

**PAFR-708**

Friction Reducer  
High Viscosity Friction Reducer – Fresh Water

**Product Description**

PAFR-708 functions as an anionic, slurry-based friction reducer with a substantial concentration (55%). Its purpose is to be seamlessly incorporated during hydraulic fracturing operations to mitigate friction pressures. PAFR-708 is a high molecular weight polyacrylamide with significant charge density, tailored for implementation in brines ranging from fresh to high salinity. The recommended optimal dosage varies, ranging from 0.001 gal/ ft<sup>3</sup> (0.2L/m<sup>3</sup>) in fresh brines to 0.007 gal/ ft<sup>3</sup> (1.0L/m<sup>3</sup>) in medium to highly saline brines. Beyond its role in reducing pipe friction during fracturing treatments, PAFR-708 facilitates viscosity development within freshwater fracturing fluids. This leads to several benefits, including enhanced proppant transport, operational ease due to reduced water usage and increased proppant concentration, as well as streamlined logistics with fewer chemicals required on-site. For applications necessitating viscosity enhancement in freshwater environments, the recommended optimal dose rate of PAFR-708 ranges from 0.014-0.030 gal/ft<sup>3</sup> (2.0-4.0 L/m<sup>3</sup>).

**Features**

- Unique solid technology designed to handle fresh to high brine levels
- Effective at low concentrations 0.001-0.030 gal/ft<sup>3</sup> (0.2-4.0 L/m<sup>3</sup>) reducing the friction pressures by 75%
- Easily dispersed in water under low shear conditions
- Rapid hydration allows for mixing on-the-fly operations
- Allows increased pump rates at lower treating pressures

**Application and Usage**

PAFR-708 additive is added directly to the stimulation fluid (on-the-fly application). The typical application range is from 0.001-0.030 gal/ft<sup>3</sup> (0.2-4.0 L/m<sup>3</sup>).

**Physical Properties**

|                 |                   |
|-----------------|-------------------|
| Appearance      | Liquid            |
| Color           | Tan               |
| Ionic Character | Anionic           |
| Solubility      | Soluble in Water  |
| pH              | 4-6 (5% Solution) |

**Limitations and Incompatibilities**

Lab testing should be conducted when used with cationic additives.

**Safety and Handling**

PureChem Services can provide Safety Data Sheets (SDS), which detail the precautions necessary to handle, apply or store this product.

## Availability

PAFR-708 is available in bulk, and totes.

## Product Performance

### Friction Flow Loop Data – Fresh Water

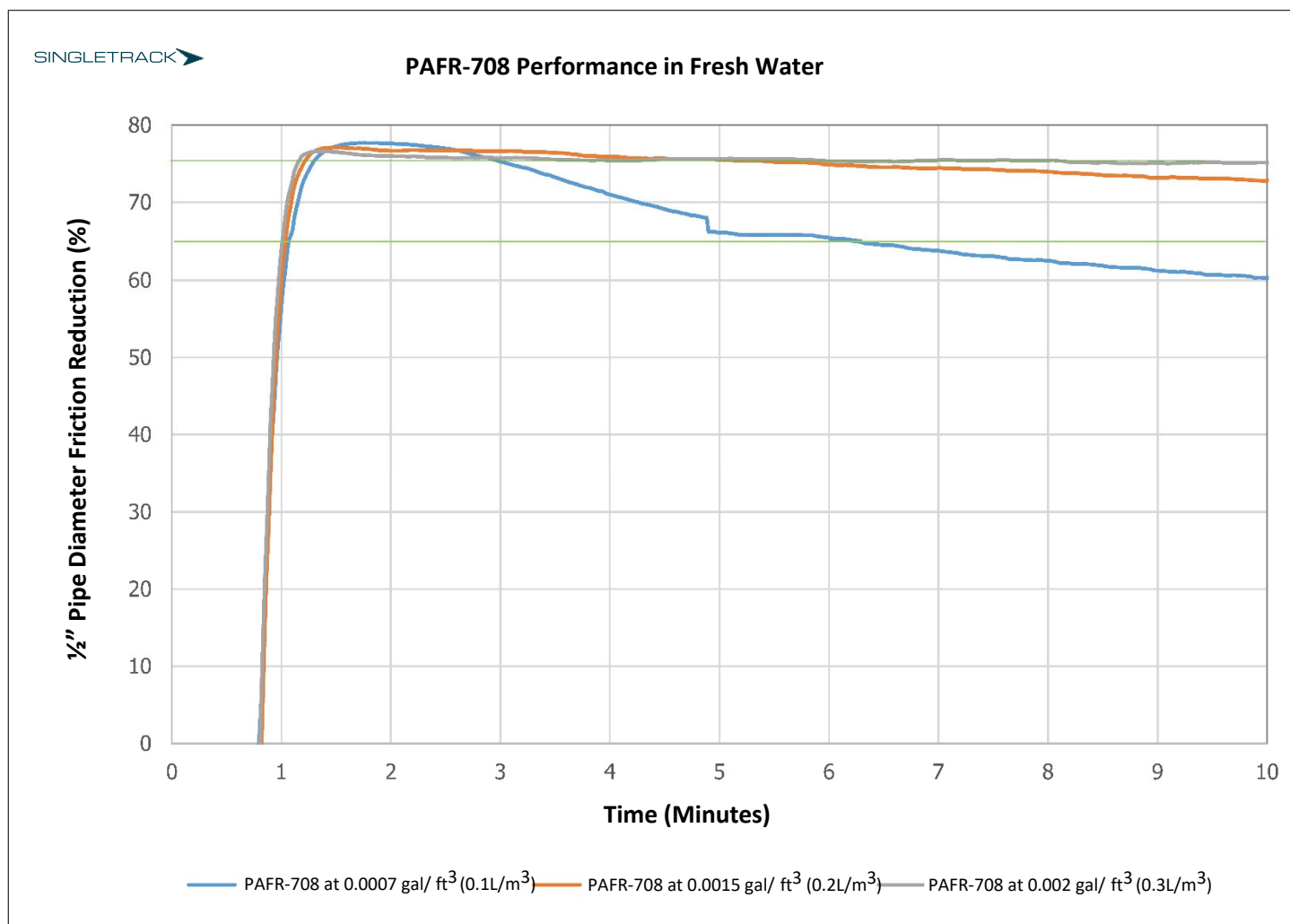


Figure 1. PAFR-708 Percent Friction Reduction in Fresh Water  
(Ametek Chandler Friction Flow Loop Model 6500)

## Rheology Data – Fresh Water

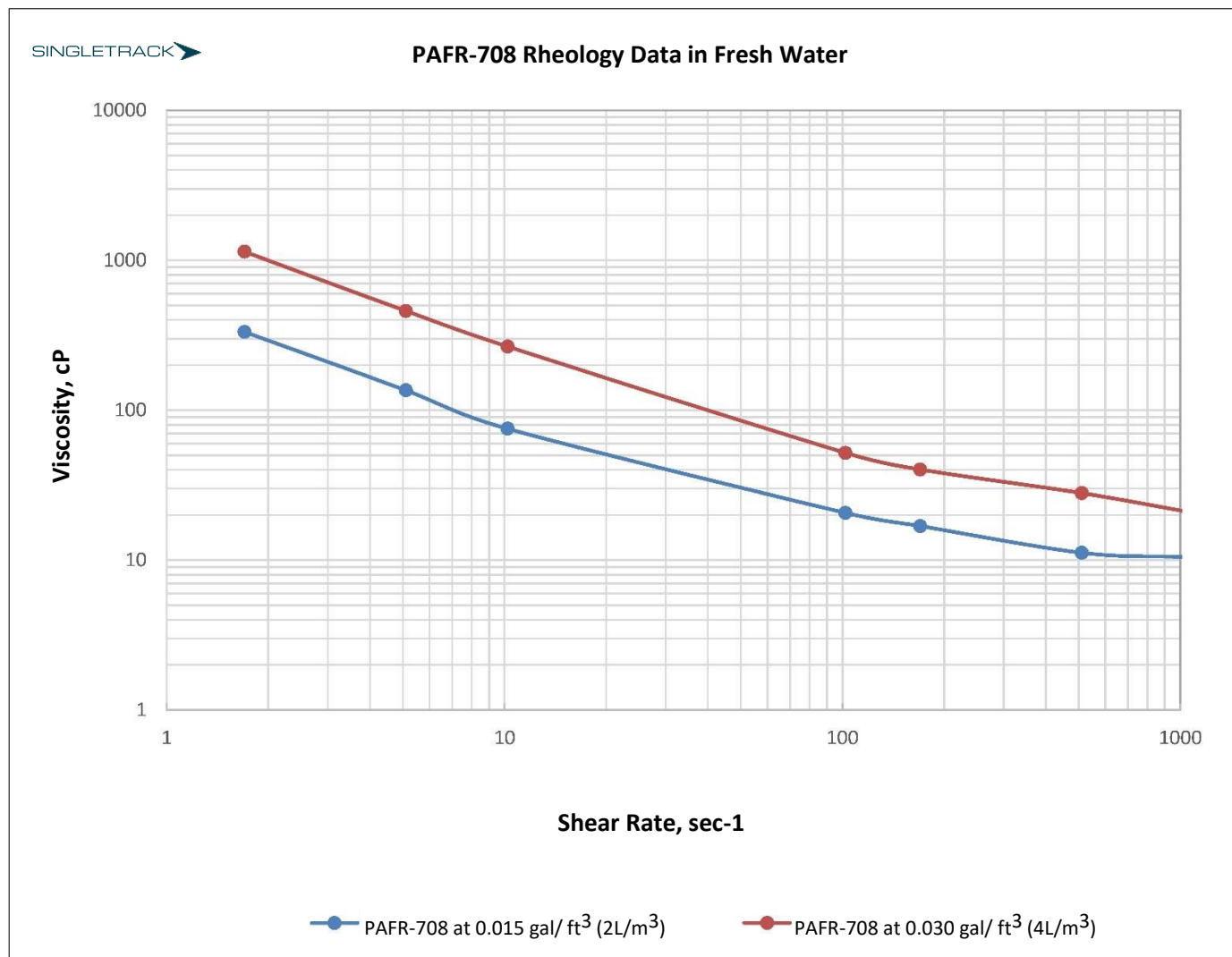


Figure 2. PAFR-708 Rheology Data in Fresh Water  
(Ofite 900 Model R1B1 Configuration)

Viscoelastic Data (Storage  $G'$  and Loss  $G''$  Modulus) – Fresh Water

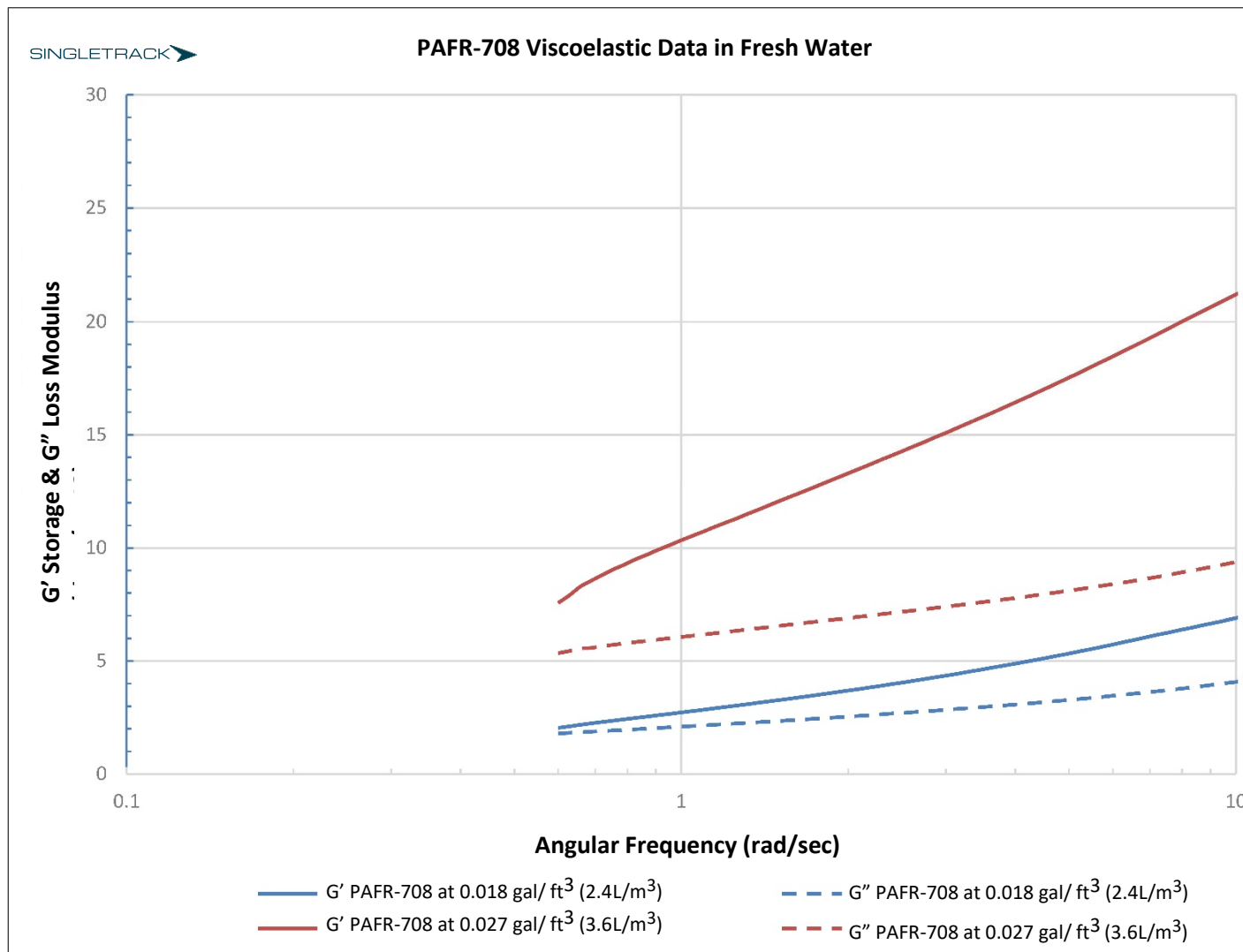


Figure 3. PAFR-708 Viscoelastic Data in Fresh Water (Oscillatory Rheometer Model Discovery HR-2 Hybrid)