

RP™ II

For Refined Products

Background

RP™ II Flow Improver is a high-performing product for refined products pipelines within the LiquidPower Specialty Products Inc. (LSPi) product portfolio. 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.

The formulation of RP™ II 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 nonaqueous base. Extensive field and ASTM testing have proven that RP™ II Flow Improver has no effect on refined products' quality at the accepted polymer loading level. Reports of these tests are available through a LSPi representative.

Handling

RP™ II Flow Improver is easy to handle, store and clean up. Its low viscosity allows it to flow readily.

Benefits

Great Performance:

- Greater than 80% drag reduction

Superior Technology:

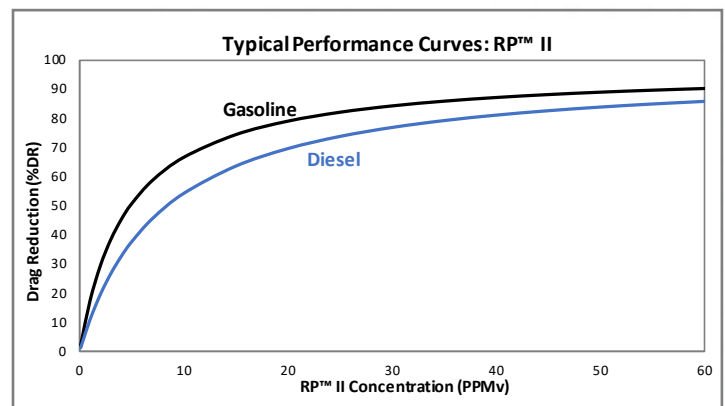
- Less polymer required to achieve a given performance
- Lower injection rates than other drag reducers
- Faster dissolution in cold fuels than other drag reducers

Proven Compatibility with Refined Products:

- Nonaqueous base
- Extensively tested, including ASTM engine testing

Improved Handling:

- Superior handling qualities



These performance curves demonstrate the typical performance of RP™ II Flow Improver. Actual performance may vary depending on pipeline and fluid conditions.

GENERAL

Application	Refined hydrocarbon liquids
Flow Improver Type	Suspension
Carrier	Primary alkyl alcohol

PERFORMANCE

Maximum Drag Reduction	Greater than 80%
Typical Concentration	5 to 50 ppm

TYPICAL PROPERTIES

Color	White
Density	7.3 lbs/gal (0.88 g/cm ³)
Flash Point	181 °F (83 °C)
Viscosity	175 cP @ 511s ⁻¹ (Non-Newtonian) @ 77 °F/25 °C
Freezing Point	<-40 °F (<-40 °C)
Boiling Point	365 °F (185 °C)
Vapor Pressure	0.02 psia (1.0 mm Hg) @ 100 °F/37.8 °C

HANDLING

Operating Range	-40 °F to 95 °F (-40 °C to 35 °C)
Product Stability	Stable suspension Intermittent agitation required
Pressure and Heating	No nitrogen or pressurized vessels required Heating tracing and heating required under freezing conditions 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

Reference country specific Safety Data Sheet for local requirements

Safety & Health (per U.S. OSHA)	Combustible liquid. This material is classified as hazardous under the criteria of the U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200.
Environmental	This material is classified as an environmental hazard per GHS. Uncontaminated waste product is non-hazardous as defined by the U.S. EPA RCRA criteria.

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