Chemistry and Technology of Fuels and Oils 2015 vol.50 N6, pages 584-587

Development of an effective scale inhibitor based on organophosphonic compounds in an aqueous-alcohol solvent

Varfolomeev M., Gerasimov A., Rakipov I., Nurgaliev D., Luzhetskii A., Gabidullin I.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015 Springer Science+Business Media New York. We have studied the effect of the ratio of hydroxyethylidene diphosphonic acid and nitrilotri(methylphosphonic acid) and also polyaminopolyether methylenephosphonate chelating agent additives on scale inhibition in simulated formation water. We show that replacing the water with an aqueous-alcohol solvent lowers considerably the pour point of the reagent without having an appreciable effect on its effectiveness. We have developed a composition that exhibits high effectiveness of scale inhibition for scale composed of calcium carbonate and also calcium and barium sulfates when added at 10-20 mg/L.

http://dx.doi.org/10.1007/s10553-015-0567-z

Keywords

barium sulfate, calcium carbonate, calcium sulfate, organophosphonic acids, polyaminopolyether methylenephosphonate, scale inhibitor