

Iron Reducing Agent KMA053

1. Introduction

Ferric and ferrous ions remain in acid solutions due to the low pH of the fresh acids in acidizing treatment. When acid travels from surface to formation, it will dissolve iron from equipment, tubulars, scales and iron minerals in the formation, leading to higher pH and precipitation of iron hydroxides.

Trivalent iron (Ferric) precipitates as iron hydroxide at about pH 3, while the divalent iron (Ferrous) will not precipitate until the acid is spent to pH 8. It is therefore required to add iron stabilizer (reducer) into acid systems to minimize the precipitation of iron hydroxides.

KMA053 is specifically developed for in-situ gelled acid system NISGA as it does not have adverse effects on the reactions between acid gelling agent and crosslinker.

2. Physical Properties and Hazards

Additive	Form	Specific Gravity	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH (50 g/L)
KMA053	Off-white Solid	1.62-1.72	Soluble	-	Eyes, Skin	Dust	2.0-4.0

3. Chemical Properties and Application

KMA053 is an iron reducing agent used in both fresh and spent acids to keep iron in solution instead of precipitating. It can be used for most applicable stimulation fluid systems at various well conditions.

Ferrous iron will not form iron hydroxides until pH 8. As we know, pH of most spent acids will not be more than pH 6. Therefore, the chance of forming ferric hydroxide precipitation will be dramatically reduced if the ferric iron is converted into ferrous iron.

KMA053 is a high-performance iron reducing agent, which will react with ferric iron in acids and convert ferric iron to ferrous in NISGA systems. KMA053 is compatible with other additives in NISGA systems such as KMA050, KMA051 and KMA052.

4. Treatment

50 lbs/Mgal KMA053 is typically enough for control 3000 ppm of ferric iron.

5. Packaging

KMA053 is supplied in plastic-lining bags with net weight of 25 KG/bag.

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