

# Low Temperature Breaker KHF011

## 1. Introduction

Proppant-pack permeability can be severely damaged by gelling agents such as guar or its derivatives. The amount of damage increases as polymer concentration increases. Breakers are generally used to reduce the viscosity of the fracturing fluids by degrading the polymer that is concentrated in the proppant pack. KHF011 is an oxidizer breaker used in most guar or guar derivative based fracturing fluids.

## 2. Physical Properties and Hazards

Additives	Form	S.G.	Water Solubility	Health Hazard	Physical Hazard	pH
KHF011	White crystals	1.89-2.09	Soluble	Eyes, skin	Oxidizer	3.0-7.0 (5%)

## 3. Chemical Properties and Application

The reactivity of KHF011 is strongly dependent on temperature. Thermal decomposition of KHF011 produces highly reactive radicals that can attack the guar-based polymer backbone.

By itself, KHF011 is effective in the temperature range of 125 to 225°F. KHF011 can be used at fluid temperatures less than 125°F when breaker aid is used together. Encapsulated breaker KHF012 should be used at high temperature greater than 225°F.

KHF011 is not compatible with reducing chemicals and stronger oxidizers. Care should be taken to avoid the use of reducing additives and stronger breakers together with KHF011.

## 4. Treatment

Breaker KHF011 is an oxidative breaker. It can be used in both linear gel and crosslinked fluids. Breaker KHF011 can be batch mixed, continuously mixed or used as a dry material.

Typical concentration of 0.01-2.0 lbs/Mgal is recommended to cover most fracturing operations.

## 5. Packaging

KHF011 is supplied in 55 lbs plastic-lining bags generally in buckets with net weight of 25 kg/package. Keep it away from extreme conditions such as places wet and humid or direct sunlight.