

Impact-modified ester grades

This series of grades was developed primarily for shoe shells and similar applications. Shoe shells or ski boots produced in these grades are lightweight and offer a high rigidity and elasticity with a very good low-temperature impact strength. The modified Desmopan® grades additionally display a high scratch and wear resistance.

Glass fiber reinforced grades

Injection moldings in glass fiber reinforced Desmopan® are characterized by a low shrinkage and a low coefficient of expansion. The coefficient of expansion in the direction of the glass fibers is of the same order of magnitude as for aluminum.

Field of application: exterior automotive engineering parts.

Parts in R-TPU display a high heat resistance, good low-temperature impact strength and sound insulation, good flowability and accurate reproduction of detail.

Molded parts can be printed and painted.

Desmopan® (TPU)				Impact modified, Ester grades					Glass fiber reinforced grades
Typical Properties	Test Conditions	Units	Standards	KU 2-8715*	KA 8529*	KA 8377*	KA 8410*	KA 8417*	DP 3970D
Mechanical properties (23 °C/50 % r. h.)									
Shore hardness, method A		-	ISO 868	96	97	97	98	98	99
Shore hardness, method D		-	ISO 868	57	59	62	64	66	70
Ultimate tensile strength	200 mm/min	MPa	i.A. ISO 527-1,-3	52	60	60	60	54	64
Elongation at break	200 mm/min	%	i.A. ISO 527-1,-3	470	410	390	380	360	25
Stress at 100 % strain	200 mm/min	MPa	i.A. ISO 527-1,-3	18	18	24	26	31	
Stress at 300 % strain	200 mm/min	MPa	i.A. ISO 527-1,-3	35	37	40	43	45	
Compression set	24 h; 70 °C	%	ISO 815		60				
Compression set	72 h; 23 °C	%	ISO 815		30				
Abrasion resistance	-	mm³	ISO 4649	25	30	30	30	30	
Impact resilience	-	%	ISO 4662	36	38	38			
Tear propagation resistance	500 mm/min	kN/m	ISO 34-1	130	140	160	150	190	
Flexural modulus	2 mm/min	MPa	ISO 178	175	240	330	440	510	1700
Thermal properties									
Torsional storage modulus	-20 °C	MPa	ISO 6721-2	542	600	760	824	895	2870
Torsional storage modulus	23 °C	MPa	ISO 6721-2	127	157	206	250	311	1450
Torsional storage modulus	70 °C	MPa	ISO 6721-2	46	57	64	77	93	765
Other properties (23 °C)									
Density	-	kg/m³	ISO 1183	1170	1200	1200	1200	1180	1376
Glass fiber / glass bead / filler content	-	%	ISO 3451-1						21
Molding conditions									
Injection molding-Melt temperature	-	°C	-	225 - 240	225 - 240	225 - 240	225 - 240	225 - 240	220 - 245
Injection molding-Mold temperature	-	°C	-	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 80
Extrusion-Melt temperature	-	°C	-						

DP = Developmental product (see disclaimer for developmental products)

*) see disclaimer for developmental products