Texin® 260

Thermoplastic Polyurethane Elastomer (Polyester)

Covestro - PUR

Message:

Texin 260 resin is an aromatic polyester-based thermoplastic polyurethane with a Shore hardness of approximately 60D. It can be processed by injection molding; extrusion processes are not recommended.

General Information			
Features	Impact resistance, good Good flexibility Good wear resistance Fuel resistance Oil resistance Good toughness		
Uses	Wheels Washer Seals		
Agency Ratings	FDA 21 CFR 177.1680 FDA 21 CFR 177.2600		
Appearance	Natural color		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.22	g/cm³	ASTM D792, ISO 1183
Molding Shrinkage			
Flow: 2.54mm	0.80	%	ASTM D955
Transverse flow: 2.54mm	0.80	%	ASTM D955
Vertical flow direction: 2.54mm	0.80	%	ISO 2577
Flow direction: 2.54mm	0.80	%	ISO 2577
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	60		ASTM D2240, ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Flexural Modulus (23°C)	296	MPa	ASTM D790
Taber Abrasion Resistance			
1000 Cycles, 1000g, H-18 wheel	50.0	mg	ISO 4649
1000 Cycles, 1000g, H-18 wheel	50.0	mg	ASTM D1044
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			

50% strain	20.0	MPa	ISO 37, ASTM D412
100% strain	22.1	MPa	ASTM D412, ISO 37
300% strain	40.0	MPa	ASTM D412, ISO 37
Tensile Strength (Yield)	60.0	MPa	ASTM D412, ISO 37
Tensile Elongation (Break)	420	%	ASTM D412, ISO 37
Tear Strength			
-- [1]	175	kN/m	ASTM D624
--	180	kN/m	ISO 34-1
Compression Set			ASTM D395B
23°C, 22 hr [2]	21	%	ASTM D395B
23°C, 22 hr	27	%	ASTM D395B
70°C, 22 hr [3]	35	%	ASTM D395B
70°C, 22 hr	55	%	ASTM D395B
Bayshore Resilience	35	%	ASTM D2632

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air			
100°C, 70 hr	7.0	%	ASTM D573, ISO 216
100% strain, 100°C, 70 hr	13	%	ASTM D573
300% strain, 100°C, 70 hr	8.0	%	ASTM D573
100°C, 168 hr	1.0	%	ASTM D573, ISO 216
100% strain, 100°C, 168 hr	-1.0	%	ASTM D573
300% strain, 100°C, 168 hr	-1.0	%	ASTM D573
100°C, 336 hr	9.0	%	ASTM D573, ISO 216
100% strain, 100°C, 336 hr	23	%	ASTM D573
300% strain, 100°C, 336 hr	-3.0	%	ASTM D573
100°C, 504 hr	13	%	ASTM D573, ISO 216
100% strain, 100°C, 504 hr	5.0	%	ASTM D573
300% strain, 100°C, 504 hr	-4.0	%	ASTM D573
125°C, 70 hr	16	%	ASTM D573, ISO 216
100% strain, 125°C, 70 hr	-2.0	%	ASTM D573
300% strain, 125°C, 70 hr	-18	%	ASTM D573
125°C, 168 hr	21	%	ASTM D573, ISO 216
100% strain, 125°C, 168 hr	8.0	%	ASTM D573
300% strain, 125°C, 168 hr	-12	%	ASTM D573
125°C, 336 hr	6.0	%	ASTM D573, ISO 216
100% strain, 125°C, 336 hr	-7.0	%	ASTM D573
300% strain, 125°C, 336 hr	-24	%	ASTM D573
125°C, 504 hr	-2.0	%	ASTM D573, ISO 216
100% strain, 125°C, 504 hr	-8.0	%	ASTM D573
300% strain, 125°C, 504 hr	-26	%	ASTM D573
100% strain 100°C, 70 hr	13	%	ISO 216
300% strain 100°C, 70 hr	8.0	%	ISO 216

100% strain 100°C, 168 hr	-1.0	%	ISO 216
300% strain 100°C, 168 hr	-1.0	%	ISO 216
100% strain 100°C, 336 hr	23	%	ISO 216
300% strain 100°C, 336 hr	-3.0	%	ISO 216
100% strain 100 c, 504 hr	5.0	%	ISO 216
300% strain 100 c, 504 hr	-4.0	%	ISO 216
100% strain 125°C, 70 hr	-2.0	%	ISO 216
300% strain 125°C, 70 hr	-18	%	ISO 216
100% strain 125°C, 168 hr	8.0	%	ISO 216
300% strain 125°C, 168 hr	-12	%	ISO 216
100% strain 125°C, 336 hr	-7.0	%	ISO 216
300% strain 125°C, 336 hr	-24	%	ISO 216
100% strain 125 c, 504 hr	-8.0	%	ISO 216
300% strain 125 c, 504 hr	-26	%	ISO 216
Change in Ultimate Elongation in Air			ASTM D573, ISO 216
100°C, 70 hr	1.0	%	ASTM D573, ISO 216
100°C, 168 hr	8.0	%	ASTM D573, ISO 216
100°C, 336 hr	17	%	ASTM D573, ISO 216
100°C, 504 hr	24	%	ASTM D573, ISO 216
125°C, 70 hr	51	%	ASTM D573, ISO 216
125°C, 168 hr	51	%	ASTM D573, ISO 216
125°C, 336 hr	52	%	ASTM D573, ISO 216
125°C, 504 hr	44	%	ASTM D573, ISO 216
Change in Durometer Hardness in Air			ASTM D573, ISO 216
Support d, 100°C, 70 hr	0.0		ASTM D573, ISO 216
Support d, 100°C, 168 hr	-2.0		ASTM D573, ISO 216
Support d, 100 c, 336 hr	-3.0		ASTM D573, ISO 216
Support d, 100 c, 504 hr	-3.0		ASTM D573, ISO 216
Support d, 125°C, 70 hr	-2.0		ASTM D573, ISO 216
Support d, 125°C, 168 hr	-3.0		ASTM D573, ISO 216
Support d, 125 c, 336 hr	-4.0		ASTM D573, ISO 216
Support d, 125 c, 504 hr	-3.0		ASTM D573, ISO 216
Change in Tensile Strength			
23°C, 70 hr, Class C Standard Fuel	-1.0	%	ASTM D471
100% strain, 23°C, 70 hr, Class C standard fuel	-15	%	ASTM D471
300% strain, 23°C, 70 hr, Class C standard fuel	11	%	ASTM D471
23°C, 70 hr, in reference fuel A	-4.0	%	ASTM D471
100% strain, 23°C, 70 hr, in reference fuel A	-4.0	%	ASTM D471
300% strain, 23°C, 70 hr, in reference fuel A	-1.0	%	ASTM D471

23°C, 168 hr, Class C Standard Fuel	-7.0	%	ASTM D471
100% strain, 23°C, 168 hr, Class C standard fuel	-17	%	ASTM D471
300% strain, 23°C, 168 hr, Class C standard fuel	4.0	%	ASTM D471
23°C, 168 hr, in reference fuel A	-2.0	%	ASTM D471
100% strain, 23°C, 168 hr, in reference fuel a	-1.0	%	ASTM D471
300% strain, 23°C, 168 hr, in reference fuel a	2.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	-9.0	%	ASTM D471
100% strain, 23°C, 336 hr, Class C standard fuel	-24	%	ASTM D471
300% strain, 23°C, 336 hr, Class C standard fuel	1.0	%	ASTM D471
23°C, 336 hr, in reference fuel A	1.0	%	ASTM D471
100% strain, 23°C, 336 hr, in reference fuel A	2.0	%	ASTM D471
300% strain, 23°C, 336 hr, in reference fuel A	2.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	-19	%	ASTM D471
100% strain, 23°C, 504 hr, Class C standard fuel	-33	%	ASTM D471
300% strain, 23°C, 504 hr, Class C standard fuel	-10	%	ASTM D471
23°C, 504 hr, in reference fuel A	-1.0	%	ASTM D471
100% strain, 23°C, 504 hr, in reference fuel A	-5.0	%	ASTM D471
300% strain, 23°C, 504 hr, in reference fuel A	2.0	%	ASTM D471
100°C, 70 hr, in ASTM #1 oil	12	%	ASTM D471, ISO 175
100% strain, 100°C, 70 hr, in ASTM #1 oil	8.0	%	ASTM D471, ISO 175
300% strain, 100°C, 70 hr, in ASTM #1 oil	5.0	%	ASTM D471, ISO 175
100°C, 70 hr, in ASTM #3 oil	13	%	ASTM D471, ISO 175
100% strain, 100°C, 70 hr, in ASTM #3 oil	7.0	%	ASTM D471, ISO 175
300% strain, 100°C, 70 hr, in ASTM #3 oil	5.0	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #1 oil	22	%	ASTM D471, ISO 175
100% strain, 100°C, 168 hr, in ASTM #1 oil	16	%	ASTM D471, ISO 175
300% strain, 100°C, 168 hr, in ASTM #1 oil	2.0	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #1 oil	20	%	ASTM D471, ISO 175
100% strain, 100°C, 336 hr, in ASTM #1 oil	7.0	%	ASTM D471, ISO 175
300% strain, 100°C, 336 hr, in ASTM #1 oil	-16	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #1 oil	17	%	ASTM D471, ISO 175

100% strain, 100°C, 504 hr, in ASTM #1 oil	4.0	%	ASTM D471, ISO 175
300% strain, 100°C, 504 hr, in ASTM #1 oil	-14	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #3 oil	28	%	ASTM D471, ISO 175
100% strain, 100°C, 504 hr, in ASTM #3 oil	-2.0	%	ASTM D471, ISO 175
300% strain, 100°C, 504 hr, in ASTM #3 oil	-14	%	ASTM D471, ISO 175
23°C, 70 hr, in Reference Fuel C	-1.0	%	ISO 175
100% strain, 23 c, 70 hr, in Reference Fuel C	-15	%	ISO 175
300% strain, 23 c, 70 hr, in Reference Fuel C	11	%	ISO 175
23°C, 70 hr, in reference fuel A (isooctane)	-4.0	%	ISO 175
100% strain, 23°C, 70 hr, in reference fuel A (isooctane)	-4.0	%	ISO 175
300% strain, 23°C, 70 hr, in reference fuel A (isooctane)	-1.0	%	ISO 175
23°C, 168 hr, in Reference Fuel C	-7.0	%	ISO 175
100% strain, 23 c, 168 hr, in Reference Fuel C	-17	%	ISO 175
300% strain, 23 c, 168 hr, in Reference Fuel C	4.0	%	ISO 175
23°C, 168 hr, in reference fuel A (isooctane)	-2.0	%	ISO 175
100% strain, 23°C, 168 hr, in reference fuel A (isooctane)	-1.0	%	ISO 175
300% strain, 23°C, 168 hr, in reference fuel A (isooctane)	2.0	%	ISO 175
23°C, 336 hr, in Reference Fuel C	-9.0	%	ISO 175
100% strain, 23 c, 336 hr, in Reference Fuel C	-24	%	ISO 175
300% strain, 23 c, 336 hr, in Reference Fuel C	1.0	%	ISO 175
23°C, 336 hr, in reference fuel A (isooctane)	1.0	%	ISO 175
100% strain, 23°C, 336 hr, in reference fuel A (isooctane)	2.0	%	ISO 175
300% strain, 23°C, 336 hr, in reference fuel A (isooctane)	2.0	%	ISO 175
23°C, 504 hr, in Reference Fuel C	-19	%	ISO 175
100% strain, 23 c, 504 hr, in Reference Fuel C	-33	%	ISO 175
300% strain, 23 c, 504 hr, in Reference Fuel C	-10	%	ISO 175
23°C, 504 hr, in reference fuel A (isooctane)	-1.0	%	ISO 175

100% strain, 23°C, 504 hr, in reference fuel A (isooctane)	-5.0	%	ISO 175
300% strain, 23°C, 504 hr, in reference fuel A (isooctane)	2.0	%	ISO 175
Change in Ultimate Elongation			
23°C, 70 hr, Class C Standard Fuel	5.0	%	ASTM D471
23°C, 70 hr, in reference fuel A	-5.0	%	ASTM D471
23°C, 168 hr, Class C Standard Fuel	3.0	%	ASTM D471
23°C, 168 hr, in reference fuel A	-4.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	6.0	%	ASTM D471
23°C, 336 hr, in reference fuel A	-1.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	3.0	%	ASTM D471
23°C, 504 hr, in reference fuel A	-4.0	%	ASTM D471
100°C, 70 hr, in ASTM #1 oil	11	%	ASTM D471, ISO 175
100°C, 70 hr, in ASTM #3 oil	11	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #1 oil	29	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #1 oil	36	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #1 oil	47	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #3 oil	47	%	ASTM D471, ISO 175
23°C, 70 hr, in Reference Fuel C	5.0	%	ISO 175
23°C, 70 hr, in reference fuel A (isooctane)	-5.0	%	ISO 175
23°C, 168 hr, in Reference Fuel C	3.0	%	ISO 175
23°C, 168 hr, in reference fuel A (isooctane)	-4.0	%	ISO 175
23°C, 336 hr, in Reference Fuel C	6.0	%	ISO 175
23°C, 336 hr, in reference fuel A (isooctane)	-1.0	%	ISO 175
23°C, 504 hr, in Reference Fuel C	3.0	%	ISO 175
23°C, 504 hr, in reference fuel A (isooctane)	-4.0	%	ISO 175
Change in Durometer Hardness			
Support D, 23°C, 70 hr, in Reference Fuel C	-1.0		ASTM D471, ISO 175
Support D, 23°C, 70 hr, in reference fuel A	-1.0		ASTM D471
Support D, 23°C, 168 hr, in Reference Fuel C	-1.0		ASTM D471, ISO 175
Support D, 23°C, 168 hr, in reference fuel A	0.0		ASTM D471
Support d, 23 c, 336 hr, in Reference fuel c	-6.0		ASTM D471, ISO 175
Support D, 23°C, 336 hr, in reference fuel A	-3.0		ASTM D471
Support D, 23°C, 504 hr, in Reference Fuel C	-7.0		ASTM D471, ISO 175

Support D, 23°C, 504 hr, in reference fuel A	-2.0		ASTM D471
Support D, 100°C, 70 hr, in ASTM #1 oil	0.0		ASTM D471
Support D, 100°C, 70 hr, in ASTM #3 oil	-1.0		ASTM D471
Support D, 100°C, 168 hr, in ASTM #1 oil	-2.0		ASTM D471
Support D, 100°C, 336 hr, in ASTM #1 oil	2.0		ASTM D471
Support D, 100°C, 504 hr, in ASTM #1 oil	0.0		ASTM D471
Support D, 100°C, 504 hr, in ASTM #3 oil	-3.0		ASTM D471
Support D, 23°C, 70 hr, in reference fuel A (isooctane)	-1.0		ISO 175
Support D, 23°C, 168 hr, in reference fuel A (isooctane)	0.0		ISO 175
Support D, 23°C, 336 hr, in reference fuel A (isooctane)	-3.0		ISO 175
Support D, 23°C, 504 hr, in reference fuel A (isooctane)	-2.0		ISO 175
Support D, 100°C, 70 hr, in ASTM #1 oil	0.0		ISO 175
Support D, 100°C, 70 hr, in ASTM #3 oil	-1.0		ISO 175
Support D, 100°C, 168 hr, in ASTM #1 oil	-2.0		ISO 175
Support D, 100°C, 336 hr, in ASTM #1 oil	2.0		ISO 175
Support D, 100°C, 504 hr, in ASTM #1 oil	0.0		ISO 175
Support D, 100°C, 504 hr, in ASTM #3 oil	-3.0		ISO 175
Change in Volume			
23°C, 70 hr, Class A standard fuel	0.0	%	ASTM D471
23°C, 70 hr, Class C Standard Fuel	4.0	%	ASTM D471
23°C, 168 hr, Class A standard fuel	0.0	%	ASTM D471
23°C, 168 hr, Class C Standard Fuel	5.0	%	ASTM D471
23°C, 336 hr, Class A standard fuel	0.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	8.0	%	ASTM D471
23°C, 504 hr, Class A standard fuel	0.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	10	%	ASTM D471
100°C, 70 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 70 hr, ASTM Standard Oil (No.3)	2.0	%	ASTM D471
100°C, 168 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 336 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 504 hr, ASTM Standard Oil (No.1)	-1.0	%	ASTM D471
100°C, 504 hr, ASTM Standard Oil (No.3)	3.0	%	ASTM D471
23°C, 70 hr, in reference fuel A	0.0	%	ISO 175
23°C, 70 hr, in reference fuel C	4.0	%	ISO 175
23°C, 168 hr, in reference fuel A	0.0	%	ISO 175
23°C, 168 hr, in reference fuel C	5.0	%	ISO 175
23°C, 336 hr, in reference fuel A	0.0	%	ISO 175
23°C, 336 hr, in reference fuel C	8.0	%	ISO 175
23°C, 504 hr, in reference fuel A	0.0	%	ISO 175

23°C, 504 hr, in reference fuel C	10	%	ISO 175
100°C, 70 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 70 hr, in ASTM #3 oil	2.0	%	ISO 175
100°C, 168 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 336 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 504 hr, in ASTM #1 oil	-1.0	%	ISO 175
100°C, 504 hr, in ASTM #3 oil	3.0	%	ISO 175

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (0.45 MPa, Unannealed)	60.0	°C	ASTM D648, ISO 75-2/B
Brittleness Temperature	< -68.0	°C	ASTM D746, ISO 974
Glass Transition Temperature	-15.0	°C	DMA
Vicat Softening Temperature	190	°C	ISO 306/50, ASTM D1525 [4]
CLTE - Flow	1.3E-4	cm/cm/°C	ASTM D696

Additional Information	Nominal Value	Unit	Test Method
Compressive Load			ASTM D575
10% Deflection	9.45	MPa	ASTM D575
15% Deflection	13.4	MPa	ASTM D575
2% Deflection	0.345	MPa	ASTM D575
20% Deflection	17.4	MPa	ASTM D575
25% Deflection	21.7	MPa	ASTM D575
5% Deflection	3.62	MPa	ASTM D575
50% Deflection	53.7	MPa	ASTM D575

Injection	Nominal Value	Unit
Drying Temperature - Desiccant Dryer	100 - 110	°C
Drying Time - Desiccant Dryer	2.0	hr
Suggested Max Moisture	< 0.030	%
Suggested Shot Size	40 - 80	%
Suggested Max Regrind	20	%
Rear Temperature	190 - 210	°C
Middle Temperature	190 - 215	°C
Front Temperature	200 - 220	°C
Nozzle Temperature	205 - 225	°C
Processing (Melt) Temp	210 - 220	°C
Mold Temperature	15.0 - 40.0	°C
Injection Pressure	41.4 - 103	MPa
Injection Rate	Slow-Moderate	
Back Pressure	< 1.38	MPa
Screw Speed	40 - 80	rpm
Clamp Tonnage	4.1 - 6.9	kN/cm^2
Cushion	< 3.18	mm
Screw L/D Ratio	20.0:1.0	

Screw Compression Ratio	2.5:1.0 - 3.0:1.0

Injection instructions
Hold Pressure: 60 to 80% of Injection PressureTimers (per 0.125 in cross section): Boost: 5 to 10 sec 2nd Stage: 10 to 20 sec Cool: 15 to 20 sec

NOTE	
1.	C mould
2.	Post-cured 16 hr at 230°F
3.	Post-cured 16 hr at 230°F
4.	速率 A (50°C/h)

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China