

# HYDROLENE™

The Road To Improved Asphalt Economics & Longevity



  
**HOLLYFRONTIER™**  
SPECIALTY PRODUCTS





NEVER BEFORE HAS SUCH A SMALL INVESTMENT PAID  
SUCH REWARDING DIVIDENDS TO ASPHALT USERS.

# HYDROLENE™

PERFORMANCE PRODUCTS

HollyFrontier Hydrolene™ Performance Products are the easy, economical means to breathe new life and performance into your asphalt applications. They rejuvenate, repair and extend the life of asphalt. They are the leading oils for optimizing asphalt performance. Available in various viscosities, molecular weights, brittle points and aromatic content, Hydrolene is ready to be custom blended to produce the best combination of properties for your applications. You will find Hydrolene an outstanding platform for cost-effective product enhancement.

## HYDROLENE EMPOWERS YOU WITH:

- Improved fatigue performance
- Improved polymer-asphalt compatibility in paving and roofing
- Superior low temperature properties
- Expanded flexibility by improving the Useful Temperature Index (UTI)
- Ease of manufacturing and workability of the asphalt mix
- Improved balance of the asphaltene versus maltene content of the asphalt
- Optimized performance in Hot-Mix Asphalt and Cold-In-Place Recycling
- Enhanced rejuvenation of aged asphalts

HollyFrontier's 75 years of working closely with the asphalt industry produces uniquely special dividends for you. Our industry specialists speak your language, understand the challenges you face and help you bring greater value to your customers.



# HYDROLENE™ PUTS YOU ON THE ROAD TO BETTER ASPHALT PERFORMANCE.

Here's Why Hydrolene Products Deliver Better Results.

## 1. Range of Chemistry

The Hydrolene H Series has high aromatic content which gives you excellent initial softening, processing and solvency characteristics ideal for restoring critical petroleum fractions to Reclaimed Asphalt Pavement (RAP) and for improving compatibility of asphalt with other additives in the pavement. Hydrolene's SP Series provides low aromatic content and is the best modifier on the market for making asphalt that can endure extreme low temperatures in the coldest regions.

## 2. Broad Range of Viscosities

Hydrolene offers good fluid properties for early compaction and coating, as well as for superior restoration of high viscosity aged asphalt.

## 3. High Temperature Stability

Measured by the Rolling Thin-Film Oven Test (RTFO), Hydrolene minimizes smoking in the mixing process and maintains high temperature properties of the asphalt binder after RTFO aging.

## 4. Low Temperature Enhancement

A relatively small amount of Hydrolene can economically custom blend almost any low temperature grade of asphalt. It can also help expand the total temperature range of your Polymer Modified Asphalt (PMA).

## 5. Relatively High Density

Provides a lower cost per pound than comparable lower density oils.

## 6. Consistent Polymer-Modified Asphalt Performance

Hydrolene oils have outstanding solvency characteristics to ensure compatibility between the asphalt and the polymer. This gives you the flexibility to use asphalts which are refined from a wider variety of crude oils. Hydrolene is a standard component in PMA for low temperature enhancements.

## 7. Consistent Quality

HollyFrontier Hydrolene oils are refined to meet demanding specifications to give you consistent, high performance. They are refined in Tulsa, just 30 miles from the Cushing, OK pipeline hub.

# HYDRO



Before:  
Reduction in low temperature performance due to temperature susceptibility of base asphalt without rejuvenation.

The H-Series oils are aromatic and labeled as carcinogenic.  
Material Safety Data Sheets are available.





## Hydrolene Produces Tangible and Lasting Benefits in Hot-Mix Asphalt Rejuvenation or Cold-In-Place Recycling.

### Improved Hot-Mix Asphalt

Hydrolene gives you the versatility to work in various types of applications. It restores the original level of aromatic resins that have been lost in Reclaimed Asphalt Pavement (RAP) due to oxidative aging and re-establishes the binder's characteristics back to virgin asphalt levels. Without the aromaticity restored, a high RAP mix design will exhibit premature rutting due to continued age softening of the RAP binder. Hydrolene's aromaticity also improves the low temperature Performance Grade (PG), reduces the high temperature PG, increases crack resistance in the HMA, and improves the workability/compaction of the RAP mix design. Hydrolene both protects and facilitates long term performance.

### Warm-Mix Asphalt

Hydrolene is compatible with Warm-Mix foaming and additive packages. It does not adversely affect these technologies.

### Cold-In-Place Recycling

The high aromaticity of Hydrolene makes quick work of penetrating asphalt. Properly emulsified Hydrolene, either with asphalt or alone, can be spread over scarified asphalt for the immediate softening and flow characteristics that improve recycling performance. Hydrolene applied to new surfaces can slow the rate of deterioration and increase their lifespan.

### Roofing

Hydrolene in roofing applications helps achieve the desirable low temperature flexibility needed. It also contributes by increasing tack and low temperature performance in these polymer modified asphalt products.

### Green Asphalt Technology

Our Hydrolene LPH and SP Series offer a variety of viscosities to meet your Green Asphalt needs in most asphalt applications, including: Roofing, HMA, WMA, PMA and RAP.

# OLENE



With Hydrolene:  
Improved low temperature properties lead to improved pavement performance and a reduction in low temperature cracking.

According to the OSHA Hazard Communication Standard.  
Compatible with all HollyFrontier products.



# HOLLYFRONTIER SUPPORTS HYDROLENE™ PERFORMANCE PRODUCTS WITH THESE OUTSTANDING SERVICES.

## HollyFrontier's Technical Assistance

To help customers make the best use of HollyFrontier Hydrolene Performance Products in all applications, our technical specialists are available to answer your questions and provide guidance. This is a resource that is not readily available from commodity suppliers.

## Certified ISO 9001

HollyFrontier oils are produced in strict compliance with statistical process control managed through the latest version of the ISO 9001 Quality Management System to ensure consistent quality.

## HollyFrontier REACH Registration

In accordance with the European Union (EU) REACH legislation, HollyFrontier, as a "non-EU manufacturer", has designated The Acta Group EU, Ltd (Acta EU) as our Only Representative (OR). Acta EU will retain records of the annual volume of substances imported by customers of HollyFrontier into the EU, and

will ensure, where applicable, that the latest hazard communication (i.e., Safety Data Sheet) on these substances is supplied.

## Logistics

HollyFrontier Specialty Products is proud to offer one of the most efficient and reliable transportation systems in the industry. The core components of the program include safety, information availability, equipment and service. Our fleet of 1100 rail cars operates out of our centrally located refinery and our strategically located terminals around the country, ensuring prompt bulk delivery.

Our motor carriers operate at an impressive level of on-time delivery, and their performance is monitored through HollyFrontier's "Carrier of the Year" Program. HollyFrontier also offers convenient access to international shipments by sea, as well as shipments using Flexibag and ISOTANK.



### **Electronic Information System (EIS)**

The technology at the heart of HollyFrontier's transportation system enables accuracy, speed, current information, and integration with your system.

### **HollyFrontier's Rail Tracking Service**

Our railcar tracking, performance measurement and management system provides daily reports on car location and forecasted arrival dates to help alleviate the uncertainties inherent in railcar shipment. Daily reports contain standard railroad CLM reporting.

### **HollyFrontier Rate Tracker Service**

HollyFrontier's automated freight rating system ensures freight cost accuracy on invoices and enables prompt return of rate requests.

### **Electronic Data Interchange (EDI)**

HollyFrontier sends all bill of lading information to the railroads via EDI, ensuring accuracy and timeliness in processing.



### **Transportation Service**

HollyFrontier's integrated system may offer a transportation package that best meets your needs. If you decide you would like to have HollyFrontier SP coordinate your transportation requirements, there may be an attractive economy of scale because we combine our inbound and outbound requirements for greater negotiating power. All this translates into added reliability and convenience, as well as savings for you.

## **WE'RE HERE TO HELP.**

**For immediate and helpful answers to your technical questions,  
call 1-800-TECH-REP (832-4737).**

**For Marketing, call 1-800-395-2786 or visit us on the web at  
[www.hollyfrontierlsp.com](http://www.hollyfrontierlsp.com)**



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