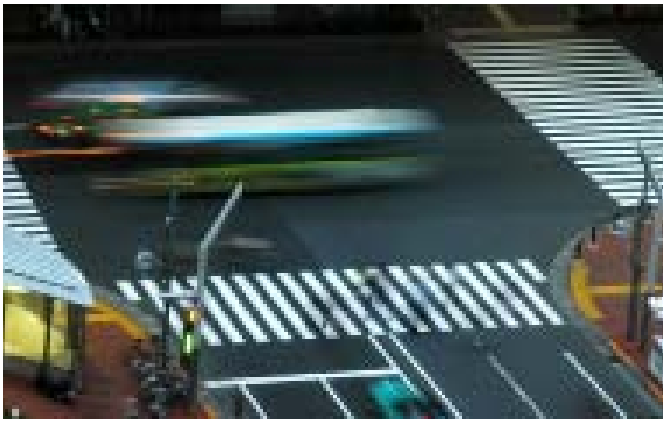
Kraton
Giving Innovators Their Edge

Kraton Performance Polymers
Improve Road Marking Paints

Kraton polymers extend the life of road marking paints to help them deliver superior performance. When added to paint binders, Kraton polymers enhance the functional life of thermoplastic road markings. Styrenic block copolymers (SBCs) improve the mechanical properties of the binder, which can increase the performance life of the road marking. The benefits of unsaturated and hydrogenated block copolymers distinctly reduce the paint erosion after numerous wheel passages and improve the adhesion to glass beads resulting in superior retro-reflections properties.



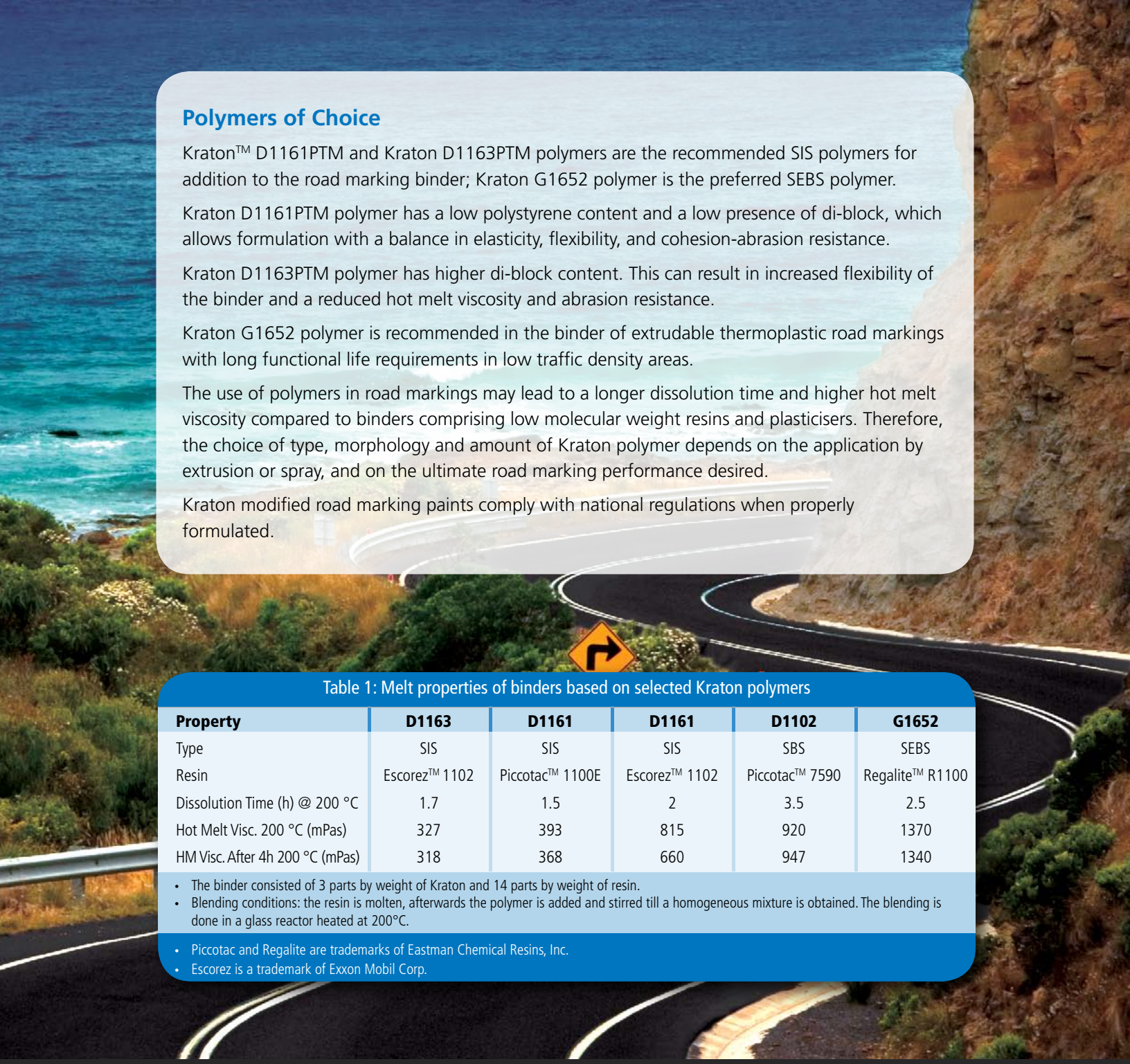
Key Benefits

- Hot melt processability
- High durability
- Elasticity at elevated temperatures
- Flexibility at low temperatures
- Binder compatibility

Key Features

- Improved abrasion
- Superior crack resistance
- Exceptional retro-reflection (UV stability)
- Balanced cohesion / adhesion
- Improved glass bead retention
- Excellent oil retention

Thermoplastic road marking paints are a mixture of glass beads, pigments and fillers that are held together by a binder. Kraton products offer unique features that cover a broad range of processing polymers and performance properties.



Polymers of Choice

Kraton™ D1161PTM and Kraton D1163PTM polymers are the recommended SIS polymers for addition to the road marking binder; Kraton G1652 polymer is the preferred SEBS polymer.

Kraton D1161PTM polymer has a low polystyrene content and a low presence of di-block, which allows formulation with a balance in elasticity, flexibility, and cohesion-abrasion resistance.

Kraton D1163PTM polymer has higher di-block content. This can result in increased flexibility of the binder and a reduced hot melt viscosity and abrasion resistance.

Kraton G1652 polymer is recommended in the binder of extrudable thermoplastic road markings with long functional life requirements in low traffic density areas.

The use of polymers in road markings may lead to a longer dissolution time and higher hot melt viscosity compared to binders comprising low molecular weight resins and plasticisers. Therefore, the choice of type, morphology and amount of Kraton polymer depends on the application by extrusion or spray, and on the ultimate road marking performance desired.

Kraton modified road marking paints comply with national regulations when properly formulated.

Table 1: Melt properties of binders based on selected Kraton polymers

Property	D1163	D1161	D1161	D1102	G1652
Type	SIS	SIS	SIS	SBS	SEBS
Resin	Escorez™ 1102	Piccotac™ 1100E	Escorez™ 1102	Piccotac™ 7590	Regalite™ R1100
Dissolution Time (h) @ 200 °C	1.7	1.5	2	3.5	2.5
Hot Melt Visc. 200 °C (mPas)	327	393	815	920	1370
HM Visc. After 4h 200 °C (mPas)	318	368	660	947	1340

- The binder consisted of 3 parts by weight of Kraton and 14 parts by weight of resin.
- Blending conditions: the resin is molten, afterwards the polymer is added and stirred till a homogeneous mixture is obtained. The blending is done in a glass reactor heated at 200°C.

- Piccotac and Regalite are trademarks of Eastman Chemical Resins, Inc.
- Escorez is a trademark of Exxon Mobil Corp.

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