KRATON™

Visibly Safer Roads

High-Performance Thermoplastic Road Marking Solutions

ADVANCED PRODUCTS FOR DIVERSE SPECIFICATIONS

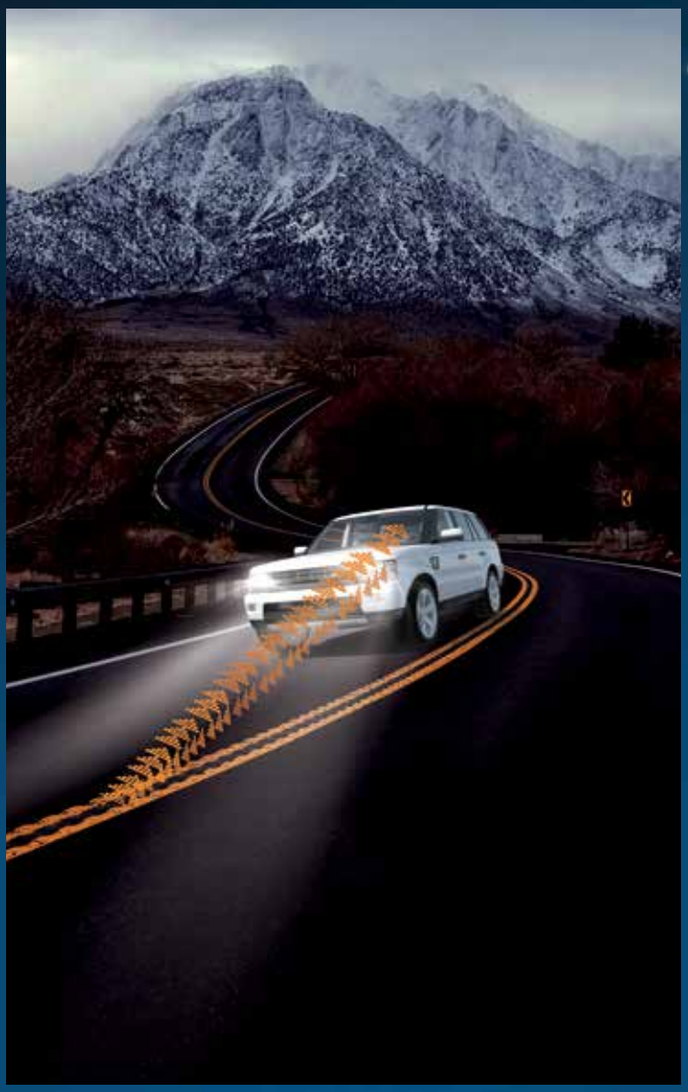
Kraton offers four types of binders that maximize the benefits of thermoplastic road markings.

ROSIN ESTER PAVEMENT MARKING BINDERS

100% solids binders recommended for use in spray and extrusion applied thermoplastic striping applications. These rosin esters have excellent compatibility and stability, giving formulators the flexibility to tailor application properties to the applicator's needs. Kraton also offers rosin ester options featuring excellent color stability at elevated temperatures, outstanding adhesion performance and low odor.

MODIFIED ROSIN ESTER GLASS BEAD ADHESION BINDERS

100% solids binders recommended for use in spray and extrusion applied thermoplastic striping, preformed thermoplastic marking or thermoplastic tape applications. These modified rosin esters substantially increase road marking performance through improved adhesion to intermix and drop-on glass beads, non-skid aggregates and pavement. Depending on your needs, there are modified rosin ester options with good initial and long-term retro-reflectivity, excellent color stability at elevated temperatures and low melt viscosity.



Headlights reflect on glass beads to improve the driver's long-range vision.

HOT MELT POLYAMIDE FLEXIBLE BINDERS

100% solids binders recommended for use in preformed thermoplastic marking or thermoplastic tape applications. These hot melt polyamides give the excellent low temperature flexibility needed in preformed systems. We also offer hot melt polyamides featuring long open time, high green strength and good yellowing resistance.

STYRENIC BLOCK COPOLYMER ELASTOMERS

Enhance the functional life of formulated thermoplastic road markings by adding Kraton polymers. Our unsaturated and hydrogenated styrenic block copolymers improve the formulation's mechanical properties, distinctly reduce erosion under numerous wheel passes and improve adhesion to glass beads for superior retro-reflection.

OUR ROSIN-BASED PRODUCTS ARE MADE FROM BIO-BASED RAW MATERIALS DERIVED FROM PINE TREES.

RSMA Member and ATSSA member

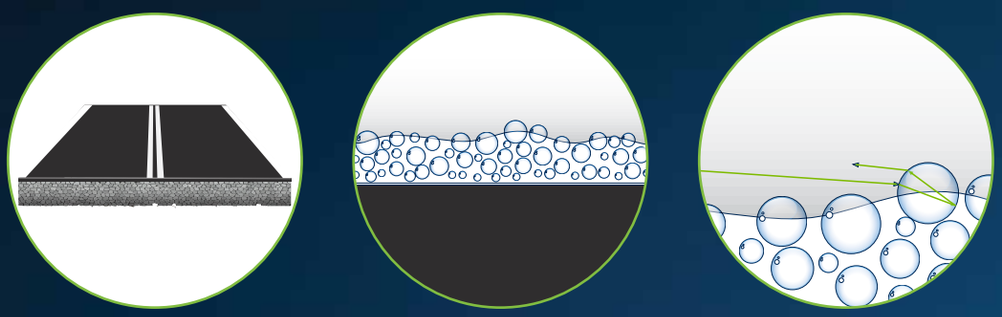
ENHANCED RETRO-REFLECTIVITY IMPROVES ROAD SAFETY

According to a prominent transportation institute[1], an average crash reduction of 21% can be attributed to better pavement markings. They help avoid run-off-the-road and opposite-direction accidents that result from driving at night. To see clearly, a 45-year-old driver needs four times as much light as a 19-year-old, so bright road markings are essential to traffic safety.

Thermoplastic road markings made from Kraton materials are proven to enhance driver visibility through better retro-reflectivity, delivering:

- Brighter illumination, day and night.
- Increased visibility under extreme, wet weather conditions.
- Higher durability on heavily-trafficked asphalt roads.

Improved road markings are among the most effective means of upgrading the road environment. They require a low level of capital investment to foster safety gains, reduce congestion, lower travel times and reduce emissions from standing or slow moving traffic.



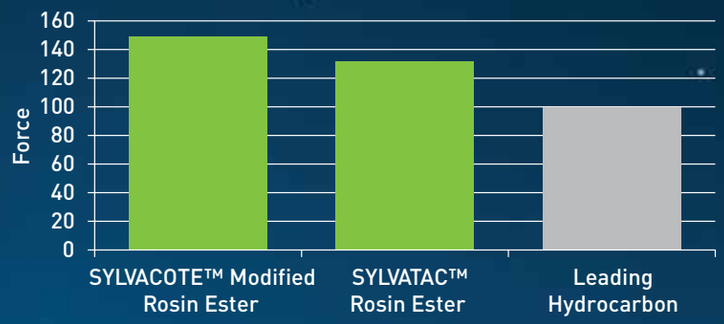
FORMULATIONS WITH OUR BINDERS:

- Reflect light effectively after the product is used for extended periods.
- Maintain color consistency throughout the striping process.
- Set exceptionally fast under most conditions, minimizing traffic disruption and personnel deployment.
- Resist deterioration from oil and gas spillage inherent in traffic flow.

SUPERIOR GLASS BEAD ADHESION INCREASES ROAD MARKING DURABILITY

Kraton's innovative technologies enable superior glass bead adhesion in thermoplastic road markings. Strong glass bead adhesion is essential for road marking durability and long-term retention of sufficient retro-reflectivity. This reduces the need to purchase and apply new road markings, while maintaining high levels of wet retro-reflectivity.

Adhesion Advantage Of Rosin Esters To Uncoated Glass Beads

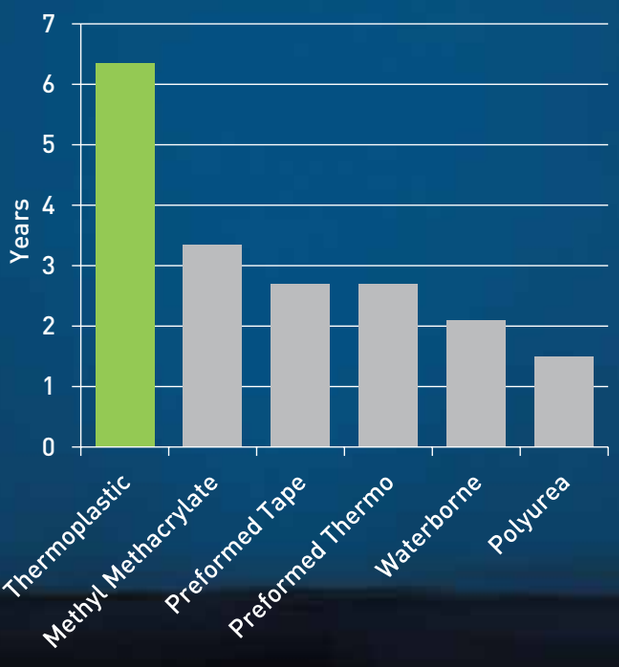


* Data generated independently by a leading glass bead manufacturer

Our binder offerings enable the formulator to deliver enhanced safety, longevity and value in terms of total, long-term costs by helping keep the drop-on and intermix beads in place longer. This extends the road marking's retro-reflectivity service life, since the lower layer retains the beads, even after erosion of the top layer from numerous wheel passages. Industry research[2] shows that thermoplastic on asphalt has a longer service life than other alternatives, and an exceptionally good life-cycle cost range.

Thermoplastics Are Cost Effective
Equivalent Uniform Annual Cost[2]

Thermoplastics Last Longer
Expected Service Life[2]



[2]GDOT 2015, Striping on Asphalt, 10,000 ADT, Service Life to 250 mcd/m2/lux

[1] The Benefits of Pavement Markings: A Renewed Perspective Based on Recent and Ongoing Research, Texas (U.S.) Transportation Institute, 2008.
[2] Developing a GDOT Pavement Marking Handbook Using Field Test Deck Evaluation and Long-Term Performance Analysis, Georgia (U.S.) Department of Transportation, 2015.

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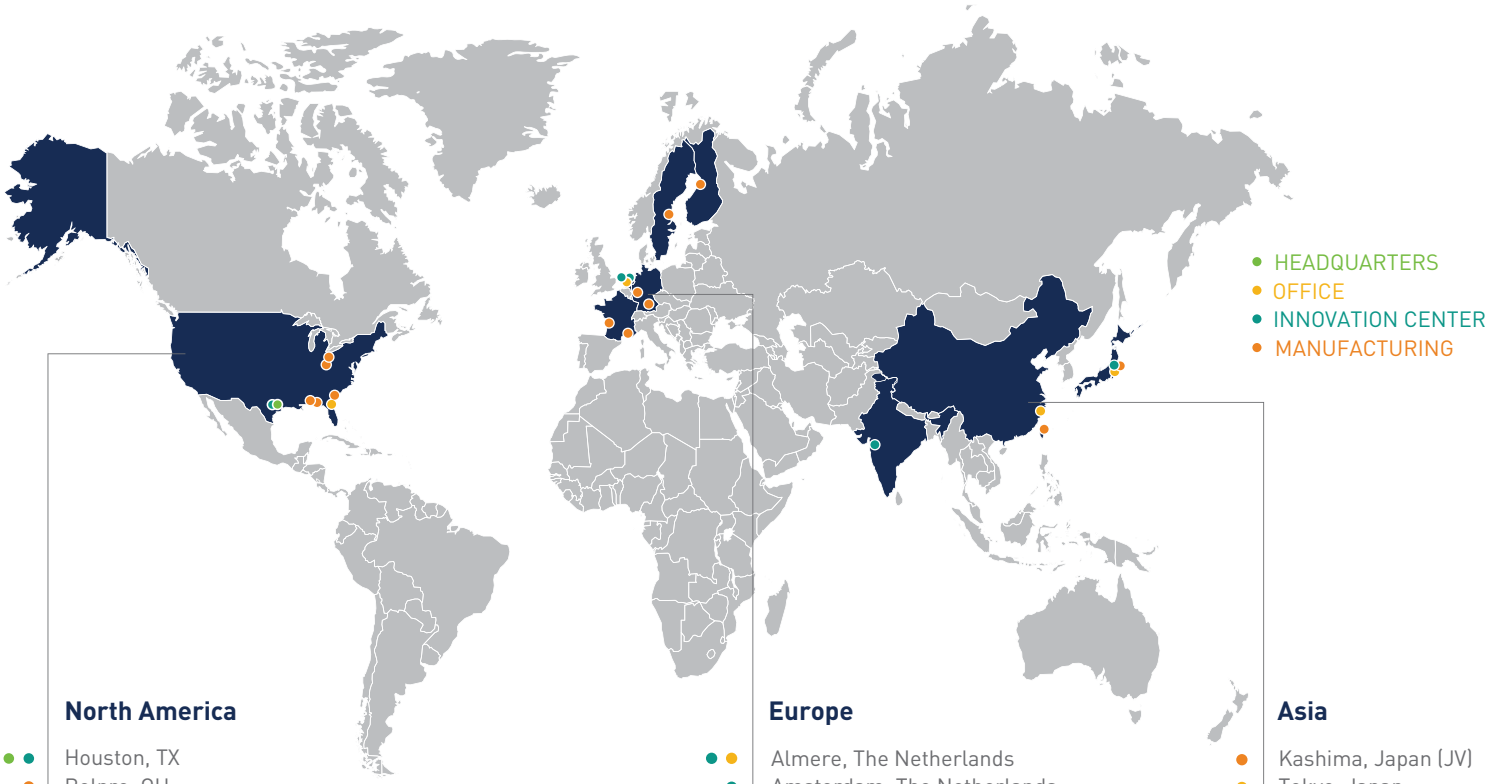
GLOBAL FOOTPRINT



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- Pensacola, FL
- Savannah, GA

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- Tokyo, Japan
- Tsukuba, Japan
- Mailiao, Taiwan (JV)
- Shanghai, China
- Mumbai, India

KRATON CORPORATION

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