

PRODUCT DATA SHEET

Organic Polyhydrogen Acid for Acidizing – MH-5

Product Introduction

Polyhydrogen acid is a multi-stage acid system developed to meet the requirements of deep acidizing operations. It is a retarded acid with multi-level ionization capability. A single polyhydrogen-acid molecule contains multiple hydrogen ions (H^+), up to five, but their reactivity varies depending on their positions in the molecule, with each ionization stage having roughly similar activity.

During application, under formation conditions, the most reactive first-stage H^+ ions are released first, generating active acidity, followed by the second and subsequent ionization stages. This ensures a gradual release of hydrogen ions and a balanced H^+ concentration throughout the entire reaction, reducing the damaging effect of strong acids in the near-wellbore zone. It significantly enhances the deep formation stimulation and blockage-removal capability of the acid system. Meanwhile, polyhydrogen acid also exhibits strong chelating ability, anti-emulsification properties, and acid-residue resistance.

Application Characteristics

- This product is used in combination with the solid polyhydrogen acid component MF. It is suitable for formations such as carbonate, mud shale, and sandstone. When used with MF acid, it serves as an effective retarded mud acid, especially for formations with severe near-wellbore damage while deeper zones remain insufficiently treated.
- The recommended dosage is 2%–10%, or determined through laboratory testing based on operational requirements.

Technical Specifications

Appearance	Colorless to light-yellow liquid
Density (20°C, g/cm ³)	≥ 1.1
pH	1–3
Dissolution rate of CaCO ₃ per gram using a 40% MF + MH-5 mixed solution (60°C, 2 hours)	≥ 20%
Dissolution rate of CaCO ₃ per gram using a 40% MF + MH-5 mixed solution (60°C, 4 hours)	≥ 30%

Packaging, Storage and Transportation

- Packed in plastic drums, 25 kg net weight per drum.
- The product must be stored in a well-ventilated, dry, and clean warehouse.
- Shelf life: Two years.

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