

# Vinsol<sup>®</sup> Resin

High Performance Solutions  
for High Traffic Surfaces





# Vinsol<sup>®</sup> Resin

A Natural Solution

**Vinsol<sup>®</sup> resin** is a unique natural resin extracted from the stumps of Southern pines, primarily *pinus palustris*, and processed and refined exclusively by Pinova, Inc. at our Brunswick, Georgia, U.S.A. production facility.

Its chemical composition and physical properties make it ideal for many construction and industrial applications, including uses as:

- An air entraining agent in mortars and concrete
- An emulsifier for anionic, slow setting asphalt (bitumen) emulsions
- An additive in adhesives, sealants, inks and coatings

## Air Entraining Agent

For over 50 years, **Vinsol® resin** has been the gold standard by which air entraining agents for concrete have been measured. Using Vinsol® resin as an air entraining agent results in benefits such as:

- IMPROVED STRENGTH, WORKABILITY AND FREEZE-THAW RESISTANCE
- IMPROVED GRINDING DURING THE MANUFACTURE OF CEMENT
- IMPROVED PLASTICITY, WATER RETENTION AND COHESIVENESS OF MORTAR
- EFFECTIVENESS AT LOW USAGE RATES



# Vinsol® Resin

A **Trusted** Solution

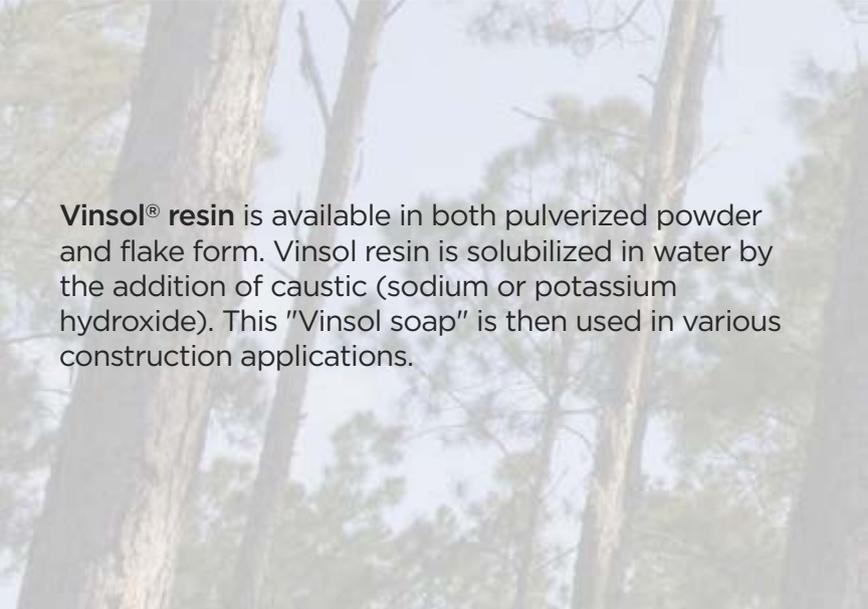
## Asphalt Emulsifier

Anionic, slow-setting asphalt (bitumen) emulsions are used globally in industrial applications such as:

- ROAD, TENNIS COURT, AND PARKING LOT PAVING
- FOUNDATION, ROOF, AND SIDING WATER-PROOFING AND SEALING
- PIPE AND ANTI-CORROSIVE COATINGS

In these applications, the use of **Vinsol® resin** offers significant advantages in:

- UNIFORM PARTICLE SIZE IN THE EMULSION
- ION TOLERANCE IN HARD WATER
- EVEN BREAKS IN THE EMULSION
- LONG-TERM STABILITY (IN THE CAN)
- WORKABILITY
- SMOOTHNESS AND DURABILITY OF FINISH



**Vinsol® resin** is available in both pulverized powder and flake form. Vinsol resin is solubilized in water by the addition of caustic (sodium or potassium hydroxide). This "Vinsol soap" is then used in various construction applications.



**Pinova commissioned an independent study** to quantify the rate of availability of harvestable pine stumps—Pinova’s primary feedstock—in six states of the Southeast U.S. The goal was to use the data to

estimate the sustainable rate of harvest of natural stumps and quantify expectations for their future availability. When we compared internal consumption data to the research results on the rate of production of harvestable stumpwood, we found that our consumption of the region’s pine stumpwood constituted less than

10% of the total annual available stumps generated each year by the forest products industry.

Given the vast amount of unused stumps readily accessible to us, we are assured of significant feedstock reserves far into the future. To ensure that

we are consistently able to provide our customers with high value products, we have nurtured long-term relationships with well-established suppliers and are expanding our affiliations with new ones. We added a senior executive with responsibility for managing strategic raw materials’ sourcing and identifying innovations that maximize their availability.

We encourage sustainable forestry practices by our pine stumpwood suppliers and review main suppliers’ reporting on labor and other relevant issues to ensure their compliance with regulations and generally-accepted ethical principles.

**Our consumption of pine stumpwood in the Southeast U.S. constitutes less than 10% of the available total annually. We are assured of significant feedstock reserves far into the future.**

**For Pinova Inc., manufacturing products entirely from natural and renewable sources is the business norm.**

# Vinsol® XT Resin

An **Extended** Solution

**Vinsol® XT** asphalt emulsifier is a dark, high melting, thermoplastic resin designed specifically for cost sensitive SS-type asphalt applications.

**Vinsol® XT** is suitable for use under the most demanding conditions where good emulsion stability and viscosity are a requirement, particularly in combination with good cement mix test performance. Its main application is as an asphalt emulsifier for anionic, slow setting emulsions for paving, surfacing, and sealing applications.



# Vinsol® NVX Resinate

A **Convenient** Solution

For enhanced convenience as an air entraining agent in dry mortar and cement mixes, Pinova offers **Vinsol® NVX resinate**. This pre-neutralized resinate is the product of



Vinsol® resin that has been prepared in an aqueous solution of caustic soda and then processed in a spray dryer, resulting in a light tan, free flowing powder, which is easily dissolved directly in water.

This physical form translates into benefits including:

- OMISSION OF THE NEUTRALIZATION OPERATION
- ELIMINATING THE NEED FOR EQUIPMENT TO PREPARE AND STORE NEUTRALIZED VINSOL® RESIN SOLUTION

# Vinsol® Resin

Application Guide

## Vinsol® Resin

- Air entraining agent in concrete
- Asphalt emulsifier for road paving, roofing, and waterproofing



## Vinsol® XT Resin

- Asphalt emulsifier for paving, surfacing and sealing applications



## Vinsol® NVX Resinate

- Air entraining agent in dry-mix mortars





**Sustainability | Innovation | Quality | Service**

We deliver state-of-the-art specialty ingredients for many of the world's most essential industries and best-known brands.

For over a century, we have provided premium performance ingredients to meet the standards of consumers worldwide. Customers in over 100 countries use our high quality materials to ensure their products perform consistently in a wide variety of markets, including food, beverage and personal care applications.

We are dedicated to sustainability, innovation, enduring quality, and customer service. Our customers trust us to deliver consistent products that meet regulatory and specification requirements. Our employees understand that attention to detail at every stage of the manufacturing process, from raw material procurement to manufacturing and packaging, contributes to a high-quality end product.