

Gradeslate for industrial and consumer applications

Energy lives here™

Typical properties

Family	Grade series*	Description	Hardness reference	UL listed	Key attributes**
General purpose	101-xx/103-xx	Black	55A – 50D	✓	<ul style="list-style-type: none"> Standard extrusion and molding Hard grades (>85A) ideal for blow molding Highest level of elastomeric properties (i.e., lowest compression/tension set)
	201-xx/203-xx	Natural	55A – 50D	✓	
	111-xx	Black	35A, 45A	✓	
	211-45	Natural	45A	✓	
	8201-xx	Natural	60A – 90A	✓	<ul style="list-style-type: none"> Standard extrusion and molding Hard grade (90A) ideal for blow molding Excellent colorability
Specialty molding	121-xxM100	Black	50A – 85A	✓	<ul style="list-style-type: none"> Improved processability and aesthetics Designed for improved UV resistance
	121-xxM200	Black	60A – 75A		<ul style="list-style-type: none"> Superior processability and aesthetics Designed for improved UV resistance
	8211-xx	Natural	35A – 75A	✓	<ul style="list-style-type: none"> Outstanding processability for specialty molding Excellent colorability
Extrusion	121-xxW175	Black	58A – 50D	✓	<ul style="list-style-type: none"> Designed and released against specific extrusion performance criteria 121 series designed for improved UV resistance
	121-73W175	Black	73A		
Flame retardant	691-xxW175	Natural	65A, 73A		<ul style="list-style-type: none"> UL 94 V-0 rated except 85A is V-2 rated
	251-xxW232	Natural	70A – 92A	✓	
	151-xxW256	Black	70A	✓	<ul style="list-style-type: none"> UL 94 5VA rated UV resistant (UL (f1) rated) Stabilized against copper and other metal-catalyzed degradation
Detergent resistant	101-xxW255	Black	45A, 55A	✓	<ul style="list-style-type: none"> Property retention in presence of typical dishwasher and washing machine detergents Stabilized for protection against copper and other metal-catalyzed degradation
	201-55W255	Natural	55A		
Improved elasticity	101-60W261	Black	60A	✓	<ul style="list-style-type: none"> Improved elastic recovery properties Excellent flexural crack resistance Proven performance for dryer drum roller wheel
Potable water	241-xx	Natural	55A, 64A	✓	<ul style="list-style-type: none"> NSF 61 certified (241-xx also NSF 51 certified) W236 grades stabilized against copper and other metal-catalyzed degradation
	241-xxW236	Natural	73A, 80A		
Non-fatty food contact	271-xx/273-xx	Natural	55A – 40D	✓	<ul style="list-style-type: none"> FDA non-fatty food contact rating NSF 51 certified 8271-XX non-hygroscopic; enhanced colorability
	8271-xx	Natural	55A – 75A	✓	
Bonding	121-xxB260	Black	40A – 70A – 80A		<ul style="list-style-type: none"> Improved bonding to TPV, EPDM and PP Low CoF to reduce friction
	291-60B150	Natural	60A	✓	<ul style="list-style-type: none"> Insert or 2 shot molding Bonds to PC, ABS, PS and other engineering thermoplastics (ETPs) B100 grades also bond to PP
	291-75B150	Natural	75A		
	8191-55B100	Black	55A		
	8211-55B100	Natural	55A	✓	<ul style="list-style-type: none"> Extrusion Bonds to metal and PP
	8291-85TL	Natural	85A		
UV resistant	121-xx/123-xx	Black	80A – 40D	✓	<ul style="list-style-type: none"> Designed for UV resistance UL listed grades are UL (f1) rated
	121-80	Black	80A		
	8221-xx	Natural	60A, 70A		
Feedstock	RC8001	Natural	55A		<ul style="list-style-type: none"> High rubber, low filler content feedstock for compounding

* xx = hardness reference value

** Comparisons are made to the grades in the first section of the general purpose family

Medical grades

PolyOne has been appointed the authorized distributor for ExxonMobil Chemical's Santoprene™ TPV medical grades in North America, Europe and Asia Pacific. ExxonMobil also supplies Santoprene TPV feedstock to PolyOne for the manufacture of custom compounded medical grade formulations that are marketed and sold globally by PolyOne under its GLS brands. See www.polyone.com for more information.

Family	Grade series*	Description	Hardness reference	Key attributes
Medical	181-55MED	Black	55A	<ul style="list-style-type: none">Meets USP Class VI requirements for plasticsDrug master file maintained with the FDA
	281-55MED	Natural	55A	
	8281-xxMED	Natural	35A - 90A	

* xx = hardness reference value

Bonding grades – licensed technology

Bonding products based on Santoprene TPV are available from RTP Company. See www.rtpcompany.com for more information.

RTP Company grade designation*	Hardness reference	Features	Corresponding discontinued Santoprene TPV grade*
RTP 6091-xx BLK	55A - 85A	Bonds to nylon 6, nylon 6 (30% glass filled), nylon 6,6 and PP	191-xxPA
RTP 6091-xx NAT	55A - 85A		8291-xxPA
RTP 6091 B-60A BLK	60A	Bonds to nylon 6, nylon 6 (30% glass filled), nylon 6,6 and nylon 12	8191-60B500
RTP 6091 B-60A NAT	60A		8291-60B500
RTP 6091 B-85PA12 BLK	85PA12	Bonds to nylon 12, nylon 6, nylon 6 (30% glass filled), nylon 6,6 and PP	191-85PA12

* xx = hardness reference value

Santoprene thermoplastic vulcanizates (TPVs) have a successful track record for flexible, high-quality engineered parts used in a wide range of industrial and consumer applications. Combining the characteristics of vulcanized rubber with the processing ease of thermoplastics, Santoprene TPVs deliver excellent long-term performance, the potential for reduced system costs, and the possibility of sustainability benefits.

Excellent performance

- Long-term durable sealing capabilities in harsh environments
- Outstanding physical properties
- High-end finished part aesthetics through aspect harmonization and excellent surface qualities

Reduced part/system costs

- Ease of processing which allows a broad processing window, fast cycle times and tight tolerances in part design
- Design flexibility which allows the combination of hard/soft materials
- Lower scrap rates compared to thermoset rubber materials

Sustainability opportunities

- The lower density of Santoprene TPVs compared to thermoset rubber and other thermoplastic elastomers can contribute to reduced part weight
- Reduction in overall waste in the manufacturing process as scrap produced during processing can be recycled
- Due to integrated manufacturing, such as multi-shot injection molding, chemical usage is reduced because spray coatings and adhesive application are not needed
- Reduced manufacturing energy consumption as heat curing is not required compared to EPDM thermoset rubber
- Less manufacturing space because typical TPV extrusion lines only need one-third of the space used by comparable EPDM thermoset lines

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