KRATON





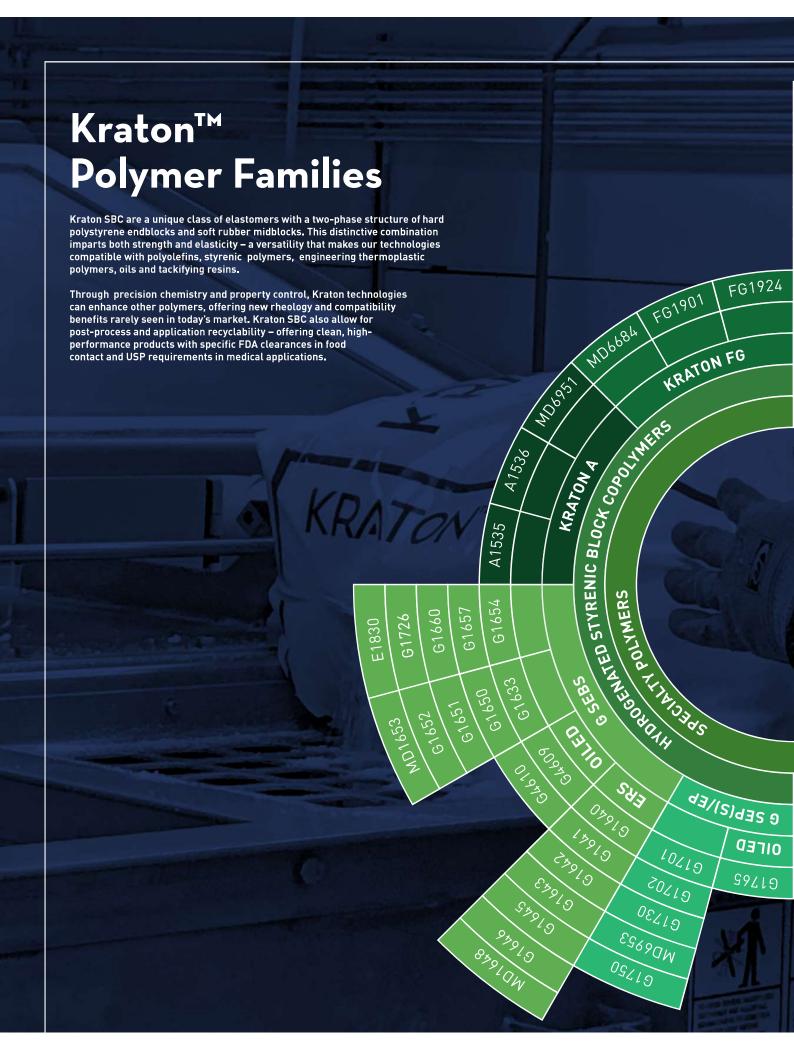
Engineered to Enhance Lives

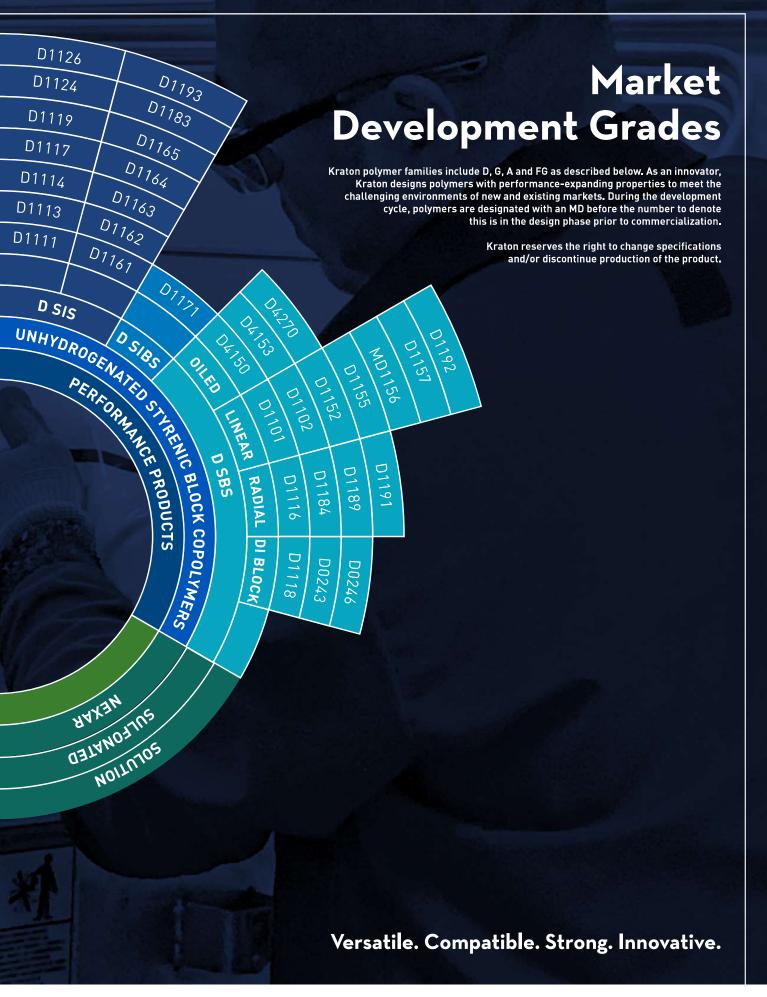
Kraton Corporation develops, manufactures and markets biobased chemicals and specialty polymers that deliver exceptional value and enhance the lives of people all over the world. As a leading global producer of styrenic block copolymers (SBC) and pine chemicals, we manufacture high-performance materials that differentiate our customers' products and meet multi-market needs. Our global footprint, reliable supply, extensive expertise and integrated portfolio of high-quality products enable our customers to push the boundaries of performance to power the future of innovation. Kraton invented and commercialized SBC more than 50 years ago – and we continue to redefine the industry through our commitment to research and sustainability.



We contribute to the circular economy by enabling a holistic approach to plastic product life cycle. We offer versatile multi-resin compatibilization in a wide range of applications for virgin materials, bioplastics and post-consumer and industrial plastic recycling streams. Kraton also collaborates with customers on life cycle assessments to produce data on both product performance and environmental impact throughout the value chain. These insights enable us to advance and create sustainable solutions that meet market demands. Learn more about our new CirKular+TM product line, which is designed for plastics upcycling and bioplastics performance enhancement, at cirkularplus.com.









Kraton™ D SIS Polymer Grades

Property	D1111	D1113	D1114	D1117	D1119	D1124	
Tensile Strength, MPa1,2	20	8	32	11	4	19	
300% Modulus, MPa ^{1,2}	1.4	0.3	1.9	0.4	1.1	3	
Elongation at Break, %1.2	1,200	1,700	1,300	1,400	1,100	1,200	
Set at Break, % ^{1,2}	10	20	-	15	20	26	
Hardness (10s), Shore A ³	45	23	42	33	30	54	
Specific Gravity	0.93	0.92	0.92	0.92	0.93	0.94	
Brookfield Viscosity, mPa.s (or cP)							
25% w ⁴	1,100	600	900	500	340	340	
Melt Flow Rate (MFR), g/10 min							
200 °C /5kg	3	17	9	27	23	4	
Styrene/Rubber Weight Ratio ⁵	22/78	16/84	19/81	17/83	22/78	30/70	
Diblock Content, % ⁵	18	55	<1	33	66	30	
Polymer Structure ⁵	Linear	Linear	Linear	Linear	Linear	Radial	
Oil Content, %w	-	-	-	-	-	-	
Physical Form	Porous Pellet	Dense Pellet	Dense Pellet	Dense Pellet	Dense Pellet	Dense/Porous Pellet	
Comments ⁶	FDA	FDA	FDA	FDA	FDA	FDA	

^[1] AS IM Method D412 tensite.
[2] Typical properties determined on film cast from toluene solution.
[3] Typical values on polymer compression molded at 170-200°C.
[4] Neat polymer concentration in toluene at 25 °C.
[5] Related to SBC polymer fraction.
[6] For specific FDA clearances, letters will be provided upon request.

raton [™] USBC Pro	oduct Families		
amily	Applications	Features	Benefits
SIS Styrene-Isoprene-Styrene	Adhesives Elastic films Flexographic printing plates	High strength Lowest hardness of all SBC Crosslinkable Excellent elasticity FDA compliant	Easy thermoplastic processing Processed as melt or in solution Compatible with multiple tackifying chemistries Soft stretch and drape
SBS Styrene-Butadiene-Styrene	Asphalt modification (paving/roofing) Footwear Adhesives Thermoformed clear rigid packaging Flexographic printing plates Elastic films	Wide hardness range Low viscosity Cross-linkable Exceptional cohesive strength Elasticity FDA compliant	Superior resistance to asphalt rutting, cracking Processed as melt or in solution High strength
SIBS Styrene-Isoprene/ Butadiene-Styrene	Adhesives	Unique midblock structure Transparency Sprayability Low temperature tack Cross-linkable reinforcements FDA compliant	Allows for better hot-melt stability Formulating latitude Processed as melt or in solution

ı							
D1126	D1161	D1162	D1163	D1164	D1165	D1183	D1193
8	21	22	10	28	21	14	20
2.5	0.9	-	0.5	3.1	3	-	2.6
1,400	1,300	1,200	1,400	1,100	1,200	1,750	1,300
-	-	-	-	-	-	-	20
44	32	86	25	53	59	-	53
0.92	0.92	0.95	0.92	0.94	0.93	0.92	0.93
500	1,200	120	900	300	330	1,050	400
15	12	44	22	12	7	14	14
19/81	15/85	44/56	15/85	29/71	30/70	16/84	24/76
30	19	<1	38	<1	20	38	20
Radial	Linear	Linear	Linear	Linear	Linear	Linear	Linear
-	-	-	-	-	-	-	-
Dense Pellet	Dense/Porous Pellet	Dense Pellet					
FDA	FDA	FDA	FDA	FDA	FDA	FDA	FDA

Kraton™ D SIBS Polymer Grades

Property	D1171			
Note Tensile Strength, MPa ^{1,2}	9			
300% Modulus, MPa ^{1,2}	2.1			
Elongation at Break, %1,2	1,250			
Set at Break, % ^{1,2}	-			
Hardness (10 sec), Shore A ³	45			
Specific Gravity	0.92			
Brookfield Viscosity, mPa.s (or cP)				
25%w ⁴	1,000			
Melt Flow Rate (MFR), g/10 min				
200°C/5kg	11			
Styrene/Rubber Weight Ratio	20/80			
Diblock, %	26			
Polymer Structure	Linear			
Physical Form	Dense Pellet			
Comments ⁵	FDA			

(1) ASTM method D412.
(2) Typical properties determined on film cast from toluene solution.
(3) Typical values on polymer compression molded at 170-200°C.
(4) Neat polymer concentration in toluene, 25°C.
(5) For specific FDA clearances, letters will be provided upon request.

These are typical values and should not be used to set specifications.

Kraton™ D SBS Polymer Grades

Property	D1101	D1102	D1116	D1118	D1152	D1155	MD1156	
Tensile Strength, MPa ^{1,2}	32	26	32	2	29	28	31	
300% Modulus, MPa ^{1,2}	2.8	3.8	2.4	1.2	4.1	2.9		
Elongation at Break, %1,2	880	1,100	900	600	1,100	800	800	
Set at Break, % 1,2	10	10	10	40	10	-		
Hardness (10s), Shore A ³	72	63	63	74	70	87		
Specific Gravity	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Brookfield Viscosity, mPa.s (or cP)								
25% w ⁴	4,000	1,000	9,000	630	1,200	600	600	
15% w ⁴	-	-	-	-	-	-		
Melt Flow Rate (MFR), g/10 min								
200 °C /5kg	<1	14	<1	10	7	11	8	
Styrene/Rubber Weight Ratio ⁵	31/69	29/71	23/77	33/67	30/70	40/60	40/60	
Diblock Content, %5	16	17	16	78	15	<1	<1	
Polymer Structure ⁵	Linear	Linear	Radial	Diblock	Linear	Linear	Linear	
Oil Content, %w	-	-	-	-	-	_	-	
Physical Form	Porous Pellet / Powder	Porous Pellet	Porous Pellet / Powder	Porous Pellet / Powder	Porous Pellet	Porous Pellet	Porous Pellet	
Comments ⁶	FDA	FDA	FDA	FDA	FDA	FDA	FDA	

[1] ASTM method D412 tensile.
[2] Typical properties determined on film cast from toluene solution.
[3] Typical values on polymer compression molded at 170-200°C.
[4] Neat polymer concentration in toluene, 25°C.
[5] Related to SBC polymer fraction.
[6] For specific FDA clearances, letters will be provided upon request.



D1157	D1184	D1189	D0243	D0246	D1191	D1192	D4150	D4153	D4270
								Oiled	
28	28	-	2		-	-	19 ⁽³⁾	10 ⁽³⁾	12[3]
2.9	5.5	-	1		-	-	1,1(3)	2,5[3]	1,9(3)
800	820	-	-		-	-	1,400 ⁽³⁾	1,000(3)	1,100(3)
-	10	-	-		-	-	25	15	-
70	74	68	70	70	70	70	45	45	46
0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
1,600	>20,000	-	315		>20,000	1,500	-	-	-
-	1,100	650	-		700	-	-	-	-
5	<1	<1	20		<1	<1	10	30	15
29/71	31/69	32/68	33/67	26/74	33/67	30/70	31/69	35/65	32/68
<1	16	16	75	55	18	<1	-	-	-
Linear	Radial	Radial	Diblock	Diblock	Radial	Linear	Linear	Linear	Radial
-	-	-	-		-	-	33	30.5	31
Porous Pellet	Porous Pellet / Powder	Porous Pellet / Powder	Porous Pellet	Porous Pellet	Porous Pellet / Powder	Porous Pellet / Powder	Porous Pellet	Porous Pellet	Porous Pelle
FDA	FDA	FDA	FDA	FDA	FDA	FDA	FDA	FDA	-



Our Specialty Polymers business includes hydrogenated block copolymers (HSBC) marketed under the brands Kraton™ G, A and FG. Kraton G grades offer a higher service temperature range, improved compression set and can accept high loadings of oils and fillers for compounding. They are ideal for uses where improved UV and ozone resistance are required. They can be sterilized through a variety of methods and are compatible with polyolefins. Kraton G ERS are enhanced rubber segments polymers, which are highly compatible with polyolefins. In addition, Kraton HSBC polymers are manufactured in various physical forms. We have introduced the free-flowing version of several powder form grades, which enables more efficient processing, unpacking and handling.

Kraton A grades offer improved tear strength and enhanced flow with isotropic properties. These grades provide better compatibility with more polar chemistries. Select Kraton G and Kraton A grades are FDA compliant and USP Class VI. Kraton FG grades are maleic anhydride functionalized to provide performance enhancements in engineering thermoplastics.

Kraton™ G SEBS Polymer Grades

Burnanta	G1633	G1650	G1651	G1652	MD1653	
Property						
Tensile Strength, MPa ^{1,2}	-	35	>28	31	>28	
300% Modulus, MPa ^{1,2}	-	5.6	-	4.8	-	
Elongation at Break, %1,2	-	500	>800	500	500	
Hardness (10s), Shore A ³	-	72	70	69	70	
Specific Gravity	0.91	0.91	0.91	0.91	0.90	
Brookfield Viscosity, mPa.s (or cP)						
25% w ⁴	>50,000	8,000	>50,000	1,800 ⁷	440	
15% w ⁴	>30,000	50	1,800 ⁷	30	-	
Melt Flow Rate (MFR), g/10 min						
200 °C /5kg	<1	<1	<1	<1	-	
230°C/5kg	<1	<1	<1	5	288	
Styrene/Rubber Weight Ratio⁵	30/70	30/70	33/67	30/70	31/69	
Diblock Content, %5	<1	<1	<1	<1	7	
Polymer Structure ⁵	Linear	Linear	Linear	Linear	Linear	
Oil Content, %w	-	-	-	-	-	
Physical Form	Fluffy Crumb	Powder/Crumb	Powder/Crumb	Powder/Crumb	Dense Pellet	
Comments ⁶	FDA	FDA	FDA	FDA	FDA	

[2] Typical properties determined on film cast from toluene solution.
[3] Typical values on polymer compression molded at 200-230°C.
[4] Neat polymer concentration in toluene at 25 °C.

(6) For specific FDA clearances, letters will be provided upon request. (7) Measured at 10% w neat polymer concentration in toluene at 25°C.

Kraton™ HSBC Family of Products

Family	Applications	Features	Benefits
Kraton G SEBS & SEP(S) Styrene-Ethylene/ Butylene-Styrene Styrene-Ethylene/ Propylene-Styrene	Soft, strong handles and grips 2K overmolding for polyolefins Elastic films Multi-layer films for medical, food and beverage Automotive interior and exterior Cable gels Cosmetics Adhesives Oilfields Rigid and flexible packaging Base oil modification Medical tubing	High strength Highly dilutive Compatible with polyolefins and mineral oils Widest molecular weight range Low temperature impact FDA Compliant and USP Class VI Recyclability Silicone replacement	Excellent UV, thermal and color stability Low compression set Very good elasticity Improved compound flow Gels or thickens paraffin oils Efficient viscosity modification Suspension of heavier materials Enables circular economy High impact resistance and durability Packaging aesthetics Plastic product recyclability Cost efficient formulation
Kraton G ERS Enhanced Rubber Segment Styrene-Ethylene/ Butylene-Styrene	Medical tubing and IV bags Food and beverage containers Drinking water systems Protective films Automotive skins Elastic films Adhesives	Improved PP compatibility Improved clarity with PP Improved flow Widest melt flow range Softer than conventional Kraton G FDA compliant, USP Class VI and ISO 10993	Proven PVC alternative Ultra-clean and plasticizer-free Transparent overmolding Soft, elastic and good flow Suits all common sterilization methods
Kraton A Styrene-Ethylene/ Butylene/Styrene- Styrene	Wire and cables 2K overmolding Protective films Consumer products	Improved flow (isotropic properties) Compatibility with polystyrene and polar polymers Improved tear strength Compatible with natural and polar oils FDA compliant and USP Class VI	Highly transparent products Gels or thickens natural oils Enhanced filler loading Sound dampening
Kraton FG Maleic Anhydride (MA) Functionalized Styrene-Ethylene/ Butylene-Styrene	Natural fiber composites Adhesives Plastics recycling (compatibilizing of mixed recycled streams) Coatings Performance enhancement of engineering thermoplastics	High MA content High thermal stability Impact improver Oil and biobased materials compatibilizer Adhesion to polar substrates Recyclability Maintains transparency	Tough products Ductile failure mode High processing temperature stability New material combinations Enhanced mechanical properties High impact resistance Increased reusability of end plastic product Plastic product recyclability Broad design options and excellent coloring

G1654	G1657	G1660	G1726	E1830	G4609	G4610
					Oil	ed
>27	23	32	2	>24	-	-
-	2.4	5.5	-	5.5	-	-
>800	750	800	200	>800	-	-
70	47	68	60	61	22	36
0.92	0.89	0.91	0.91	0.91	-	-
>50,000	4,200	8,000	200	>50,000	11,000	>50,000
400	65	50	10	1,6007	50	240
<1	8	<1	65	<1	<1	<1
<1	22	<1	>100	<1	<1	<1
31/69	13/87	31/69	30/70	33/67	33/67	33/67
<1	29	<1	70	7	<1	<1
Linear	Linear	Linear	Linear	Linear	Linear	Linear
-	-		-	-	45	31
Powder/Crumb	Dense Pellet	Powder	Dense Pellet	Powder/Crumb	Powder	Powder
FDA	FDA	FDA	FDA	FDA	FDA	FDA

Kraton™ G SEP(S)/EP Polymer Grades

Duamanty	G1701	G1702	G1730	G1750	G1765
Property					Oiled
Tensile Strength, MPa ^{1,2}	2	2	20	<0.3	<0.3
300% Modulus, MPa ^{1,2}	-	-	-	-	-
Elongation at Break, %1,2	<100	<100	>800	100	120
Hardness (10s), Shore A ³	64	41	61	11	12
Specific Gravity	0.92	0.91	0.9	0.86	0.86
Brookfield Viscosity, mPa.s (or cps)					
25% w ⁴	>50,000	50,000	2,000	8,700	12,800
15% w ⁴	-	280	35	140	1,805
Melt Flow Rate (MFR), g/10 min					
200 °C /5kg	<1	<1	3	8	4
230°C/5kg	<1	<1	11	-	-
Styrene/Rubber Weight Ratio ⁵	37/63	28/72	20/80	0/100	0/100
Diblock Content, % ⁵	100	100	<1	-	-
Polymer Structure ⁵	Diblock	Diblock	Linear	Star	Star
Oil Content, %w	-	-	-	-	12
Physical Form	Powder	Powder	Dense Pellet	Bale	Bale
Comments ⁶	FDA	FDA	FDA	FDA	FDA

[1] ASIA Milletion D412 tensile.
[2] Typical properties determined on film cast from toluene solution.
[3] Typical values on polymer compression molded at 200-230°C.
[4] Neat polymer concentration in toluene at 25 °C.
[5] Related to SBC polymer fraction.
[6] For specific FDA clearances, letters will be provided upon request.

These are typical values and should not be used to set specifications.

Kraton™ G ERS Polymer Grades

Burnata	G1640	G1641	G1642	G1643	G1645	G1646	MD1648	
Property	ERS							
Tensile Strength, MPa ^{1,2}	>20	>17	>21	>10	10	13	11	
300% Modulus, MPa ^{1,2}	4.5	4.3	-	-	-	0.8	-	
Elongation at Break, %1.2	>800	>800	>1,200	>600	600	1400	750	
Hardness (10s), Shore A ³	60	58	48	52	35	41	52	
Specific Gravity	0.91	0.91	0.9	0.9	0.89	0.94	0.90	
Brookfield Viscosity, mPa.s (or cP)								
25% w ⁴	>50,000	>50,000	1,300	210	650	-	90	
15% w ⁴	1,500	650	-	-	-	-	-	
Melt Flow Rate (MFR), g/10 min								
230°C/2,16kg	<1	<1	<1	19	3.5	12.0	220	
230°C/5kg	<1	<1	<1	75	13		-	
Styrene/Rubber Weight Ratio ⁵	32/68	33/67	21/79	19/81	13/87	13/87	20/80	
Diblock Content, % ⁵	<1	<1	<1	7	7	<5	7	
Polymer Structure ⁵	Linear	Linear	Linear	Linear	Linear	Radial	Linear	
Oil Content, %w	-	-	-	-	-	-	-	
Physical Form	Fluffy Crumb	Powder	Powder	Dense Pellet	Dense Pellet	Pellet	Dense Pellet	
Comments ⁶	FDA	FDA	FDA	FDA	FDA	-	FDA	

[3] Typical values on polymer compression molded at 200-230°C.
[4] Neat polymer concentration in toluene at 25 °C.
[5] Related to SBC polymer fraction.

Kraton™ A Polymer Grades

Property	A1535	A1536	MD6951
Tensile Strength, MPa ^{1,2}	28	>34	18[3]
300% Modulus, MPa ^{1,2}	7.9	6.4	3(3)
Elongation at Break, %1,2	>600	660	750 ⁽³⁾
Hardness (10s), Shore A ³	83	65	46
Specific Gravity	0.96	0.93	-
Brookfield Viscosity, mPa.s (or cps)			
25% w ⁴	-	-	380
15% w ⁴	1,600	465	-
Melt Flow Rate (MFR), g/10 min			
230°C/2,16kg	<1	<1	48
230°C/5kg	<1	3	-
Styrene/Rubber Weight Ratio ⁵	58/42	42/58	35/65
Diblock Content, % ⁵	<1	<1	7
Polymer Structure⁵	Linear	Linear	Linear
Oil Content, %w	-	-	-
Physical Form	Powder	Powder	Dense Pellet
Comment ⁶	FDA	FDA	FDA

- (1) ASTM interior D412 tensite.
 (2) Typical properties determined on film cast from toluene solution.
 (3) Typical values on polymer compression molded at 200-230°C.
 (4) Neat polymer concentration in toluene at 25 °C.
 (5) Related to SBC polymer fraction.
 (6) For specific FDA clearances, letters will be provided upon request.

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Kraton™ FG Functionalized Polymer Grades

Property	FG1901	FG1924	MD6684
Tensile Strength, MPa ^{1,2}	35	20	>20
300% Modulus, MPa ^{1,2}	5	2.5	4.5
Elongation at Break, % ^{1,2}	500	750	>800
Hardness (10s), Shore A ³	75	50	60
Specific Gravity	0.92	-	0.91
Brookfield Viscosity ⁴ , mPa.s (or cP)			
25%w ⁴	-	-	-
10%w ⁴	100	300	-
Melt Flow Rate (MFR), g/10 min			
200°C/5kg	5	11	10
230°C/5kg	-	-	10
Styrene/Rubber Weight Ratio⁵	30/70	13/87	30/70
Diblock Content, % ⁵	-	30	-
Polymer Structure ⁵	Linear	Linear	Linear
Bound MA Content, %w	1.7	1	1
Physical Form	Dense Pellet	Dense Pellet	Powder
Comments ⁶	FDA	FDA	FDA

- [1] ASTM method D412 tensile.
 [2] Typical properties determined on film cast from toluene solution.
 [3] Typical values on polymer compression molded at 177 °C.

- (4) Typical values on polymer compression molded at 177 °C.
 (5) Related to SBC polymer fraction.
 (6) For specific FDA clearances, letters will be provided upon request.

Kraton™ Polymers Miscibility & Solubility

PPE C9 Resins (PS, αMePS) Aromatic Plasticizers

Asphalt
Anti-Oxidants
H2 C9 Tackifying Resins
Rosin Resins (SYLVALITE™, SYLVATAC™ resins)
Naphthenic Plasticizers
C5 resins
Terpenes (SYLVARES™ resins)

Paraffinic Plasticizers Liquid Rubbers APAO Greases, Waxes

About Kraton Corporation

Kraton Corporation (NYSE "KRA") is a leading global producer of styrenic block copolymers, specialty polymers and high-value performance products derived from pine wood pulping co-products. Kraton's polymers are used in a wide range of applications, including adhesives, coatings, consumer and personal care products, sealants and lubricants, and medical, packaging, automotive, paving, roofing and footwear products. As the largest global provider in the pine chemicals industry, the company's pine-based specialty products are sold into adhesive, road and construction and tire markets, and it produces and sells a broad range of performance chemicals into markets that include fuel additives, oilfield chemicals, coatings, metalworking fluids and lubricants, inks, flavors and fragrances and mining. Kraton offers its products to a diverse customer base in over 70 countries worldwide.



Sustainable Solutions, Endless Innovation,™

Kraton Corporation (NYSE:KRA)

For more information, visit our website at www.kraton.com or email info@kraton.com $\,$

U.S.A. Headquarters Houston, Texas Asia Pacific Shanghai, China Europe, Africa, Middle East Almere, The Netherlands India/ Southeast Asia Mumbai, India **South America** Paulinia, Brazil

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