FRANKLIN WELL SERVICES INC
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TECHNICAL INFORMATION SHEET

FRANKLIN IRON CHELATING AGENT A46

Hydrochloric acid treatments are used on older producing and injection wells to dissolve precipitated iron and scale from the well bore. Once the iron has been dissolved and the acid spent, the iron will re-precipitate in another location. Many times, this is deeper in the formation.

Iron stabilizing agents should always be used when acidizing formations containing iron minerals or when iron scale is present in the pipe. Even new casing and tubing has a considerable amount of "mill scale" present which will be dissolved in the acid. Once the iron has been dissolved and re-precipitated, it can become the nucleus for emulsions in oil wells.

The dissolved iron is in two stages, ferrous (II) and ferric (III). The iron remains in solution until the acid is spent and the pH begins to rise. At a pH of near 2, the iron that is in the ferric state will precipitate as ferric hydroxide, a slimy, gelatinous, insoluble mass. This mass can plug flow channels and reduce permeability. If Franklin's A46 Chelating agent is present in the acid, the ferric ions will react with the molecules of the chelant and no precipitate will be formed. The chelated iron is removed from the formation as the well cleans up.

Ferrous iron does not precipitate until a pH of 7.7 is reached. Since spent acid seldom attains a pH of more than 6, ferrous hydroxide does not precipitate. Therefore, ironstabilizing agents are needed only to keep ferric iron in solution.
Normal concentrations of A46 in acid are 2 to 10 gallons per 1,000 gallons of acid depending on the concentration of iron present.

A46 is compatible with almost all other acidizing chemicals and is effective in BHST up to 400 degrees Fahrenheit.