

FLO Ultima 91000 drag reducing agent

Increase throughput in asphaltenic crude pipelines

Applications

- Asphaltenic crude oils

Features and Benefits

- Effective DRA
 - Increase throughput
 - Reduces pipeline friction
 - Decreases pumping energy requirements
- Low impact to refining operations
 - Safe in desalters
 - No impact to fuels
 - JFTOT data available
- Easy to apply
 - Product is stable in standard conditions for long periods of time
 - Pumpable above 32°F

The Baker Hughes **FLO™ Ultima 91000 drag reducing agent (DRA)** is a proprietary formulation designed to reduce friction in asphaltenic crude oils being moved through pipelines under turbulent flow conditions. This oil-in-water stabilized emulsion product minimizes potential impact on refinery operations.

The FLO Ultima 91000 drag reducing agent should be applied in oils with high asphaltene contents where standard DRA products do not function or have a low crude compatibility, and in pipelines that undergo flow conditions appropriate for DRA application. Please contact your Baker Hughes representative for assistance with product selection.

The FLO Ultima 91000 drag reducing agent consists of high-molecular-weight polymers designed to alter the rheological properties of the oil to which it is applied. Due to its very large molecular weight, physical, high-shear forces, such as passing through a pump, will degrade the polymer. As such, it is recommended that the product be injected after pumps to maintain drag reduction improvement.

The FLO 91000 drag reducing agent does not undergo a chemical reaction to achieve drag reduction and under standard conditions will remain chemically inert. The aqueous portion of the product will partition into the water phase of a desalter in refinery operations and does not contain components that will negatively affect a wastewater treatment plant. Its organic phase contains only C, H, and O atoms, and consequently will not

cause a negative impact to distillation cuts. Testing has shown key components of FLO 91000 do not impart negative impact to JFTOT testing.

Table 1	
Specific gravity at 60°F (16°C)	1.0
Typical density at 60°F (16°C)	8.3 lb/US gal (0.995 kg/m ³)
Flash point	>200°F (>93°C)
Pour point	32°F (0°C)
pH	7.3
Viscosity at 60°F (16°C)	298.5 cP at 20 RPM

Materials compatibility

Suitable

Metals: 304 stainless steel,
316 stainless steel,
aluminum, mild steel,
copper, admiralty
brass

Plastics: Polypropylene HD,
polyethylene HD,
polyethylene linear,
PVC, TEFLON®

Elastomers: Buna N, CSM, VITON®,
EPDM

Not suitable

Elastomers: Neoprene

Materials suitability is based on analysis of test results obtained under specified laboratory conditions. All materials selection should be based on actual application. Testing results for materials will be made available on request.

Safety and handling

Before handling, storage, or use, review the Safety Data Sheet (SDS) for guidance.