

PRODUCT DATASHEET

LP 400

Background

LP 400 Flow Improver is part of ConocoPhillips Specialty Products' (CSPI) range of innovative and technologically superior Flow Improver Solutions. As part of the portfolio, LP 400 Flow Improver has been designed specifically for heavier types of crude.

Characteristics

LP 400 Flow Improver is an aqueous suspension product with a greater affinity for heavier crudes. Like our other LP Flow Improvers, it can provide more than 80% drag reduction depending on pipeline or crude conditions.

Benefits

Great performance

- Designed specifically to increase performance in heavier crudes
- Great heat stability in tropical and desert environments
- High achievable drag reduction of more than 80% depending on pipeline or crude conditions
- Increases flow rates while maintaining current pipeline pressures
- Maintains flow while reducing pipeline pressures
- Allows shutting down of intermediate pump stations

Superior technology

- Improves pipeline capacity without capital investment
- Less polymer required to achieve a given performance
- Lower injection rates than traditional drag reducers
- Faster dissolution rates than traditional drag reducers
- Reduces potential internal corrosion rate by up to 40%
- Reduces temperature loss

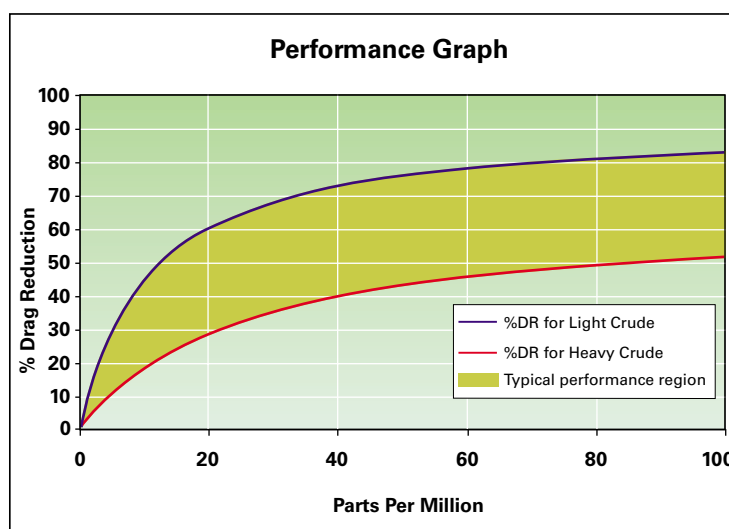
LP 400 Flow Improver allows companies to strategically reduce pipeline operating costs, increase throughput, decrease pressure, or shut down intermediate pump stations.

LP 400 Flow Improver offers the same great polymer technology as other LP Flow Improvers. It dissolves into flowing product without coating pipeline walls. It increases throughput while reducing internal corrosion rates. It allows greater amounts of active polymer to be deployed in a fixed amount of product while improving dissolution dynamics. The polymer of choice offers excellent hydrocarbon affinity, and is able to attain elevated levels of drag reduction under varied operating scenarios. It also has the strength to effectively endure shear forces, but will shear degrade in places where abnormally high shear forces are exerted, eliminating concerns to downstream processes.

Handling

LP 400 Flow Improver is easy to handle, store and clean up. It is environmentally friendly and non-flammable. It flows easily and does not require nitrogen pressurized storage tanks.

See back page for product properties



The performance curve shows the performance range in which LP 400 Flow Improver operates, depending on pipeline and crude conditions.

NOTE: A lab analyses can be conducted to determine if LP 400 Flow Improver is the product of choice for performance in a given oil.

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PRODUCT PROPERTIES

GENERAL	
Designed for use on	Heavy Petroleum Crude Oil
Flow Improver type	Suspension
Carrier/Solvent	Water
PERFORMANCE	
Maximum drag reduction	More than 80 % depending on pipeline / crude conditions
Typical concentration	5 to 50 ppm
TYPICAL PERFORMANCE	
Color	Blue
Density	8.0 lbs/gal (0.96 g/cm ³)
Flash Point	Not applicable
Viscosity	450 cP @ 511s ⁻¹ (Non-Newtonian)
Freezing Point	32°F (0°C)
Boiling Point	212°F (100°C)
Vapor Pressure	0.95 lb/in ² (24 mm Hg @ 25°C)
HANDLING	
Operating range	32°F to 120°F (0°C to 48.9°C)
Product stability	Stable suspension Intermittent agitation recommended
Pressure	No nitrogen or pressurized vessels required
Heating	Climate control environment available
INJECTION EQUIPMENT	
Pumps	Various designs available for different injection range and environments
Range	5 to 2,500 gal/day (20 to 9,500 L/day)
Flow meter	Mass (Coriolis)
Automation	Available
SAFETY AND ENVIRONMENTAL (See Material Safety Data Sheet)	
Safety	Non-hazardous, non-flammable
Health	Low toxicity. Conventional protection equipment
Environmental	Very low aquatic toxicity

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North America

Latin America

P.O. Box 2197

Houston

TX 77252-2197, USA

Tel: +1.832.486.2834

+1.800.897.2774 (USA Toll Free)

Fax: +1.832.486.2881

Europe, Middle East, Africa and Asia Pacific

Romeinsesteenweg 468

B-1853 Strombeek Bever

Brussels

Belgium

Tel: +32.2.263.0520

Fax: +32.2.267.5176

Russia and CIS

Gasheka str., 7

Ducat Place II, Office #400

123056, Moscow, Russia

Tel: +7.095.785.2859

Fax: +7.095.785.2803