

# pH Buffer KHF024

## 1. Introduction

Crosslinked CMHPG based fracturing fluids reaches optimum properties while pH is in the range of 9-9.5. Zirconium crosslinker itself does not offer sufficient buffering and the crosslinking takes place very slowly. To get optimum crosslinking efficiency, the pH needs to be raised to above 9, and the pH buffer KHF024 is generally used.

## 2. Physical Properties and Hazards

Additives	Form	S.G.	Water Solubility	Health Hazard	Physical Hazard	pH
KHF024	White granules	2.01-2.21	Soluble	Eyes, skin	Corrosive	9.5-10.5 (2%)

## 3. Chemical Properties and Application

CMHPG powder needs lower pH to hydrate. Zr-based crosslinking is temperature activated, but at low pH, crosslinking will be very low. To increase the effectiveness of crosslinking, the fluid needs to be maintained at a pH in the range of 9.0 to 9.5. Addition of Caustic will increase the pH dramatically to above 10, and Caustic is not recommended for CMHPG fluids. pH Buffer KHF024 is very effective in maintaining the pH value between 9.0 and 9.5 and is the widely recommended additive for CMHPG crosslinked fluids.

The guar or guar derivative based fracturing fluids can be stabilized easily at temperature 350°F (177°C) if the fluid is designed properly.

KHF024, together with Zirconium crosslinker (KHF026) and Delaying agent (KHF025), is generally used to prepare crosslinker solutions for most guar or guar derivative based fracturing fluid systems. It is compatible with all additives used in these systems.

## 4. Treatment

The concentration range for the activator KHF024 is 6-8 lbs/1,000 gal of fracturing fluid.

## 5. Packaging

This product is supplied in plastic-lining bags with net weight of 25 kg/bag. Keep it away from extreme conditions such as places wet and humid or direct sunlight.