

Source: EniChem ©

SBC COMPARISON CHART
Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymere Structure	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)
SOL T 161/B	EniChem	Radial	30	90	C,PP,PW	82
Kraton D 1184	Kraton	Radial	30	85	DP, PP, PW	82
Kraton D 1186	Kraton	Radial	30	80	DP, PP, PW	82
Kraton KX 219	Kraton	Radial/High vinyl	30	87		
Kraton KX 220	Kraton	Radial/High vinyl	30	92		
Finaprene 411	Fina	Radial	31	94	P	
Calprene 411	Dynasol	Radial	30	92	P	80
Calprene 412	Dynasol	Radial	30	95		82
Solprene 411	Dynasol	Radial	30	96		82
TPE 411	TSRC	Radial	30	91	PP, PW	87
Kosyn KTR 401	KKPC	Radial	30	95		
Vector 2411	Dexco	Radial	32	86		
Asaprene 411	Asahi	Radial	30			
SOL TE 6317	EniChem	Radial	30	75	C	81
Calprene 419	Repsol	Radial	30	75		80
Finaprene 409	Fina	Radial	31	73	PP	
SOL T 6306	EniChem	Radial	37	90	C, PP, PW	90
Kraton D 1188	Kraton	Radial	35		PP, PW	

MAIN APPLICATION: Bitumen modification
 MF: all very low (less than 1g/10')

(#) C=Crumbs, P=Pellet, DP=Dense Pellet, PP=Porous Pellet, PW=PoWder,
 (*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method
 (**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

Grade	Supplier	Polymere Structure	Oil content (phr)	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	Main Application
SOL TE 6315	EniChem	Radial	5	30	90	C, PP	82	Footwear, Bit. Mod.
Finaprene 411/X	Fina	Radial	5	32	91	PP		Footwear
Solprene 412	Negromex	Radial	6	30			79	Footwear, Bit. Mod.
SOL TE 6316	EniChem	Mixed	---	30	90	C, PP	77	Bitumen Mod.
SOL T 161/C	EniChem	Radial	---	30	>90	C, PP, PW	81	Compound, Bit. Mod.
Kraton D 1144	Kraton	Radial	---	31	90	PP, PW		Compound, Bit. Mod.
Calprene 405	Repsol	Radial	---	35	95	PP	87	Compound
Finaprene 416	Fina	Radial	---	29	93	PP		Compound, Bit. Mod.
Finaprene 435	Fina	Radial	5	31	89	PP		Compound, Bit. Mod.
SOL T 6205	EniChem	Radial	---	25	84	C	67	Bit. Mod., Adhesives
SOL TE 6223 ⁵⁾	EniChem	Radial	---	20	90	PP	60	Bit. Mod., Adhesives
Kraton D 1116	Kraton	Radial	---	21	85	PP, PW	65	Bit. Mod., Adhesives
Finaprene 401	Fina	Radial	---	23	97	PP		Bit. Mod., Adhesives
Calprene 401	Repsol	Radial	---	20		PP	60	Bit. Mod., Adhesives
Solprene 4141	Coperbo	Radial	---	24	98			Bit. Mod., Adhesives
Tufprene 315	Asahi	Radial	---	20				Bit. Mod., Adhesives

M.F.I.: all very low (less than 1g/10')
⁵⁾ at the moment required only on the USA market
 (#) C=Crumbs, PP=Porous Pellet, PW=PoWder,
 (*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method
 (**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

Grade	Supplier	Polymere Structure	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**) (g/10')	Main Application
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SOL T 6302	EniChem	Linear	30	90	C, PP, PW	77		Bitumen Mod., Compounding
Kraton D 1101	Kraton	Linear	31	81	PP, PW	72		Bitumen Mod., Compounding
Kraton KX 223	Kraton	Linear/High Vinyl	32	---	PP			Bitumen Modification
Finaprene 502	Fina	Linear	32	81	PP			Bitumen Modification
Finaprene 908	Fina	Linear	31	81	PP			Bitumen Modification
Calprene 501	Repsol	Linear	31	---	PP	74		Compounding
Vector 2518	Dexco	Linear	32	---	PP	79		Bitumen Mod., Compounding
Solprene 4300X	Negromex	Linear	33			83		Bitumen Mod., Compounding
KTR 101	Corea	Linear	31	82				Bitumen Mod., Compounding
								all very low, less than 1 g/10'

SOL T 166	EniChem	Linear	30	90	P	72	6	Polymer Mod., Adhesives, Compounding
Kraton D 1102	Kraton	Linear	28	80	PP, PW	70	6	Polymer Mod., Adhesives, Compounding
Kraton KX 225	Kraton	Linear	29	---	PP, PW	68	3	Polymer Mod., Adhesives, Compounding
Calprene 500	Repsol	Linear	30	---	P	69	5 ²	Compounding
Solprene 4360X	Negromex	Linear	30			70	7 ²	Polymer Mod., Adhesives, Compounding
Vector 8550-D	Dexco	Linear	29	---	P	67	5	Polymer Mod., Adhesives, Compounding
Taipol	Taiwan	Linear	30	85				Polymer Mod., Adhesives, Compounding

(#) C=Crumbs, P=Pellet, PP=Porous Pellet, PW=PoWder,

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(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

² = 200°C/5kg

Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymer Structure	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**)	Main Application
Sol T 168***	EniChem	Multiblock	44 (32) ⁶⁾	---	P	82	8	Polymer mod., Adhesives
Steron 840 A	Firestone	Multiblock	42 (36) ⁶⁾	---			11	Polymer mod., Adhesives
Sol T 169	EniChem	Multiblock	45 (32) ⁶⁾	---	P	82	14	Polymer mod., Adhesives
SOL TE 6320	EniChem	Linear	31	25	P	64	8	Bit.Mod., Pol. Mod., Adhesives
Solprene 4318	Negromex	Linear	33			69	9 ²	Adhesives, Footwear, Bit. Mod.
Kraton KX 1118	Kraton	Linear	30	24	P, PW	61	10	Bit. Mod., Pol.Mod., Adhesives
SOL T 6414	EniChem	Radial	40	75	P	90	10	Adhesives, Compound, Pol.Mod.
Kraton D 1122	Kraton	Radial	37	88	P	78	3	Adhesives, Compound, Pol.Mod.
Finaprene 414	Fina	Radial	40	90	P			Adhesives, Compound, Pol.Mod.
Finaprene 602	Fina	Mixed	41	78	C, P	87	6	Adhesives, Compound, Pol.Mod.
Vector 6241-D	Dexco	Linear	41	---	P	88	18	Adhesives, Compound, Pol.Mod.
SBS 4202	T.S.R.		40			92	5 ¹⁾	Bit.Mod., Pol.Mod., Compound
Asaprene 414	Asahi	Radial	40					Adhesives, Compound, Pol.Mod.
Tuiprene A	Asahi	Multiblock	43	---				Adhesives, Compound, Pol.Mod.

***= not any longer in production!

(#) C=Crumbs, P=Pellet, PW=PoWder,

(*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method

(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

² = 200°C/5 kg

¹⁾ = 180°C/5 kg

⁶⁾ = Block Styrene

Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymer Structure	Oil Content	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**)	Main Application
SOL T 177	EniChem	Radial	40	50	90	C	86	15	Compound / Footwear
Calprene 487	Repsol	Radial	40	55 (33) ³⁾	96	C	88	14 ²	Compound / Footwear
Kraton D 4272	Kraton	Radial	40	53	93	PP	90	8	Compound / Footwear
Kraton D-KX 224	Kraton	Radial	43	49	95	PP	84	14	Compound / Footwear
Coperflex 4181	Petrolex	Radial	40	50	96	PP	---	---	Compound / Footwear

Sol T 176	EniChem	Linear	50	55	90	C	18	18	Compound / Footwear
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(#) C=Crumbs, PP=Porous Pellet,

(*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method

(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

²) 200°C/5kg

³) Bound Styrene

Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymere Structure	Oil Content (phr)	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**) (g/10')	Main Application
Sol T 171	EniChem	Radial	50	43	90	C	66	10	Compound / Footwear
Calprene 484	Repsol	Radial	46	44		C	73	7 ²	Compound / Footwear
Kraton D 4271	Kraton	Radial	50	45		PP	72	10	Compound / Footwear
Finaprene 484	Fina	Radial	50	45		C	73	8	Compound / Footwear
TPE 484	T.S.R.	Radial	50	42	91	PP	82	2.2 ¹⁾	Compound / Footwear
TPE 475	T.S.R.	Radial	50	38	95	PP	67	2.5 ¹⁾	Compound / Footwear
TPE 475R	T.S.R.	Radial	50	40		PP	67	2.5 ¹⁾	Compound / Footwear
LCY TPE 475	Lee Chang Yung	Radial	50	38	90	PP	---	---	Compound / Footwear
LCY TPE 484	Lee Chang Yung	Radial	50	45	87	PP	70	---	Compound / Footwear
Kuraray 575	Kuraray	Radial	45	38		PP	---	---	Compound / Footwear
Kibiton 584	Chi Mei	Radial	50	45		PP	65	5 ²	Compound / Footwear
Kibiton 575	Chi Mei	Radial	50	40		PP	62	6 ²	Compound / Footwear
Asaprene 475	Asahi	Radial	50	40		PP	58	2 ¹⁾	Compound / Footwear

Sol T 172	EniChem	Radial	45	30	90	C	43	9	Compound / Footwear
Calprene 485	Repsol	Radial	45	33	95	C	49	9 ²	Compound / Footwear
Kraton D 4270	Kraton	Radial	45	32	88	PP	46	8	Compound / Footwear
Finaprene 485	Fina	Radial	45	32		C	45	8	Compound / Footwear
TPE 485	T.s.R.	Radial	45	32		PP	53	4.5 ¹⁾	Compound / Footwear
Kibiton 585	Chi Mei	Radial	45	32		PP	45	7 ²	Compound / Footwear
LCY TPE 485	LeeChang Yung	Radial	45	32		PP	45	---	Compound / Footwear
Coperflex 4141	Petroflex	Radial	45	27	98	PP	---	---	Compound / Footwear

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(*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method

(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

¹⁾ 180°C/5 kg

²⁾ 200°C/5 kg

Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymere Structure	Oil Content (phr)	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**) (g/10')	Main Application
SOL TE 7327 ⁵⁾	EniChem	Linear	50	30	90	C	45	11	Compound / Footwear
Kraton D 2104	Kraton	Linear	55	32	81	PP	37	12	Compound / Footwear
Kraton D 4150 ¹⁰⁾	Kraton	Linear	45	30	85	PP	42	8	Compound / Footwear
Finaprene 480	Fina	Radial	50	30	90		46	⁴⁾	Compound / Footwear
Calprene 416	Repsol	Radial	---	30			72	⁴⁾	Bit.Mod., Pol.Mod., Adhesives
Kraton D-4141	Kraton	Linear	40	31		PP, PW	47	11 ²	Compound / Footwear
Kraton D 4158	Kraton	Radial	50	30		PP	46	⁴⁾	Compound / Footwear
Kraton D 4123	Kraton	Linear	43	35		PP, PW	47	24 ²	Compound / Footwear
Finaprene 415	Fina	Radial	---	39	95	PP		⁴⁾	Compound / Footwear
Finaprene 984	Fina	Radial	---	44	95	PP		⁴⁾	Compound / Footwear
TPE 416	T.S.R.	Radial	---	30	92		74	1.1 ¹⁾	Footwear, Adhesives

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(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

¹⁾ 180°C/5 kg

²⁾ 200°C/5 kg

⁴⁾Very low M.F.I. (less than 1 g/10')

⁵⁾ At the moment required only on the USA market

Styrene-Butadiene Block Copolymers

Grade	Supplier	Polymere Structure	Styrene content (%)	Coupling Efficiency (%)	Physical Form (#)	Hardness (*) (Sh A)	M.F.I. (**) (g/10')	Main Application
Sol S 142	EniChem	Linear	70 (49) ⁵⁾	---	P	98	8	Polymer Mod., Compounding
SOL TE 6719	EniChem	Branched	70	50	P	50 ⁵⁾	12 ²⁾	Polymer Mod., Compounding
SOL S 141	EniChem	Linear	48 (32) ⁵⁾	---	P	67		Polymer Mod., Compounding
Finaclear 507	Fina	Linear	73 (62) ⁵⁾	---				Polymer Mod., Compounding
Finaclear 509	Fina	Linear	73 (57) ⁵⁾	---				Polymer Mod., Compounding
Calprene 407	Repsol	Linear	69				5.5 ²⁾	Polymer Mod., Compounding
Styrolux 656C	Basf	Mixed	80	88				Polymer Modification
K-Resin KK38	Philips	Mixed	70	---				Polymer Modification
K-Resin KR01	Philips	Mixed	75	---				Polymer Modification
K-Resin KR03	Philips	Mixed	75	---				Polymer Modification
K-Resin KR05	Philips	Mixed	76	---				Polymer Modification

(*) Values obtained on compression moulded specimen, according to ASTM D 2292 test method

(**) ASTM D 1238 mod., P conditions (190°C, 5 kg)

(#) P = Pellet

²⁾ 200°C/5kg

⁵⁾ Block styrene

⁸⁾ Shore D

COMPETITIVE THERMOPLASTIC ELASTOMER

SBS comparison table by EN CHUAN CHEMICAL INDUSTRIES CO., LTD/TAIWAN, R.O.C.

% Styrene	Oil ext./PHR	Structure	En Chuan	KKPC	Kraton	EniChem	Calprene	Vector	Finaprene	Taipol	Chi Mei	Baling	Yanshan	Asahi	ATV	SOLPRENE
20		Radial							401							
25		Radial				6205										
30		Linear	701	101	1101	6302	501	2518/8553	502	3201	516	791	1301	430		
		Linear		201	1102	T 166		6201/8550			793			420		
30		Radial				T163	416		417							
		Radial							416	416						
		Radial			KX 500	T 161 C			409							
		Radial						411X								
		Radial	611	401	1184/6	T 161 B/A	411	2411/6211	411	411	511	801 Lin.!	4403	411	411	411
	X	Radial							480							
33		Linear		601										402P		
35	X	Linear			4113											
		Linear			KX 207											
30	X45	Radial	685		4270	T172	485	8551	485	485						485
37		Radial				6306										
40		Multiblock				T 168		6240/6241						TA/406		
40		Radial				TE 6414	415		415							
		Radial				6401			414		802			414		
		Linear	655 Clear													
42	X	Radial	675	301	4260				475	475	575	805	4452	475		
45	X50	Radial	684		4271/4261	T 171	484	8552	484						484	
50	X	Linear			4122						795			450		
	X40	Radial			4262	T 177	487		490							
55	X	Radial														
	X50	Linear				T 176										
70		Linear							507							

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Source: INSA

Solution Similar Products

INSA Solprene	ENICHEM Europrene	Firestone	FINA Finaprene	REPSOL Calprene	SHELL Kraton	OTHERS
411	SOL T 161B	-	411	411	D 1184	Dexco Vector 2518 D
412	-	-	411X	-	-	-
416	SOL T 163	-	416	416	-	Dexco Vector 2411 D
4300X	SOLT 6302	-	501	502	D1101	-
4360X	SOL T 166	-	-	-	D 1102	-
4318X	SOL T 168	-	-	-	D 1118	-
120	-	-	1204	1204	-	-
1110	-	-	-	-	-	-
1205	SOL 1205	Stereon 205	1205	1205	-	Taipol SSBR 1205
1322	-	Stereon 730A	-	-	-	-
1430	SOL B 182	-	-	-	-	Bayer Buna BL 6533
303	-	-	-	-	-	-
476	-	-	-	-	-	-
200	Intene 50	Diene 50	-	-	-	Coperbo Coperflex BR55
233	Intene 35	Diene 35	-	-	-	-
233P	-	Diene35AC10	-	-	-	-
375	-	-	375	-	-	Taipol SSBR 375