

Texin® 985 U

Thermoplastic Polyurethane Elastomer (Polyether)

Covestro - PUR

Message:

Texin 985U resin is an aromatic polyether-based thermoplastic polyurethane with a Shore hardness of approximately 85A. It can be processed by injection molding, extrusion, or blow molding.

General Information			
Additive	heat stabilizer		
	UV stabilizer		
Features	Antimicrobial		
	Impact resistance, good		
	Good flexibility		
	Good wear resistance		
	Hydrolysis resistance		
	Thermal Stability		
	Good toughness		
	Medium transparency		
Uses	Films		
	Wheels		
	Cable sheath		
	Washer		
	Pipe		
	Pipe fittings		
	Seals		
	Footwear		
Agency Ratings	NSF 61		
Appearance	Natural color		
Processing Method	Blow molding		
	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.12	g/cm ³	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 A)	85		ASTM D2240, ISO 868
Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus			ASTM D790, ISO 178
-30°C	59.0	MPa	ASTM D790, ISO 178
23°C	26.9	MPa	ASTM D790, ISO 178
Taber Abrasion Resistance			
1000 Cycles, 1000g, H-18 wheel	30.0	mg	ISO 4649
1000 Cycles, 1000g, H-18 wheel	30.0	mg	ASTM D1044
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
50% strain	4.80	MPa	ISO 37, ASTM D412
100% strain	5.50	MPa	ASTM D412, ISO 37
300% strain	9.70	MPa	ASTM D412, ISO 37
Tensile Strength (Yield)	38.6	MPa	ASTM D412, ISO 37
Tensile Elongation (Break)	590	%	ASTM D412, ISO 37
Tear Strength			
-- ¹	87.6	kN/m	ASTM D624
--	88	kN/m	ISO 34-1
Compression Set			ASTM D395B, ISO 815
23°C, 22 hr ²	16	%	ASTM D395B, ISO 815
23°C, 22 hr	19	%	ASTM D395B, ISO 815
70°C, 22 hr ³	40	%	ASTM D395B, ISO 815
70°C, 22 hr	80	%	ASTM D395B, ISO 815
Bayshore Resilience	45	%	ASTM D2632
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air			
100°C, 70 hr	4.0	%	ASTM D573, ISO 216
100% strain, 100°C, 70 hr	-10	%	ASTM D573
300% strain, 100°C, 70 hr	0.0	%	ASTM D573
100°C, 168 hr	7.0	%	ASTM D573, ISO 216
100% strain, 100°C, 168 hr	-5.0	%	ASTM D573
300% strain, 100°C, 168 hr	7.0	%	ASTM D573
100°C, 336 hr	3.0	%	ASTM D573, ISO 216
100% strain, 100°C, 336 hr	2.0	%	ASTM D573
300% strain, 100°C, 336 hr	8.0	%	ASTM D573
100°C, 504 hr	-6.0	%	ASTM D573, ISO 216
100% strain, 100°C, 504 hr	-10	%	ASTM D573
300% strain, 100°C, 504 hr	15	%	ASTM D573
125°C, 70 hr	-37	%	ASTM D573, ISO 216

100% strain, 125°C, 70 hr	4.0	%	ASTM D573
300% strain, 125°C, 70 hr	20	%	ASTM D573
125°C, 168 hr	-58	%	ASTM D573, ISO 216
100% strain, 125°C, 168 hr	4.0	%	ASTM D573
300% strain, 125°C, 168 hr	8.0	%	ASTM D573
125°C, 336 hr	-67	%	ASTM D573, ISO 216
100% strain, 125°C, 336 hr	-16	%	ASTM D573
300% strain, 125°C, 336 hr	-8.0	%	ASTM D573
125°C, 504 hr	-70	%	ASTM D573, ISO 216
100% strain, 125°C, 504 hr	-15	%	ASTM D573
300% strain, 125°C, 504 hr	-10	%	ASTM D573
100% strain 100°C, 70 hr	-10	%	ISO 216
300% strain 100°C, 70 hr	0.0	%	ISO 216
100% strain 100°C, 168 hr	-5.0	%	ISO 216
300% strain 100°C, 168 hr	7.0	%	ISO 216
100% strain 100°C, 336 hr	2.0	%	ISO 216
300% strain 100°C, 336 hr	8.0	%	ISO 216
100% strain 100 c, 504 hr	-10	%	ISO 216
300% strain 100 c, 504 hr	15	%	ISO 216
100% strain 125°C, 70 hr	4.0	%	ISO 216
300% strain 125°C, 70 hr	20	%	ISO 216
100% strain 125°C, 168 hr	4.0	%	ISO 216
300% strain 125°C, 168 hr	8.0	%	ISO 216
100% strain 125°C, 336 hr	-16	%	ISO 216
300% strain 125°C, 336 hr	-8.0	%	ISO 216
100% strain 125 c, 504 hr	-15	%	ISO 216
300% strain 125 c, 504 hr	-10	%	ISO 216
Change in Ultimate Elongation in Air			ASTM D573, ISO 216
100°C, 70 hr	18	%	ASTM D573, ISO 216
100°C, 168 hr	16	%	ASTM D573, ISO 216
100°C, 336 hr	24	%	ASTM D573, ISO 216
100°C, 504 hr	16	%	ASTM D573, ISO 216
125°C, 70 hr	19	%	ASTM D573, ISO 216
125°C, 168 hr	16	%	ASTM D573, ISO 216
125°C, 336 hr	16	%	ASTM D573, ISO 216
125°C, 504 hr	2.0	%	ASTM D573, ISO 216
Change in Durometer Hardness in Air			ASTM D573, ISO 216
Support d, 100°C, 70 hr	-4.0		ASTM D573, ISO 216
Support d, 100°C, 168 hr	-5.0		ASTM D573, ISO 216
Support d, 100 c, 336 hr	-4.0		ASTM D573, ISO 216
Support d, 100 c, 504 hr	-4.0		ASTM D573, ISO 216
Support d, 125°C, 70 hr	-5.0		ASTM D573, ISO 216

Support d, 125°C, 168 hr	-5.0		ASTM D573, ISO 216
Support d, 125 c, 336 hr	-7.0		ASTM D573, ISO 216
Support d, 125 c, 504 hr	-7.0		ASTM D573, ISO 216
Change in Tensile Strength			
23°C, 70 hr, Class C Standard Fuel	-38	%	ASTM D471
100% strain, 23°C, 70 hr, Class C standard fuel	-5.0	%	ASTM D471
300% strain, 23°C, 70 hr, Class C standard fuel	1.0	%	ASTM D471
23°C, 70 hr, in reference fuel A	-4.0	%	ASTM D471
100% strain, 23°C, 70 hr, in reference fuel A	13	%	ASTM D471
300% strain, 23°C, 70 hr, in reference fuel A	15	%	ASTM D471
23°C, 168 hr, Class C Standard Fuel	-34	%	ASTM D471
100% strain, 23°C, 168 hr, Class C standard fuel	-13	%	ASTM D471
300% strain, 23°C, 168 hr, Class C standard fuel	-4.0	%	ASTM D471
23°C, 168 hr, in reference fuel A	3.0	%	ASTM D471
100% strain, 23°C, 168 hr, in reference fuel a	0.0	%	ASTM D471
300% strain, 23°C, 168 hr, in reference fuel a	3.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	-50	%	ASTM D471
100% strain, 23°C, 336 hr, Class C standard fuel	-23	%	ASTM D471
300% strain, 23°C, 336 hr, Class C standard fuel	-14	%	ASTM D471
23°C, 336 hr, in reference fuel A	12	%	ASTM D471
100% strain, 23°C, 336 hr, in reference fuel A	-4.0	%	ASTM D471
300% strain, 23°C, 336 hr, in reference fuel A	2.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	-36	%	ASTM D471
100% strain, 23°C, 504 hr, Class C standard fuel	-15	%	ASTM D471
300% strain, 23°C, 504 hr, Class C standard fuel	-10	%	ASTM D471
23°C, 504 hr, in reference fuel A	13	%	ASTM D471
100% strain, 23°C, 504 hr, in reference fuel A	7.0	%	ASTM D471
300% strain, 23°C, 504 hr, in reference fuel A	4.0	%	ASTM D471
100°C, 70 hr, in ASTM #1 oil	-8.0	%	ASTM D471, ISO 175
100% strain, 100°C, 70 hr, in ASTM #1 oil	-15	%	ASTM D471, ISO 175
300% strain, 100°C, 70 hr, in ASTM #1 oil	14	%	ASTM D471, ISO 175

100°C, 70 hr, in ASTM #3 oil	-6.0	%	ASTM D471, ISO 175
100% strain, 100°C, 70 hr, in ASTM #3 oil	-20	%	ASTM D471, ISO 175
300% strain, 100°C, 70 hr, in ASTM #3 oil	13	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #1 oil	-24	%	ASTM D471, ISO 175
100% strain, 100°C, 168 hr, in ASTM #1 oil	-20	%	ASTM D471, ISO 175
300% strain, 100°C, 168 hr, in ASTM #1 oil	14	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #3 oil	-15	%	ASTM D471, ISO 175
100% strain, 100°C, 168 hr, in ASTM #3 oil	-10	%	ASTM D471, ISO 175
300% strain, 100°C, 168 hr, in ASTM #3 oil	23	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #1 oil	-28	%	ASTM D471, ISO 175
100% strain, 100°C, 336 hr, in ASTM #1 oil	1.0	%	ASTM D471, ISO 175
300% strain, 100°C, 336 hr, in ASTM #1 oil	25	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #3 oil	-23	%	ASTM D471, ISO 175
100% strain, 100°C, 336 hr, in ASTM #3 oil	-16	%	ASTM D471, ISO 175
300% strain, 100°C, 336 hr, in ASTM #3 oil	10	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #1 oil	-30	%	ASTM D471, ISO 175
100% strain, 100°C, 504 hr, in ASTM #1 oil	3.0	%	ASTM D471, ISO 175
300% strain, 100°C, 504 hr, in ASTM #1 oil	23	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #3 oil	-44	%	ASTM D471, ISO 175
100% strain, 100°C, 504 hr, in ASTM #3 oil	-20	%	ASTM D471, ISO 175
300% strain, 100°C, 504 hr, in ASTM #3 oil	-4.0	%	ASTM D471, ISO 175
23°C, 70 hr, in Reference Fuel C	-38	%	ISO 175
100% strain, 23 c, 70 hr, in Reference Fuel C	-5.0	%	ISO 175
300% strain, 23 c, 70 hr, in Reference Fuel C	1.0	%	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)	13	%	ISO 175
300% strain, 23°C, 70 hr, in reference fuel A (isooctane)	15	%	ISO 175
23°C, 168 hr, in Reference Fuel C	-34	%	ISO 175
100% strain, 23 c, 168 hr, in Reference Fuel C	-13	%	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)	3.0	%	ISO 175
100% strain, 23°C, 168 hr, in reference fuel A (isooctane)	0.0	%	ISO 175
300% strain, 23°C, 168 hr, in reference fuel A (isooctane)	3.0	%	ISO 175
23°C, 336 hr, in Reference Fuel C	-50	%	ISO 175
100% strain, 23 c, 336 hr, in Reference Fuel C	-23	%	ISO 175
300% strain, 23 c, 336 hr, in Reference Fuel C	-14	%	ISO 175
23°C, 336 hr, in reference fuel A (isooctane)	12	%	ISO 175
100% strain, 23°C, 336 hr, in reference fuel A (isooctane)	-4.0	%	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	-36	%	ISO 175
100% strain, 23 c, 504 hr, in Reference Fuel C	-15	%	ISO 175
300% strain, 23 c, 504 hr, in Reference Fuel C	-10	%	ISO 175
23°C, 504 hr, in reference fuel A (isooctane)	13	%	ISO 175
100% strain, 23°C, 504 hr, in reference fuel A (isooctane)	7.0	%	ISO 175
300% strain, 23°C, 504 hr, in reference fuel A (isooctane)	4.0	%	ISO 175
Change in Ultimate Elongation			
23°C, 70 hr, Class C Standard Fuel	-7.0	%	ASTM D471
23°C, 70 hr, in reference fuel A	-14	%	ASTM D471
23°C, 168 hr, Class C Standard Fuel	-7.0	%	ASTM D471
23°C, 168 hr, in reference fuel A	0.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	-10	%	ASTM D471
23°C, 336 hr, in reference fuel A	3.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	-3.0	%	ASTM D471
23°C, 504 hr, in reference fuel A	8.0	%	ASTM D471
100°C, 70 hr, in ASTM #1 oil	12	%	ASTM D471, ISO 175
100°C, 70 hr, in ASTM #3 oil	14	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #1 oil	7.0	%	ASTM D471, ISO 175
100°C, 168 hr, in ASTM #3 oil	15	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #1 oil	12	%	ASTM D471, ISO 175
100°C, 336 hr, in ASTM #3 oil	22	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #1 oil	17	%	ASTM D471, ISO 175
100°C, 504 hr, in ASTM #3 oil	29	%	ASTM D471, ISO 175

23°C, 70 hr, in Reference Fuel C	-7.0	%	ISO 175
23°C, 70 hr, in reference fuel A (isooctane)	-14	%	ISO 175
23°C, 168 hr, in Reference Fuel C	-7.0	%	ISO 175
23°C, 168 hr, in reference fuel A (isooctane)	0.0	%	ISO 175
23°C, 336 hr, in Reference Fuel C	-10	%	ISO 175
23°C, 336 hr, in reference fuel A (isooctane)	3.0	%	ISO 175
23°C, 504 hr, in Reference Fuel C	-3.0	%	ISO 175
23°C, 504 hr, in reference fuel A (isooctane)	8.0	%	ISO 175
Change in Durometer Hardness			
Support D, 23°C, 70 hr, in Reference Fuel C	-8.0		ASTM D471, ISO 175
Support D, 23°C, 70 hr, in reference fuel A	-2.0		ASTM D471
Support D, 23°C, 168 hr, in Reference Fuel C	-8.0		ASTM D471, ISO 175
Support D, 23°C, 168 hr, in reference fuel A	-1.0		ASTM D471
Support d, 23 c, 336 hr, in Reference fuel c	-10		ASTM D471, ISO 175
Support D, 23°C, 336 hr, in reference fuel A	0.0		ASTM D471
Support D, 23°C, 504 hr, in Reference Fuel C	-9.0		ASTM D471, ISO 175
Support D, 23°C, 504 hr, in reference fuel A	-1.0		ASTM D471
Support D, 100°C, 70 hr, in ASTM #1 oil	-8.0		ASTM D471
Support D, 100°C, 70 hr, in ASTM #3 oil	-10		ASTM D471
Support D, 100°C, 168 hr, in ASTM #1 oil	-8.0		ASTM D471
Support D, 100°C, 168 hr, in ASTM #3 oil	-13		ASTM D471
Support D, 100°C, 336 hr, in ASTM #1 oil	-9.0		ASTM D471
Support D, 100°C, 336 hr, in ASTM #3 oil	-14		ASTM D471
Support D, 100°C, 504 hr, in ASTM #1 oil	-8.0		ASTM D471
Support D, 100°C, 504 hr, in ASTM #3 oil	-15		ASTM D471
Support D, 23°C, 70 hr, in reference fuel A (isooctane)	-2.0		ISO 175
Support D, 23°C, 168 hr, in reference fuel A (isooctane)	-1.0		ISO 175
Support D, 23°C, 336 hr, in reference fuel A (isooctane)	0.0		ISO 175
Support D, 23°C, 504 hr, in reference fuel A (isooctane)	-1.0		ISO 175
Support D, 100°C, 70 hr, in ASTM #1 oil	-8.0		ISO 175
Support D, 100°C, 70 hr, in ASTM #3 oil	-10		ISO 175

Support D, 100°C, 168 hr, in ASTM #1 oil	-8.0		ISO 175
Support D, 100°C, 168 hr, in ASTM #3 oil	-13		ISO 175
Support D, 100°C, 336 hr, in ASTM #1 oil	-9.0		ISO 175
Support D, 100°C, 336 hr, in ASTM #3 oil	-14		ISO 175
Support D, 100°C, 504 hr, in ASTM #1 oil	-8.0		ISO 175
Support D, 100°C, 504 hr, in ASTM #3 oil	-15		ISO 175
Change in Volume			
23°C, 70 hr, Class A standard fuel	3.0	%	ASTM D471
23°C, 70 hr, Class C Standard Fuel	43	%	ASTM D471
23°C, 168 hr, Class A standard fuel	4.0	%	ASTM D471
23°C, 168 hr, Class C Standard Fuel	44	%	ASTM D471
23°C, 336 hr, Class A standard fuel	6.0	%	ASTM D471
23°C, 336 hr, Class C Standard Fuel	44	%	ASTM D471
23°C, 504 hr, Class A standard fuel	7.0	%	ASTM D471
23°C, 504 hr, Class C Standard Fuel	45	%	ASTM D471
100°C, 70 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 70 hr, ASTM Standard Oil (No.3)	17	%	ASTM D471
100°C, 168 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 168 hr, ASTM Standard Oil (No.3)	19	%	ASTM D471
100°C, 336 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 336 hr, ASTM Standard Oil (No.3)	20	%	ASTM D471
100°C, 504 hr, ASTM Standard Oil (No.1)	0.0	%	ASTM D471
100°C, 504 hr, ASTM Standard Oil (No.3)	20	%	ASTM D471
23°C, 70 hr, in reference fuel A	3.0	%	ISO 175
23°C, 70 hr, in reference fuel C	43	%	ISO 175
23°C, 168 hr, in reference fuel A	4.0	%	ISO 175
23°C, 168 hr, in reference fuel C	44	%	ISO 175
23°C, 336 hr, in reference fuel A	6.0	%	ISO 175
23°C, 336 hr, in reference fuel C	44	%	ISO 175
23°C, 504 hr, in reference fuel A	7.0	%	ISO 175
23°C, 504 hr, in reference fuel C	45	%	ISO 175
100°C, 70 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 70 hr, in ASTM #3 oil	17	%	ISO 175
100°C, 168 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 168 hr, in ASTM #3 oil	19	%	ISO 175
100°C, 336 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 336 hr, in ASTM #3 oil	20	%	ISO 175
100°C, 504 hr, in ASTM #1 oil	0.0	%	ISO 175
100°C, 504 hr, in ASTM #3 oil	20	%	ISO 175
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -68.0	°C	ASTM D746, ISO 974
Glass Transition Temperature	-46.0	°C	DMA

Vicat Softening Temperature	80.0	°C	ISO 306/50, ASTM D1525 ⁴
Additional Information	Nominal Value	Unit	Test Method
Compressive Load			ASTM D575
10% Deflection	2.07	MPa	ASTM D575
15% Deflection	3.10	MPa	ASTM D575
2% Deflection	0.345	MPa	ASTM D575
20% Deflection	4.31	MPa	ASTM D575
25% Deflection	5.52	MPa	ASTM D575
5% Deflection	1.03	MPa	ASTM D575
50% Deflection	16.5	MPa	ASTM D575
Injection	Nominal Value	Unit	
Drying Temperature - Desiccant Dryer	93.0 - 104	°C	
Drying Time - Desiccant Dryer	2.0	hr	
Suggested Max Moisture	< 0.030	%	
Suggested Shot Size	40 - 80	%	
Suggested Max Regrind	20	%	
Rear Temperature	182 - 199	°C	
Middle Temperature	182 - 205	°C	
Front Temperature	182 - 210	°C	
Nozzle Temperature	188 - 213	°C	
Processing (Melt) Temp	196	°C	
Mold Temperature	16.0 - 38.0	°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			
Timers (per 0.125 in cross section):			
Boost: 5 to 10 sec			
2nd Stage: 10 to 20 sec			
Cool: 20 to 30 sec			
Extrusion	Nominal Value	Unit	
Drying Temperature	93.0 - 104	°C	
Drying Time	2.0	hr	
Cylinder Zone 1 Temp.	180 - 200	°C	
Cylinder Zone 2 Temp.	180 - 205	°C	
Cylinder Zone 3 Temp.	180 - 210	°C	
Adapter Temperature	180 - 210	°C	
Melt Temperature	190 - 205	°C	

Die Temperature	185 - 210	°C
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)	

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