Top Polymer Enterprise
US Headquarters
Social Circle, GA

NPE 2024 TPE Overview Guide
Sustainable Bio-Content TPEs
Sustainable Recycle-Content TPEs

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Top Polymer Enterprise is a leading manufacturer of thermoplastic elastomers (TPEs). We are a full-service TPE provider, and we take great pride in offering the best TPE solution for the needs and applications of our customers. Our state-of-the-art manufacturing and research facilities in Liyang, Jiangsu, China provides a broad range of TPE chemistries (TPS, TPV, TPU, TPC, HFFR and their Alloys) allowing us to support a variety of markets such as transportation, consumer, electrical & electronics, building and construction, packaging, industrial, medical, and textile. The building of our USA manufacturing and headquarters in Social Circle, Georgia will complement our global infrastructure and reach.

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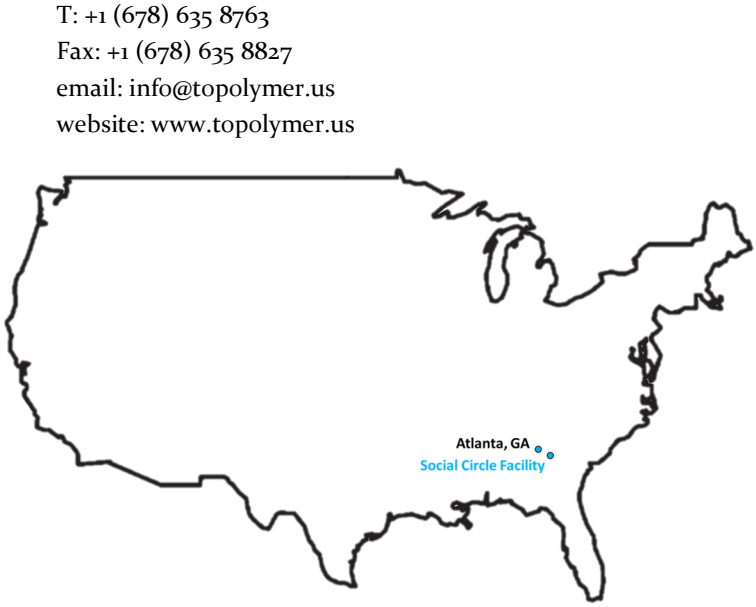

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Top Polymer will make you a top priority. It's never too late to be a valued customer of Top Polymer Enterprise. We're here to help you push the boundaries of imagination. We have the expertise and the TPE that can address the processing, comfort, aesthetics, safety, and overall performance that your application demands. Call us!

- **Global Manufacturer and Supplier of Thermoplastics Elastomers (TPEs)**
- **Full-Service Provider and Custom Developer of TPSs, TPVs, TPUs, TPCs, HFFR, and their Alloys**
- **The right product for the defined application**
- **Outstanding Quality, Competitively Priced**

Note: All information supplied by or on the behalf of Top Polymer Enterprise in relation of its products is supported by research and is believed reliable. However, Top Polymer assumes no liability whatever in respect of application, processing or end-use made from the mentioned information or products, or any consequences thereof. The buyer shall undertake all liability in respect of the application, processing, and end-use of the mentioned information or products, or any consequence thereof.

Welcome to the Thermoplastic Elastomer World of Top Polymer Enterprise!

We're here to help.

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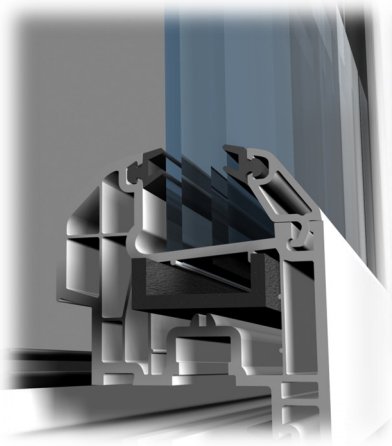


The Topolymer® 9 series provides processors with heat stabilized PP/EPDM Thermoplastic Vulcanizates (TPVs). This series is used in injection molding, extrusion, and blow molding applications. They are used in automotive interior, exterior, and under-the-hood applications; sealing systems, constructions seals, electricals, appliances and consumer products. Any application where softness and conformity is needed will benefit from the Topolymer® 9 series. They are completely recyclable.

Topolymer® TPV 9 Series*	Color	Duro	Density	Tensile Strength	Elong. @ Break	Tear Strength	Compress. Set 22h @23°C	Compress. Set 22h @70°C	Brittleness Temp	Δ Tensile 168h @150°C	Δ Elong. 168h @150°C	Δ Duro 168h @150°C
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 34-1	ISO815	ISO 815	ISO 812	ISO188	ISO188	ISO188
		Shore	g/cm^3	MPa	%	KN/m	%	%	°C	%	%	Shore
9035N/B	Natural/Black	35A	0.96	4.1	550	12	19	35	-60	N/A	N/A	N/A
9045N/B	Natural/Black	45A	0.96	5.2	600	22	20	29	-60	N/A	N/A	N/A
9355N/B	Natural/Black	55A	0.96	4.9	430	24	23	34	-60	-13	-10	+3A
9365N/B	Natural/Black	65A	0.96	6.1	450	36	28	35	-60	-10	-11	+3A
9375N/B	Natural/Black	75A	0.96	7.1	510	34	30	38	-60	-12	-17	+2A
9385N/B	Natural/Black	85A	0.96	9.8	520	57	35	45	-55	10	-18	+3A
9455N/B	Natural/Black	55A	0.95	3.8	350	17	/	28	-60	-10	-13	+3A
9465N/B	Natural/Black	65A	0.95	5.7	385	21	20	28	-60	-10	-13	+3A
9475N/B	Natural/Black	75A	0.95	7.8	430	24	24	30	-60	-8	-10	+3A
9485N/B	Natural/Black	85A	0.95	10.9	540	35	30	40	-55	-8	-10	+3A

To help support the Circular Economy, below are Recycle-Content (RCC) and Bio-Content (BIO) TPVs currently being produced by Top Polymer Enterprise.

Topolymer® RCC 9R Series*	Color	Recycle Content	Duro	Density	Tensile Strength	Elong. @ Break	Tear Strength	Compress. Set 22h @70°C
		%	ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 34-1	ISO 815
			Shore	g/cm^3	MPa	%	KN/m	%
9R65N/B	Natural/Black	20	65A	0.96	5.9	470	25	38
9R75N/B	Natural/Black	20	75A	0.96	7.4	500	34	41
9R85N/B	Natural/Black	25	85A	0.96	14.0	540	60	55
9R40DN/B	Natural/Black	40	40D	0.94	15.0	580	75	/
9R50DN/B	Natural/Black	50	50D	0.94	20.0	650	85	/

Topolymer® BIO 9B Series*	Color	Bio Content (ISO 16620)	Duro	Density	Tensile Strength	Elong. @ Break	Tear Strength	Compress. Set 22h @70°C
		%	ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 34-1	ISO 815
			Shore	g/cm^3	MPa	%	KN/m	%
9B80N/B	Natural/Black	10	80A	0.96	8.9	510	42	45
9B90N/B	Natural/Black	15	90A	0.96	12.0	540	60	55
9B40DN/B	Natural/Black	15	40D	0.96	15.0	580	75	/
9B50DN/B	Natural/Black	20	50D	0.96	20.0	600	90	/

* Grades shown are available in Natural (N) and Black (B). Other grades available upon request.



The Topolymer® 8 series is one of our broadest series and is used in a variety of markets and applications. This series is for injection molding applications and is considered for stand-alone molding applications or for over-molding onto a rigid plastic such as PP, PE, PA, ABS, PC, POM, or PC/ABS. They are completely recyclable.

Topolymer® TPS[1] 8P Series	Color	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate[2]
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815	
		Shore	g/cm^3	MPa	MPa	%	KN/m	%	
8P20N/B	Natural/Black	20A	1.02	2.3	0.4	810	8	22	PP
8P30N/B	Natural/Black	30A	1.02	2.2	0.4	713	9	20	PP
8P40N/B	Natural/Black	40A	1.02	2.5	1.3	450	11	15	PP
8P50N/B	Natural/Black	50A	1.02	4.8	1.6	688	21	22	PP
8P60N/B	Natural/Black	60A	1.02	7.8	2.9	644	25	21	PP
8P70N/B	Natural/Black	70A	1.08	8.2	3.1	553	38	30	PP
8P80N/B	Natural/Black	80A	1.08	11.0	4.0	707	42	38	PP
8P90N/B	Natural/Black	90A	1.08	13.0	7.0	649	65	28	PP
8P30T	Translucent	30A	0.88	2.5	0.7	752	9	18	PP
8P40T	Translucent	40A	0.88	3.8	0.9	460	18	12	PP
8P50T	Translucent	50A	0.88	4.4	1.3	580	20	24	PP
8P60T	Translucent	60A	0.88	5.5	2.3	720	23	28	PP
8P70T	Translucent	70A	0.88	10.3	3.4	732	41	32	PP
8P80T	Translucent	80A	0.88	9.8	3.9	650	47	29	PP
8P90T	Translucent	90A	0.88	17.8	6.3	740	75	32	PP
8P10C	Clear	10A	0.88	1.3	0.2	766	5	24	PP
8P20C	Clear	20A	0.88	3.2	0.6	710	10	20	PP
8P30C	Clear	30A	0.88	3.8	0.8	698	18	16	PP
8P40C	Clear	40A	0.88	4.4	1.3	550	22	24	PP
8P50C	Clear	50A	0.88	5.2	1.8	554	29	21	PP
8P60C	Clear	60A	0.88	10.4	1.6	700	39	15	PP

[1] General Purpose

[2] If your bondable substrate is not listed. Contact us! We have a broad range of over-molding grades that can be considered!






The ability to overmold to a broad range of engineering resins increases the freedom designers need to meet the ever changing demands of the market place. Topolymer® "SPEC" Specialty Series can bond to engineering resins such as POM, PE, PETG, PA, PC and PC/ABS. All formulations are completely recyclable.

Topolymer® SPEC[1] 8X Series	Color	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate[2]
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815	
		Shore	g/cm^3	MPa	MPa	%	KN/m	%	
8A50N/B	Natural/Black	50A	1.02	6.1	1.0	530	25	30	POM
8A60N/B	Natural/Black	60A	1.02	7.9	1.2	533	31	34	POM
8A70N/B	Natural/Black	70A	1.02	8.3	2.3	480	40	28	POM
8E50N/B	Natural/Black	50A	1.05	3.5	1.7	500	20	16	PE
8E60N/B	Natural/Black	60A	1.05	4.9	1.9	510	25	23	PE
8E70N/B	Natural/Black	70A	1.05	6.1	2.0	480	31	32	PE
8G50N/B	Natural/Black	50A	1.04	6.3	1.3	500	30	22	PETG
8G60N/B	Natural/Black	60A	1.04	7.1	2.6	681	37	17	PETG
8G70N/B	Natural/Black	70A	1.04	8.8	3.2	733	43	20	PETG
8N50N/B	Natural/Black	50A	1.07	2.8	1.1	450	25	18	PA
8N60N/B	Natural/Black	60A	1.07	2.1	3.3	630	60	18	PA
8N70N/B	Natural/Black	70A	1.07	3.3	1.9	481	21	16	PA
8S40N/B	Natural/Black	40A	1.05	4.3	1.2	609	18	33	PC, PC/ABS
8S50N/B	Natural/Black	50A	1.05	8.3	1.5	700	32	22	PC, PC/ABS
8S60N/B	Natural/Black	60A	1.05	7.3	1.7	731	27	17	PC, PC/ABS
8S70N/B	Natural/Black	70A	1.15	8.9	3.0	750	50	18	PC, PC/ABS
8S80N/B	Natural/Black	80A	1.15	31.9	5.8	562	97	27	PC, PC/ABS

[1] Specialty overmolding series

[2] If your bondable substrate is not listed. Contact us! We have a broad range of over-molding grades that can be considered!



If you are looking for recycle-content and bio-content TPE solutions for specialty overmold and standalone applications, Top Polymer Enterprise has TPE options for you to consider.

Top Polymer Enterprise provides high quality TPE solutions utilizing recycle-content and bio-content materials. Our production facility is GRS-certified and we only consider the best supply chain to meet your needs.

Helping you provide your markets with solutions that consider the continual use of resources is what Top Polymer Enterprise is all about. Talk to us, we're here to help.

Topolymer® BIO 8B Series	Color	Bio-Content (ISO 16620)	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate*
			ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815	
		%	Shore	g/cm^3	MPa	MPa	%	KN/m	%	
8B55N/B	Natural/Black	30	55A	1.0	5.8	2.4	500	33	23	PC, PC/ABS
8B60N/B	Natural/Black	30	60A	1.0	7.5	2.8	600	42	26	PC, PC/ABS
8B65N/B	Natural/Black	35	65A	1.0	15	3.5	600	48	31	PC, PC/ABS
8B70N/B	Natural/Black	40	70A	1.1	15	4.4	600	52	30	PC, PC/ABS
8B75N/B	Natural/Black	50	75A	1.1	20	5.8	550	65	29	PC, PC/ABS
8B80N/B	Natural/Black	55	80A	1.1	22	7.2	500	76	34	PC, PC/ABS

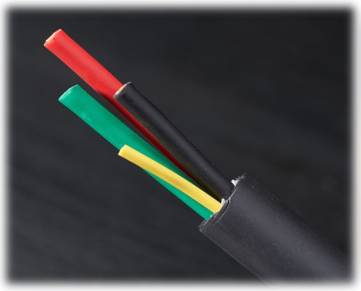
Topolymer® RCC 8R Series	Color	Recycle Content	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate*
			ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815	
		%	Shore	g/cm^3	MPa	MPa	%	KN/m	%	
8R60T	Translucent	30	60A	0.89	7.0	2.3	700	25	28	PP
8R70T	Translucent	40	70A	0.89	7.0	3.1	700	30	32	PP
8R80T	Translucent	50	80A	0.89	12.0	4.1	345	28	38	PP
8R90T	Translucent	55	90A	1.02	6.2	6.2	550	41	30	PP
8R60N/B	Natural/Black	50	60A	1.06	11.0	2.0	680	45	28	PC, PC/ABS
8R70N/B	Natural/Black	50	70A	1.06	13.1	4.3	610	52	28	PC, PC/ABS
8R80N/B	Natural/Black	60	80A	1.06	12.2	5	360	60	26	PC, PC/ABS

The Topolymer® MED series provides TPE compounds specifically for injection molding and extrusion for the MEDICAL market.

They are used in various medical applications requiring USP Class VI TPEs such as ring-pull caps, stoppers, and fluid delivery systems (i.e. infusion bags, tubing, IV drip chamber). They are completely recyclable.

If you have a unique medical application needing unique properties, now is a perfect time to talk to us!

Topolymer® MED 8M Series	Color	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate	USP Class VI	ISO 10993	Halogen Free
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815				
		Shore	g/cm^3	MPa	MPa	%	KN/m	%				
8M65T	Translucent	65A	0.91	9.3	2.1	730	24	26	PP	√	√	√
8M75C	Clear	75A	0.91	11.0	4.4	650	58	28	PP	√	√	√
8M85C	Clear	85A	0.91	13.8	5.5	763	74	32	PP	√	√	√
8M95C	Clear	95A	1.00	19.2	10.0	305	97	NA	PP	√	√	√



The Topolymer® 5 Series involves our halogen free flame retardant (HFFR) technology. This series is used in applications such as appliance wire, power cord, communication cable, earphone cord, USB cable and sealing strips. They are completely recyclable.

Included below are our Recycle- and Bio-Content HFFR grades.

Topolymer® HFFR 5 Series	Color	Duro	Density	Tensile Strength	Elongation @ Break	Tear Strength	Flame Resist. Rating	W&C Flame Resist. Rating	W&C Temp Rating	Extrusion	Injection Molding
		ASTM D2240	ASTM D792	ASTM D412	ASTM D412	ASTM D624	UL 94	UL1581	UL1581		
		Shore	g/cm^3	MPa	%	KN/m			^{0}C		
5575N/B	Natural/Black	75A	1.08	9	350	8.6	V0	VW-1	80	√	
5585N/B	Natural/Black	85A	1.08	10	320	12.8	V0	VW-1	90	√	
5595N/B	Natural/Black	95A	1.08	14	350	14.7	V0	VW-1	105	√	
5675N/B	Natural/Black	75A	1.06	8	450	18.2	V0		80		√
5685N/B	Natural/Black	85A	1.06	8	450	20.7	V0		80		√
5695N/B	Natural/Black	95A	1.06	11	450	23.2	V0		80		√

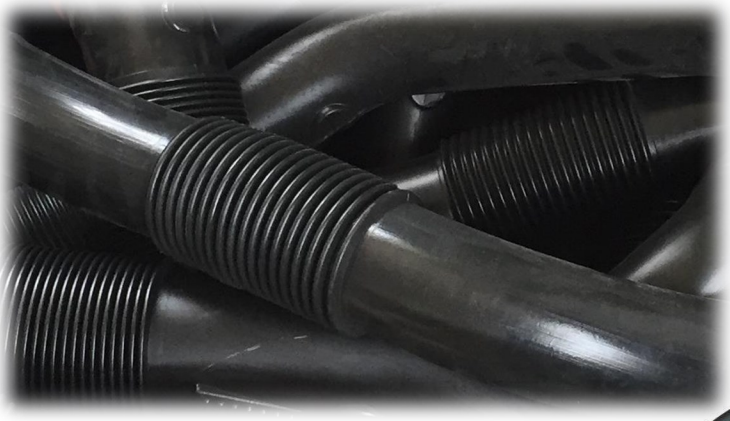
Topolymer® RCC 5R Series	Color	Recycle Content	Duro	Density	Tensile Strength	Elongation @ Break	Tear Strength	Flame Resist. Rating	W&C Flame Resist. Rating	W&C Temp Rating
		%	ASTM D2240	ASTM D792	ASTM D412	ASTM D412	ASTM D624	UL 94	UL1581	UL1581
			Shore	g/cm^3	MPa	%	KN/m			^{0}C
5R85N/B	Natural/Black	20	85A	1.08	9.5	410	11.3	Vo		80
5R90N/B	Natural/Black	30	90A	1.08	10.5	288	10.2	V0	VW-1	80
5R55DN/B	Natural/Black	40	55D	1.08	15.6	435	19.4	V0		80

Topolymer® BIO 5B Series	Color	Bio-Content	Duro	Density	Tensile Strength	Elongation @ Break	Tear Strength	Flame Resist. Rating	W&C Flame Resist. Rating	W&C Temp Rating
		ISO 16620	ASTM D2240	ASTM D792	ASTM D412	ASTM D412	ASTM D624	UL 94	UL1581	UL1581
		%	Shore	g/cm^3	MPa	%	KN/m			^{0}C
5B85N/B	Natural/Black	20	85A	1.08	11.6	288	10.0	Vo	VW-1	80
5B90N/B	Natural/Black	20	90A	1.06	9.0	447	17.3	V0		80
5B95N/B	Natural/Black	30	95A	1.06	10.1	463	12.9	V0		80
5B55DN/B	Natural/Black	50	55D	1.06	17.0	635	40.0	V0		80

The TOPESTER® 4 Series, Copolyester Thermoplastic Elastomers (TPCs) provides processors and designers with cost competitive copolyester thermoplastic elastomers (TPCs). This series is used in a variety of injection molding, extrusion, and blow molding applications.

TPCs are known for their exceptional toughness and flexibility. High impact strength in combination with low temperature resilience, moisture/gas permeability, flexural fatigue/chemical/heat resistance make them excellent candidates for Automotive, Industrial Hoses and Tubing, Transportation, Furniture, Sports & Leisure, Breathable Films/Wearables, and Building & Construction applications.

Topester® TPC 4 Series	Color	Duro	Density	Melt Index 2.16 kg @ 230°C	Flex. Mod.	Tensile Strength	Elong. @ Break	Charpy Notched Impact Strength (23°C)	Melting Temp	Vicat Soften. Temp 10N	Volume Resist.	Water Absorp. 24hr	Shrink.
		ISO 48-4	ISO 1183	ISO 1133	ISO 178	ISO 527	ISO 527	ISO 179	ISO 11357	ISO 306	IEC 60093	ISO 62	ISO 294
		Shore	g/cm^3	g/10min	MPa	MPa	%	KJ/m^2	°C	°C	Ω *cm	%	%
4135DN	Natural	35D	1.10	10	55	20	850	No Break	192	132	2.00E+12	0.6	1.2
4145DN	Natural	45D	1.15	10	100	26	690	No Break	210	155	1.00E+13	0.5	1.4
4155DN	Natural	55D	1.19	10	220	37	590	No Break	204	180	4.00E+13	0.4	1.5
4165DN	Natural	65D	1.22	12	320	40	480	No Break	212	195	9.00E+13	0.3	1.6
4170DN	Natural	70D	1.26	13	550	42	370	15	219	205	1.00E+14	0.3	1.7
4040DN	Natural	40D	1.13	1	85	24	610	No Break	202	140	2.00E+12	0.5	1.3
4045DN	Natural	45D	1.15	1	110	27	530	No Break	210	155	8.00E+12	0.5	1.4
4050DN	Natural	50D	1.18	1	170	33	340	No Break	202	165	2.00E+13	0.4	1.3



The Topolymer® extrusion (EXT) series provides TPE compounds for use in extrusion/film applications, co-extrusion and blow molding applications.

This series is used in many extrusion applications such as communication cable, film, fiber, sealing strips, luggage liners, apparel, and surgical/drape applications. They are completely recyclable.

Topolymer® EXT 3 Series	Color	Duro	Density	Tensile Strength	100% Modulus	Elongation @ Break	Tear Strength	Compression Set 22h@23°C	Bondable Substrate
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 34-1	ISO 815	
		Shore	g/cm^3	MPa	MPa	%	KN/m	%	
3P45N/B	Natural/Black	45A	0.95	4.0	1.2	550	16	12	PP
3P55N/B	Natural/Black	55A	0.95	6.5	1.4	750	24	15	PP
3P65N/B	Natural/Black	65A	0.95	9.0	2.0	690	37	13	PP
3P75N/B	Natural/Black	75A	0.95	10.5	2.3	690	45	17	PP
3P85N/B	Natural/Black	85A	1.05	12.4	5.9	382	61	25	PP
3P95N/B	Natural/Black	95A	1.05	14.5	6.0	580	68	32	PP
3E85N/B	Natural/Black	85A	1.02	12.2	4.0	690	62	22	PE

The Topthane®2 Series represents our Urethane Thermoplastic Elastomers (TPUs) .

The 2 series provides processors with elastomeric options for applications that demand flexibility combined with exceptional durability (wear resistance, scratch/mar resistance). These products are used in applications such as electronic wearable devices, automotive accessories, protective cases, and sports gear as well as other applications where clarity, flexibility, and mar resistance is required. For applications requiring sustainability, Top Polymer has developed recycle-content and bio-content TPUs.

The Topthane®2 Series is used in extrusion and injection molding applications. They are completely recyclable.

Topthane® TPU 2 Series	Color	Duro	Density	Tensile Strength	100% Modulus	300% Modulus	Elongation @ Break	Tear Strength
		ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 37	ISO 34-1
		Shore	g/cm^3	MPa	MPa	MPa	%	KN/m
2180C	Clear	80A	1.18	30.6	5.1	8.7	800	71.4
2185C	Clear	85A	1.18	30.6	6.1	9.2	600	81.6
2190C	Clear	90A	1.18	40.8	10.7	20.4	600	96.9
2195C	Clear	95A	1.18	34.7	11.2	17.3	450	112.2
2280C	Clear	80A	1.12	28.6	6.1	9.2	550	71.4
2285C	Clear	85A	1.12	30.6	7.1	19.3	500	81.6
2290C	Clear	90A	1.12	32.7	9.2	20.4	400	91.8
2295C	Clear	95A	1.12	30.6	12.2	25.5	450	122.4

Topthane® RCC 2R Series	Color	Recycle Content	Duro	Density	Tensile Strength	100% Modulus	300% Modulus	Elongation @ Break	Tear Strength
			ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 37	ISO 34-1
		%	Shore	g/cm^3	MPa	MPa	MPa	%	KN/m
2R85T	Translucent	65	85A	1.19	35.5	5.8	22.3	569	117.2
2R95T	Translucent	80	95A	1.21	45.1	12.1	31.2	507	172.4

Topthane® BIO 2B Series	Color	Bio Content	Duro	Density	Tensile Strength	100% Modulus	300% Modulus	Elongation @ Break	Tear Strength
		ISO 16620	ISO 48-4	ISO 1183	ISO 37	ISO 37	ISO 37	ISO 37	ISO 34-1
		%	Shore	g/cm^3	MPa	MPa	MPa	%	KN/m
2B70C	Clear	30	70A	1.17	7.1	1.9	2.9	1000	62.2
2B80C	Clear	50	80A	1.19	30.0	4.0	8.0	400	73.1
2B85C	Clear	45	85A	1.19	32.0	7.0	15.0	400	85.6
2B95C	Clear	35	95A	1.19	35.0	12.0	20.0	600	133.0