

# High Temperature Breaker KHF013

## 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. KHF013 is an oxidizer designed for breaking guar or guar derivative based fracturing fluids at high temperature applications.

## 2. Physical Properties and Hazards

Additives	Form	S.G.	Water Solubility	Health Hazard	Physical Hazard	pH
KHF013	White granules	3.27-3.47	Soluble	Eyes, Skin	Oxidizer	7.0-8.0 (1%)

## 3. Chemical Properties and Application

The reactivity of KHF013 is strongly dependent on temperature. Thermal decomposition of KHF013 produces highly reactive radicals that attack the guar-based polymer backbone.

KHF013 is effective in the temperature range of 200 to 300°F. KHF011 can be used at fluid temperatures less than 200°F. KHF014 (encapsulated KHF013) should be used at high temperatures greater than 300°F.

KHF013 is a strong oxidizer which is reactive with most chemicals such as acids, salts, and all reducing agents. Toxic or corrosive gases may release from the above reactions. Care should be taken seriously to avoid the use of reducing agents, acids, salts and other oxidizers together with KHF013.

## 4. Treatment

KHF013 concentration depends on factors such as polymer concentration, temperature, break time requirement, and polymer type. Typical concentration of 0.01-2.0 lbs/Mgal is recommended to cover most fracturing operations. Laboratory testing may be required for optimized breaker schedule design.

## 5. Packaging

KHF013 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.