

CMHPG Gelling Agent KHF031

1. Introduction

Gelling agent is one the most important additives in fracturing fluids to provide enough viscosity for breaking the formation rocks and carrying proppant into the fractures.

Gelling Agent KHF031 is a dispersible carboxymethyl hydroxyl propyl guar (CMHPG) for the use in hydraulic fracturing fluids. Addition of appropriate crosslinker and stabilizer converts it to the corresponding highly viscous gel fracturing fluid for applications at very high temperatures. CMHPG is less damaging and provides better retained conductivity to the proppant pack than regular guar powder.

2. Physical Properties and Hazards

Additive	Form	Specific Gravity	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH
KHF031	Light-yellow Powder	1.4-1.6	Soluble	>100	Eyes	Fire, Dust, Water Slick	9.5-10.2 (0.54 wt.%)

3. Chemical Properties and Application

KHF031 can be used to prepare fluids in batch mixing or on the fly. The fluid application temperature of crosslinked KHF031 (EZFrac) ranges from 80 to 350°F (27 to 177°C). It can be mixed with freshwater and salt water, depending on the application requirement.

Together with crosslinker, activator and the delaying agent, the gelling agent KHF031 provides wide range of delay time and rheological property at all temperature and shear. The pH should be below 6.0 for proper hydration. Since regular mix-water has a pH of above 7.0, it requires pH adjustment during hydration. Hydration aid KHF023 is used to adjust the fluid pH for proper hydration of KHF031. The delay time can vary from 0-6 minutes depending on the amount of delay agent used.

The high temperature stabilizer KHF005 can be used to prevent degradation of EZFrac at temperatures greater than 200°F (93°C).

4. Treatment

The 20-55 lbs/1,000 gal gel loading is generally required to get enough viscosity to initiate fracture and transport the proppant into the fracture. Gel loading varies with factors such as bottom hole temperature and pumping time. The higher is the bottom hole temperature, the more is the gel loading to achieve the required viscosity.

5. Packaging

KHF031 is supplied in plastic-lined bags with net weight of 25 kg/bag or 900 kg/jumbo bag.

It should be stored in shaded areas with good ventilation. Keep it away from high temperature, humidity and direct sunlight.