

Expanding Agent KCM025HC

1. Introduction

This expanding agent compensates for the volumetric shrinkage of the cement during the setting process by generating large-volume crystalline hydration products. Under confined conditions, it introduces stress within the cement sheath, thereby improving the interfacial bonding between cement, casing and formation, as well as the zonal isolation effectiveness.

KCM025HC is an additive specifically designed to address the issue of cement shrinkage in high-temperature well cementing operations. In deep wells, ultra-deep wells, geothermal wells, and other high-temperature environments, conventional cement slurries undergo volumetric shrinkage after hydration. This shrinkage may create micro-annuli between the cement, casing or formation, leading to failure of zonal isolation and fluid channeling.

2. Physical Properties and Hazards

Additive	Form	S.G.	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH
KCM025HC	Gray Powder	3.47-3.67	Insoluble	Not Combustible	Inhalation	Dust	N/A

3. Chemical Properties and Application

KCM025HC is a solid cement additive which provides cement expansion after setting in order to seal the interfaces between cement, casing and formation.

The sealing effect described above eliminates the micro-annulus, prevents the fluid migration and improves the quality of zonal isolation and the primary cementing.

The application temperature range of KCM025HC is between 200°F and 500°F, the degree of expansion is determined by factors such as temperature and cement system design.

4. Treatment

For the conventional cement slurry system with density of 1.89g/cm³, typical concentration range is between 1% and 5%BWOC.

5. Packaging

KCM025HC is supplied in plastic-lining bags with net weight of 25 kg/sack.

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