHF003G | Colorless to light yellow liquid | 1.10-1.15 | Soluble | Eyes, skin, inhalation | Flammable | 3.5-5.0 |

3. Chemical Properties and Application

KHF003G is added to the mix water as early as possible, and preferably put into tanks before the water is added. Before using, the tanks should be thoroughly cleaned. No residual fluids should remain in the tanks. Tanks containing residual fluid provide an ideal environment for bacteria to grow. When the tanks are used again, the bacteria count can be so elevated that the gelling agent will be rapidly degraded.

It can be continuously mixed during the treatment to prevent bacterial growth in the reservoir, but it will be of little or no benefit to the stability of the fracturing fluid if added by continuous mix. This product will kill bacteria but cannot remove enzymes.

KHF003G will not affect the rheology of most crosslinked guar based fracturing fluids, and it is also compatible with most additives used in OPTiFrac and EZFrac. Laboratory testing is required before using these additives together in fluid systems.

4. Treatment

The recommended concentration for KHF003G is 0.25-0.75 Gal/1,000 Gal of mixing water.

5. Packaging

This product is supplied in 55 gallons high density polyethylene (HDPE) or steel drums. Keep it away from extreme conditions such as places near flames or direct sunlight.