

ADVANTAGES

- Both provide advantages in terms of stability at high temperatures and proppant transport capabilities
- Better for treatments in tight gas and sand formations that require extended fracture lengths
- Flexible to use on tap water and light brines
- Allows job design in acidic, neutral, and alkaline pH fluid conditions
- Rheological and friction pressure properties are stable and predictable and it allows for better control of the crosslinking properties of the fluid

Zirconate cross-linked system is available in a low and high pH version. The system can also be mixed with carbon dioxide and it is ideal for sensitive formations with long pumping times. Both low and high pHs are crosslinking with guar to create a one way reaction that it is not reversible.

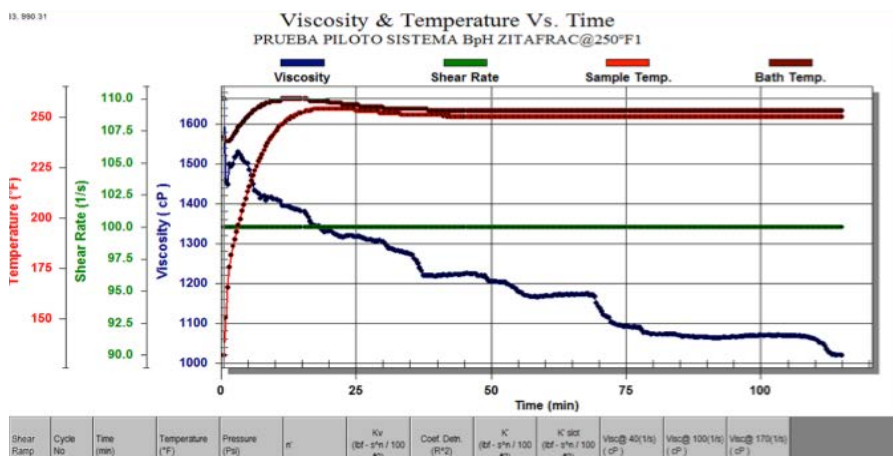


Chart 1- Rheological Test at 250°F of the Zitafrac® System low pH

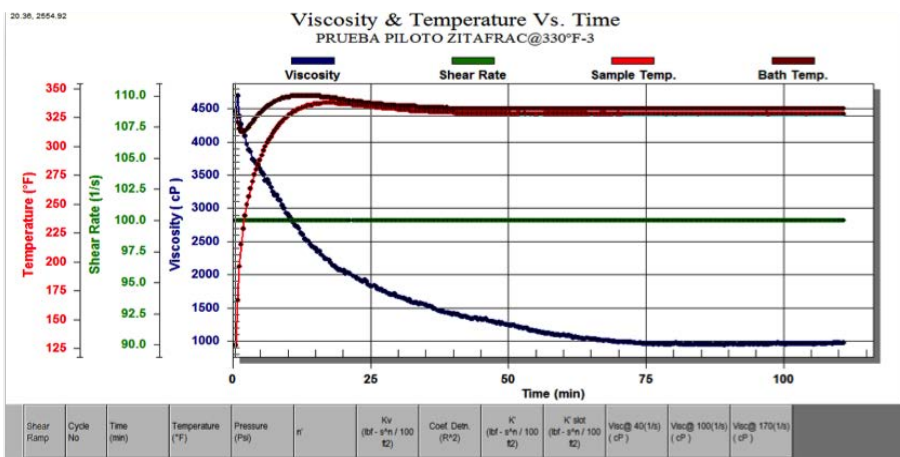


Chart 2 - Rheological Test at 330 °F for Zitafrac® System high pH

PROPERTIES

When carbon dioxide is used it aids with flow back cleaning giving a better fracturing treatment overall. The low pH (Zitafrac®-B) can be used for applications 70°F- 250F and it is designed with a variety of breakers to produce a clean agent support and high conductivity treatment.

The high pH (Zitafrac®-A) system is applicable for temperatures up to 400 degrees and this fluid is used with complexes of guar carboxymethyl-hydroxypropyl (CMHPG). The system can be formulated with a variety of breakers that provide a better cleaning.

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