Anton Paar

How to Monitor Chemical Enhanced Oil Recovery Fluids?

Relevant for: oil recovery, oil drilling

Oil Recovery

To extract more oil from the same reservoir, operators must find ways either to restore formation pressure and/or to alter the oil's properties to enhance flow by injecting various agents or materials that are not naturally present in the reservoir. Often, when primary production begins to wane, injection wells are drilled to flood the reservoir with water or chemical enhanced water, maintaining pressure and sweeping additional oil into neighboring producing wells.

Polymers change the viscosity of the injected water to better match the viscosity of reservoir oil, which improves the water penetration into the rock pores to enhance oil production. If the polymer solution is not balanced for the reservoir oil conditions, production can drop substantially, negating the benefits of the enhanced oil recovery process.

Common polymer types used in the enhanced oil recovery process are hydrolyzed polyacrylamide (HPAM), hydroxyethyl- cellulose and the polysaccharide xanthan. These polymers are extensively used in several industries as thickening agents.

Inline Viscometer L-Vis 510

One of the key factors for a successful polymer flood is the polymer solution viscosity that must remain on target during the transport from its initial preparation, to the well head and down to the reservoir. Thus, a reliable method is required to measure and monitor the polymer solution viscosity at different points along the dissolution, dilution, mixing, and injection lines. This is provided by Anton Paar's inline viscometer L-Vis 510.

L-Vis 510 is ideally installed after curing to monitor the viscosity of the prepared mother fluid. It can be installed either directly in the line or in a bypass loop to best suit the existing plant requirements and conditions.

Benefits

- Continuous monitoring
- Easy to integrate
- Maximizing oil production
- Minimizing polymer costs

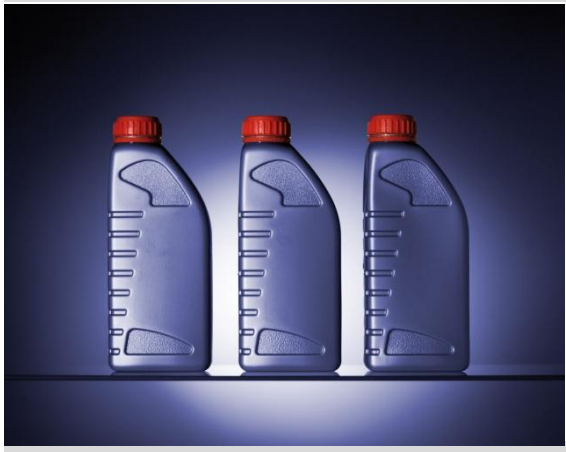
Specifications L-Vis 510

Measuring range	1 to 50.000 mPas
Sample temperature range	-5 to+200 °C
Ambient temperature	-20 to +40 °C
Pressure range	0 to 25 bar
Typical repeatability	0,5 %

Other Related Anton Paar Instruments

Laboratory Instruments

- RCQ series
- MCR series



Do you have any questions?

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