

Duretha® A
Reference Data

Properties	Test conditions	Units	Standards	X Unreinforced General grades									
				A 30		A 30 S		A 31		A 31 S		A 31 SK	
				fr. molded ¹⁾	cond ²⁾	fr. molded ¹⁾	cond ²⁾	fr. molded ¹⁾	cond ²⁾	fr. molded ¹⁾	cond ²⁾	fr. molded ¹⁾	cond ²⁾
Rheological properties													
Moulding shrinkage	parallel across	%	based on ISO 2577	2.0	2.0	0.75	1.65	1.4	1.9	1.0	1.7	0.9	1.3
Post-shrinkage,	parallel across	...C;...h	%	based on ISO 2577			0.10	0.15					
Mechanical properties													
C Tensile modulus	1 mm/min	MPa	ISO 527	3200	1300	3600	1700	3000	1200	3500	1500	3600	1700
C Yield stress	50 mm/min	MPa	ISO 527	85	55	95	60	80	50	90	60	100	60
C Tensile strain at yield	50 mm/min	%	ISO 527	4.5	20	4.5	18	4.5	20	4.5	20	4.5	18
C Nominal tensile strain at break	50 mm/min	%	ISO 527	>50		5	>50	>50		>50		>50	
C Tensile stress at break	5 mm/min	MPa	ISO 527	60	60	90	45	50	45	80	45	90	45
C Tensile strain at break	5 mm/min	%	based on ISO 527	20	>50	5	>0	80	>50	15	>50	10	>50
C Tensile creep modulus	1 h	MPa	ISO 899-1		1000								
C Tensile creep modulus	1000 h	MPa	ISO 899-1		700								
C CHARPY impact strength	23 C	kJ/m ²	ISO 179-1eU	NB	NB	150	NB	NB	NB	150	NB		
C CHARPY impact strength	-30 C	kJ/m ²	ISO 179-1eU	NB	NB	100	100	NB	NB				
C CHARPY notched impact strength	23 C	kJ/m ²	ISO 179-1eA	<10	20	<10	12	<10	20	<10	12		
C CHARPY notched impact strength	-30 C	kJ/m ²	ISO 179-1eA	<10	<10	<10	<10	<10	<10	<10	<10		
IZOD impact strength	23 C	kJ/m ²	ISO 180-1C	NB	NB	150	NB	NB	NB	150	NB	150	NB
IZOD impact strength	-30 C	kJ/m ²	ISO 180-1C	200	200	100	100	250	250	100	100	100	100
IZOD notched impact strength	23 C	kJ/m ²	ISO 180-1A	<10	15	<10	12	<10	15	<10	12	<10	12
IZOD notched impact strength	-30 C	kJ/m ²	ISO 180-1A	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Flexural modulus	2 mm/min	MPa	ISO 178	2800	1200	3200	1400	2600	1000	3200	1300	3300	1400
Flexural strength	5 mm/min	MPa	ISO 178	125	50	135	60	120	50	130	55	135	60
Flexural strain at flexural strength	5 mm/min	%	ISO 178	6	8	6	8	6	8	6	8	6	7.5
Flexural stress at 3.5 % strain	5 mm/min	MPa	ISO 178	100	40	110	45	95	40	105	40	110	45
Total penetration energy	23 C	Nm	ISO 6603-2	110	140			140	130				
Energy to peak force	-30 C	Nm	ISO 6603-2	20									
Ball indentation hardness		N/mm ²	ISO 2039-1	130	70	140	70	130	70	140	70	140	70
Thermal properties													
C Melting temperature	10 K/min	C	ISO 3146-C	263		263		263		263		263	
C Temperature of deflection under load, method Af	1.80 MPa	C	ISO 75	~70		~75		~70		~80		~80	
C Temperature of deflection under load, method Bf	0.45 MPa	C	ISO 75	~225		~230		~225		~230		~230	
C Temperature of deflection under load, method Cf	8.00 MPa	C	ISO 75	~50				~50					
C Vicat softening temperature	50 N; 50 K/h	C	ISO 306	>230		>230		>230		>230		>230	
C Coefficient of linear thermal expansion	parallel	23 to 55 C	10 ⁻⁴ /K	ASTM E 831	0.9		0.7	0.9		0.7			
C Coefficient of linear thermal expansion	across	23 to 55 C	10 ⁻⁴ /K	ASTM E 831	0.95		0.8	0.8		0.8			
C Flammability UL 94, thickness 1.6		Class	UL 94, (IEC 707)	V-2		V-2		V-2		V-2		V-2	
C Flammability by oxygen index	Procedure A-top surface ignition	%	ISO 4589	27				29					
Thermal conductivity		W/(m·K)	ISO 8302	0.27		0.27		0.27		0.27		0.27	
Specific heat		kJ/(kg·K)		1.5		1.5		1.5		1.5		1.5	
Glow wire temperature	2 mm	C	IEC 695-2-1	750		750		750		750		750	

* Trial product see back side

1) Freshly molded

2) Conditioning in accordance with ISO 1110

3) Holding pressure 400 bar

NB = No break

C These property characteristics are taken from the CAMPUS data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).