

## Clay Stabilizer KHF002D

### 1. Introduction

Clay stabilizers are routinely added to aqueous-based fracturing fluids to help prevent damage to the formation caused by clay migration and swelling. These clay stabilizers are either a temporary or permanent type, and they are often used in combination.

The clay stabilizer KHF002D is a KCl substitute and can be used with Guar, HPG, CMHPG and Friction Reducer-based frac fluids. KHF002D is a temporary clay stabilizer that helps to prevent clay particles from swelling and plugging reactive clays in water-sensitive formations during fracturing operations.

### 2. Physical Properties and Hazards

| Additive | Form         | Specific Gravity | Water Solubility | Melting/Flash Point (°C) | Health Hazard  | Physical Hazard | pH      |
|----------|--------------|------------------|------------------|--------------------------|----------------|-----------------|---------|
| KHF002D  | Clear Liquid | 1.08-1.13        | Soluble          | >93                      | Moderate, Eyes | None            | 6.0-8.0 |

### 3. Chemical Properties and Application

Temporary clay stabilizer KHF002D is an organic clay stabilizer. It is not a solution of KCl, but it can be substituted for KCl in most oilfield applications.

KHF002D has been used at temperatures up to 350°F without any adverse effect on fluid rheology.

KHF002D can be batch mixed or continuously mixed into the fracturing fluid using a liquid-additive system.

This eliminates the time-consuming step of batch mixing dry KCl in the base fluid. KHF002D can be used in most aqueous-based fracturing fluids and is compatible with most additives in fracturing fluid systems.

KHF002D is highly recommended for systems that are sensitive to high salt concentrations.

### 4. Treatment

The recommended KHF002D concentration is 0.5 to 2 Gal/1,000 Gal (0.5 to 2 L/m<sup>3</sup>). For specific formations such as high reactive clay content, the KHF002C concentration can be further optimized using laboratory core flow tests.

### 5. Packaging

KHF002D is supplied in 55 gallons HDPE drums or 265 gallons HDPE IBC totes.

Keep it away from extreme conditions such as places near flames or direct sunlight.