Medium Temperature Encapsulated Breaker KHF012

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 used to reduce the viscosity of the fracturing fluid by degrading the polymer that is concentrated in the proppant pack. KHF012 is the encapsulated version of KHF011, which is used for breaking polymers in fracturing fluids.

2. Physical Properties and Hazards

Additives	Form	S.G.	Water Solubility	Health Hazard	Physical Hazard	pH
KHF012	White to tan granules	1.76-1.96	N/A	Eyes, skin	Oxidizer	N/A

3. Chemical Properties and Application

KHF012 is a particulate material with specific size produced by coating (encapsulating) KHF011 with a water-resistant barrier. Encapsulation of the breaker greatly reduces fracturing fluid exposure to the breaker and enables the use of high concentrations of breaker that, without coating, would rapidly reduce the fluid viscosity. KHF012 cannot leak off and be lost to the formation, KHF012 remains in the fracture where it is needed to degrade concentrated polymers. After fracturing treatment, release of the breaker occurs as the reservoir temperature increases and the fracture closes.

The effective working temperature for KHF012 is in the range of 125-275°F.

KHF012 can be used in most guar and derivative based fracturing fluid systems such as OPTiFrac and UniFrac. It is compatible with most additives used in these systems except for reducers or stronger oxidizers.

4. Treatment

Breaker KHF012 is an oxidative breaker. It can be used in both linear gel and crosslink fluids. KHF012 can be used with proppant sizes 16/30 mesh and smaller. As much as 5 times of KHF011 loading (up to 10 lbs/Mgal) can be added into fracturing fluids by using encapsulation technique such as in KHF012.

5. Packaging

KHF012 is supplied in 55 lbs plastic-lining bags generally in buckets with net weight of 25 kg/packaging. Keep it away from extreme conditions such as places wet and humid or direct sunlight.