

# LiquidPower™

**FLOW IMPROVERS**





## ***Improve the Profitability of Your Pipeline***

ConocoPhillips Specialty Products Inc. (CSPI) is the global leader in the science of drag reduction. We work with companies in more than 35 countries to solve pipeline flow needs. Our polymer technology, pioneered in the 1970s in our research laboratories, and first proven in 1979 with the Trans-Alaska Pipeline System, is continually evolving.

We treat more than 12 million barrels of hydrocarbon liquids a day. Whether your need is to reduce pipeline operating costs, increase throughput, decrease pipeline pressure, shut down intermediate pump stations, improve daily export rates, or even optimize energy costs, CSPI can help.

Our range of LiquidPower™ Flow Improvers provide outstanding benefits for crude, refined products and non-potable water pipeline operations.

Our products are designed to work in different environments, terrains, pipelines and oil conditions.



LiquidPower™ Flow Improvers are easy to handle, nonhazardous, nonflammable and have no effect on hydrocarbon processing.

ConocoPhillips offers a total package solution that includes product and the right injection equipment to meet the needs of companies that demand high performance and maximum flexibility – and ensures outstanding time and cost savings.

*Maximize... flow value  
throughput ... Potential*

### ***Why Choose LiquidPower™ Flow Improvers?***

- Outstanding Performance
- Superior Customer Service
- Innovative Research and Technology
- Engineering Expertise
- Exceptional Quality



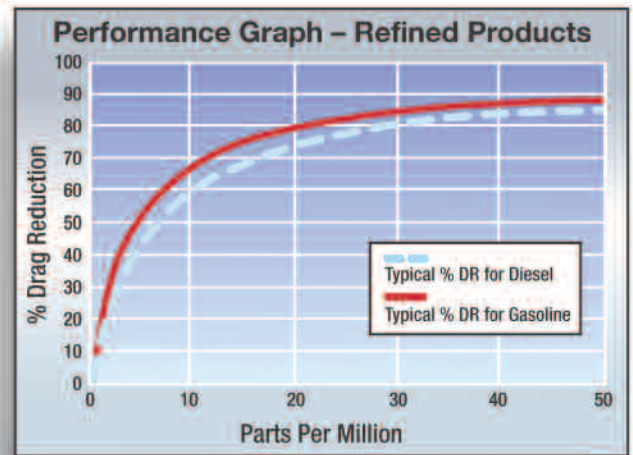
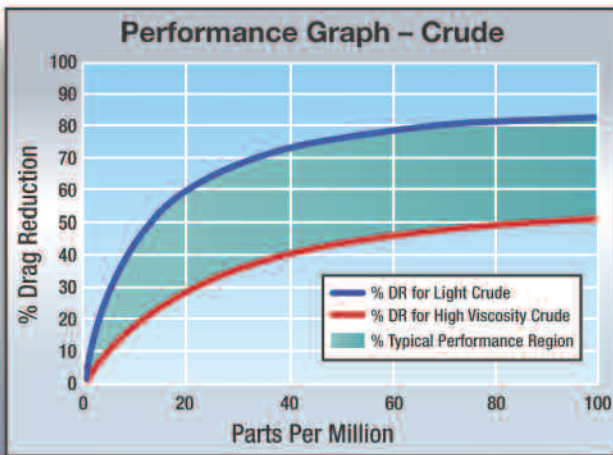
# Elevating Flow Improver Technology to Unprecedented Levels

## How Do LiquidPower™ Flow Improvers Work?

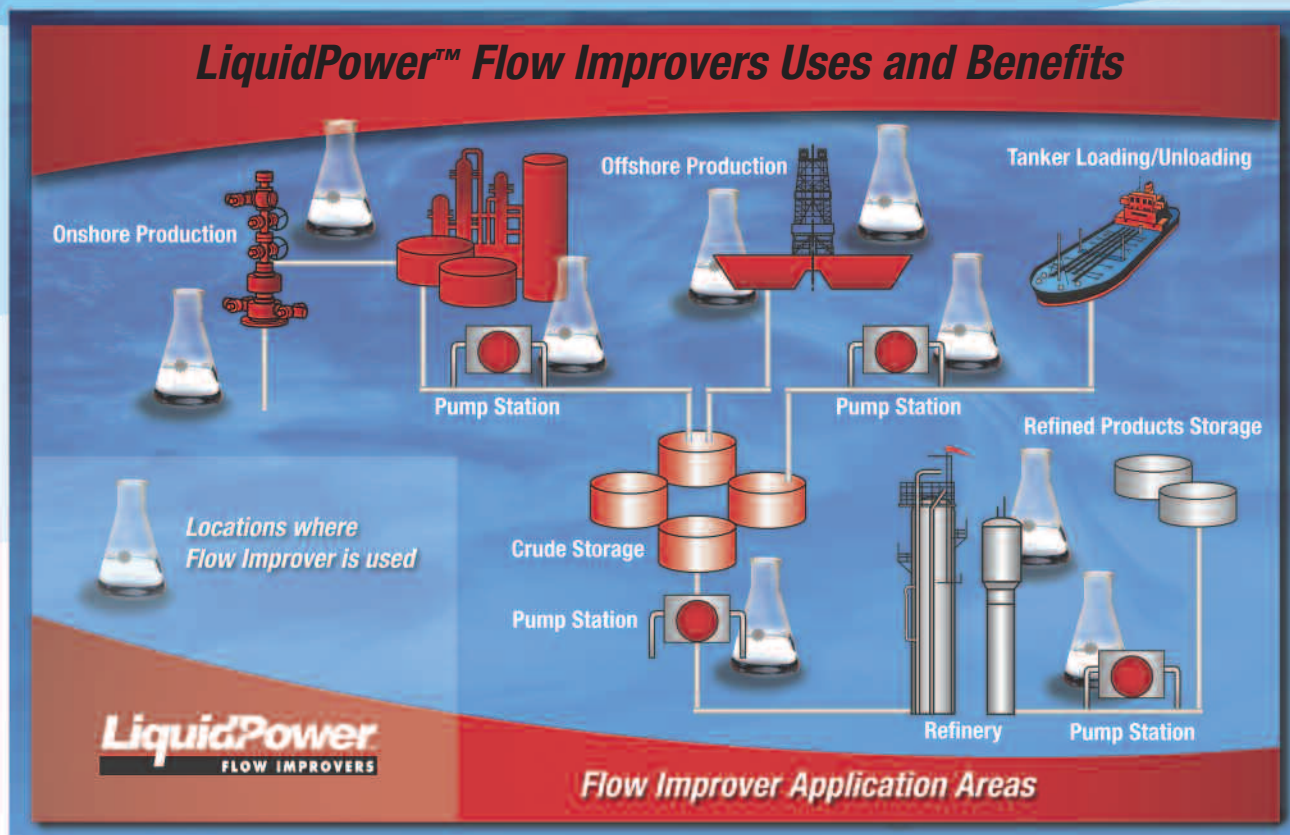
LiquidPower™ Flow Improvers are suspension drag reducers that are injected into a pipeline in very low concentrations (parts per million). Drag reducers only perform in turbulent flow regimes, characterized by the random, irregular motion of fluid particles at transverse directions to the main flow. Drag reducers, such as LiquidPower™ Flow Improvers, consist of long-chain hydrocarbon polymers that act as buffers along the pipe wall to decrease the amount of energy lost in turbulence formation.

## Pipeline Performance Increase – What Can You Expect to See?

LiquidPower™ Flow Improvers can provide more than 80 percent drag reduction depending on the condition of the pipeline and the properties of the fluid being transported. To determine how effective it can be in your pipeline, please consult with your area CSPI representative.

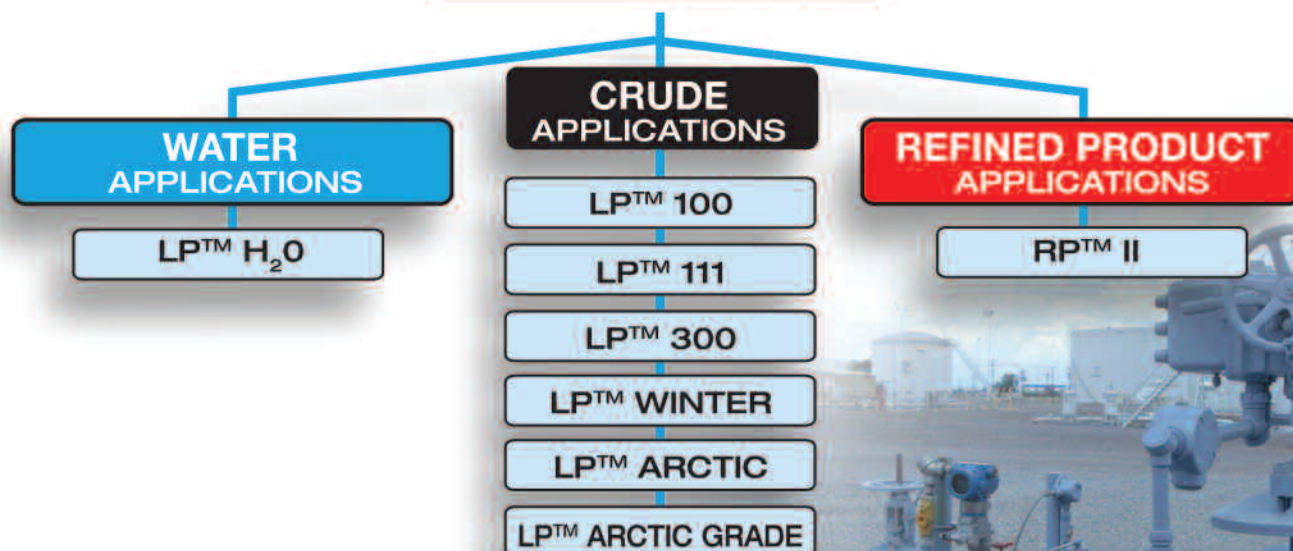


# Levels of Performance



## The LiquidPower™ Flow Improver Portfolio

CSPI offers a total package solution. We work with your company to analyze your pipeline needs and your company's objectives. Depending on the pipeline, liquid hydrocarbon conditions, flow dynamics, terrain, climate and logistics, we will find a product and a solution to improve your day-to-day operations.



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**Or, contact us through the Web at**  
***www.LiquidPower.com***

## ***Safety***

The CSPI team has a proven safety and environmental track record. We operate in the safest ways possible in all of our locations. Our field personnel have not had a recordable injury in the field since 2000, and we have not had any lost-workday cases in the past decade. We have never experienced any OSHA citations.

CSPI's manufacturing facility in Bryan, Texas, was honored with the U.S. Occupational Safety and Health Administration's Voluntary Protection Program Star Status. Approval into the VPP is OSHA's official recognition of the outstanding efforts of employers and employees who have achieved exemplary occupational safety and health.

Our commitment to operate safely transcends into the customer relationship by ensuring our products, equipment and people are all functioning in the safest ways possible.



## ***Logistics***

CSPI, with its extensive distribution system, can efficiently and effectively deliver products to our customers worldwide. Our managed inventories, monitoring of tank levels and scheduled deliveries have an exceptional on-time record. Customers do not have to place an order themselves; our team of dedicated logistic personnel can assist customers to create a schedule that suits their needs. There are no worries when product usage is above forecast. Working closely with our manufacturing facility, our account specialists will ensure you have the product you need when you need it.

We also have a transportation fleet dedicated to flow improver deliveries in North America. Sentinel Transportation, our subsidiary trucking company, has an excellent safety record. Drivers can, when necessary, perform preventive maintenance on skids and report back on any skid or product issues they encounter during deliveries.

CSPI has trans-loading bases in every major region around the world to expedite the product delivery process. Our bases in Norway, Denmark, Spain, the U.K., Singapore and other countries receive and ship product to our customers worldwide.



## ***Manufacturing***

CSPI's dedicated LiquidPower™ Flow Improver manufacturing plant, located in Bryan, Texas, is capable of shipping product to customers 24 hours a day, seven days a week. The plant staff is involved with the customer relationship through continuous communication with CSPI customer focus teams to understand and effectively plan and schedule production, especially when customer needs change.

Our products are produced using top quality materials and are made to offer optimal performance, every batch, every time. We guarantee a consistent performance when using any of the products in our product line by offering our customers a product warranty in our contracts. Consistency is monitored in a number of ways to ensure equally superior product batches throughout the contract term. In order to provide consistent performance, the effectiveness of our active ingredient is carefully controlled and tested. The amount of polymer loading also is carefully monitored and controlled in the suspension batching process.



## ***Engineering***

CSPI leads the industry in engineering expertise. With a group of professionals committed to the continuous improvement of injection equipment technology, our team uses multiple fabricators and maintains equipment inventory for standard equipment turnout time. Injection skid reliability is of utmost importance. Our uptime service record is unparalleled in the industry. CSPI's engineering team is dedicated to keeping our equipment running continuously for optimal performance and reliability.

The engineering staff maintains technical knowledge with its modeling and field-testing capabilities. Thousands of application predictions have been performed. Crude application predictions are found to be +/-20 percent accurate, while refined products applications are +/-10 percent accurate. CSPI's engineers work to optimize the complete pipeline system, creating alternatives to maximize revenue and minimize costs.

In the U.S., field service representatives (FSRs) are strategically located to offer around-the-clock response to customers. FSRs provide customers with at least two preventative maintenance visits per year, in addition to committed quarterly meetings to discuss skid reliability. Through our European and CIS offices (located in Brussels, Belgium and Moscow, Russia, respectively) and our vast contacts of distributors and agents, our team of customer support personnel is able to consult with customers around the world to maintain optimum performance and ensure reliable flow improver injection.



## ***Research & Development***

Since inventing and launching the first commercial drag reducer for crude oil pipelines in 1979, CSPI has been the leader in flow improver technology. With a steadfast eye to the future, CSPI dedicates equal amounts of time to both researching fundamental drag reduction and improving existing technology.

CSPI has proven expertise in drag reduction theory and applications, as well as polymer and suspension chemistry and refinery impact. State-of-the-art flow loops and test equipment are being used to study the effectiveness of drag reduction under actual pipeline conditions and configurations. Our knowledge also encompasses the synthesis of ultra-high molecular weight polymers, analysis of fuels and oils for the presence of flow improvers and quality testing of flow improving products.

The research and development (R&D) team, located in Ponca City, Okla., has more than 200 years of combined drag reduction experience. Our research facilities include 10 laboratories, pilot plant facilities, a semi-works manufacturing unit and three test injection skids.



## *Quality*

At ConocoPhillips Specialty Products Inc. (CSPI), we recognize the competitive advantage of delivering Flow Improver Solutions with superior quality. We aggressively optimize our quality system in a way that capitalizes on the innovation of our people and ensures we implement our business strategies and operational processes as planned.

The CSPI quality system encompasses our entire business and is focused on delivering reliable and consistent pipeline operations. CSPI is ISO 9001:2000 certified since 1996, covering design, manufacturing, marketing, distribution and service of our flow improver solutions.

Procedures and records are documented and controlled, covering all internal operations from design to post-delivery activities. Processes are defined for identifying and meeting customer requirements and receiving feedback, as well as for designing and validating new, innovative products, services and equipment.

External quality audits, conducted by BVQi are administered once a year at our offices in Houston, Texas, and every other year at our Brussels, Belgium office, our Bryan, Texas, manufacturing facility and our research and development facility in Ponca City, Okla. Internal quality audits also are conducted each year at each CSPI location.

CSPI also administers audits and quality inspections of all of our subcontractors, including but not limited to trans-loading bases, equipment fabricators and truck driving companies.

Root-cause analyses and corrective actions are taken for elements not meeting expectations and preventative measures are completed to ensure our plans are implemented effectively.





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