LiquidPower™ FLOW IMPROVERS

PRODUCT DATASHEET

RP™ II

For Refined Products

Background

RP™ II Flow Improver is a high performing product for refined products pipelines. With its improved heat stability, specially designed polymer and superior performance, RP™ II Flow Improver is the answer to your refined products pipeline needs.

Characteristics

RP™ II Flow Improver's rapid dispersion and dissolution characteristics and the high efficiency of its polymer, make it the most effective flow improver for refined products to date.

Benefits

Great performance

- **Greater than 80% drag reduction**

Superior technology

- **Less polymer is required to achieve a given performance**
- **Lower injection rates than other drag reducers**
- **Even faster dissolution in cold fuels than other drag reducers**
- **Reduces internal corrosion rate by 40%**

Proven compatibility with refined products

- **Non-aqueous base**
- **Extensively tested, including ASTM engine testing**

Improved handling

- **Superior handling qualities**
- **Non-hazardous waste material**

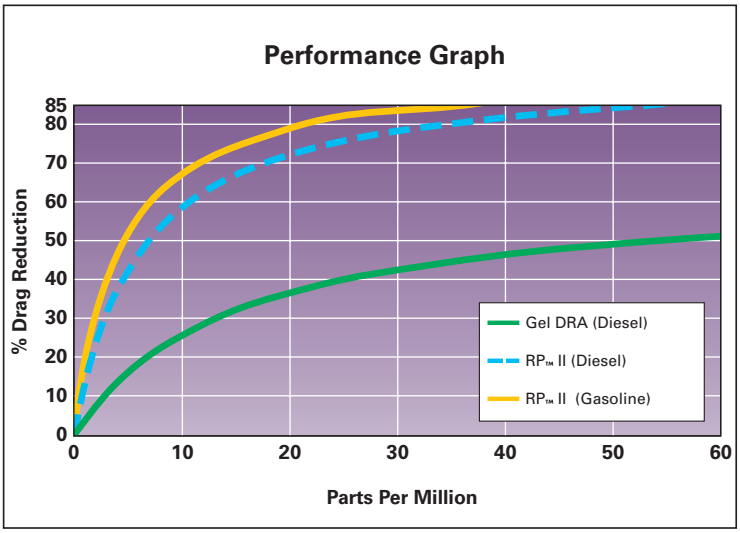
This means less total polymer is required to achieve a given performance in your pipeline. By adding just a few parts per million of RP™ II Flow Improver, more than 80% drag reduction can be achieved. The graph below shows the expected performance of RP™ II Flow Improver in gasoline and diesel.

The re-engineered polymer in RP™ II Flow Improver is suspended in a non-aqueous base. It does not contain inorganic components, surfactants or other elements that could be harmful to refined products. Extensive field and ASTM testing have proven that RP™ II Flow Improver has no affect on refined products' quality at the accepted polymer loading level. Reports of the tests are available through a CSPI Representative.

Handling

RP™ II Flow Improver is easy to handle. Its low viscosity allows it to flow readily. It is also safe to handle and environmentally friendly. The flash point is higher than 175°F / 79°C and is categorized as "non-hazardous" per U.S.A. Environmental Protection Agency (EPA) regulations.

See back page for product properties



Contact us at www.LiquidPower.com

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RP™ II

PRODUCT PROPERTIES

GENERAL	
Designed for use on	Refined hydrocarbon liquids
Flow Improver type	Suspension
Carrier/Solvent	Primary alkyl alcohol

PERFORMANCE	
Maximum drag reduction	Greater than 80%
Typical concentration	5 to 50 ppm

TYPICAL PROPERTIES	
Color	White
Density	0.87 g/cc (7.3 lbs/gal)
Flash Point	>175ºF (79ºC)
Viscosity	170 cP @ 511s^{-1} (Non-Newtonian)
Freezing Point	-60ºF (-51ºC)
Boiling Point	365ºF (185ºC)
Vapor Pressure	0.02 psi @ 100ºF

HANDLING	
Operating range	-40ºF to 100ºF (-40ºC to 37.8ºC)
Product stability	Very stable suspension Intermittent agitation recommended
Heating	Not required

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	Low hazard Combustible, non-flammable liquid
Health	Low toxicity. Conventional protection equipment
Environmental	Non-hazardous waste per Environmental Protection Agency

EFFECT ON REFINED PRODUCTS	
Compatibility	All components soluble in hydrocarbons. ASTM tests show no effect on fuel quality. EPA registered (USA)
Engine tests	Ford 2.3 liter engine. No deposit increase observable at 60 ppm RP™ II Flow Improver. GM 5.7 liter engine. No adverse impact to tendency of gasoline to form valve stem sticking deposits.

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