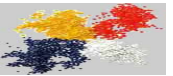




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NOVAKRAL ABS

TEST METHOD	UNIT	STANDARD				MTR, TR-HEAT RESISTANT		GF REINFORCED			FLAME RETARDED			INDUSTRY GRADES			SPECIALS					
		F	AR	AG	I	MTR	TR	FV 17	FV 17 TR	FR F	FR UV	FR GW750	BLACK AAS	FR IND	ASA	TRASP F	TRASP	MARMOR.	F GL	TR GL	FLUO	
PHYSICAL PROPERTIES																						
Density	ASTM D792 ISO 1183	gr/cm3	1.05	1.05	1.05	1.05	1.06	1.06	1.17	1.18	1.18	1.18	1.12	1.05	1.20	1.07	1.08	1.08	1.05	1.05	1.06	1.05
Water absorption (24h at 23 °C)	ASTM D750 ISO 62	%	0.3	0.25	0.3	0.3	0.3	0.3	0.25	0.25	0.3	0.3	0.3	0.3	0.3	0.35	0.35	0.35	0.3	0.3	0.3	0.3
Mould shrinkage	ASTM D955	%	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.2-0.4	0.2-0.4	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6
Melt flow rate MFI (220 °C/ 10 Kg)	ASTM D1238 ISO 1133	gr/10'	20-40	6-12	14-20	6-10	7-13	5-10	-	-	60	30	25	10-20	15-40	4-10	15-30	3	20-40	20-40	5-10	12-20
Filler	INTERNAL METHOD	%	-	-	-	-	-	-	17	17	-	-	-	-	-	-	-	-	-	-	-	-
MECHANICAL PROPERTIES																						
Tensile resistance: stress at yield * or at break **	ASTM D638 ISO R527	MPa	55*	60*	45*	40*	40*	45*	66**	62**	40*	40*	45*	45*	35*	45*	50*	45*	55*	45*	45*	55*
Strain at break	ASTM D638 ISO R527	%	25	30	25	40	25	20	2	2	30	20	25	25	15	20	40	25	25	25	20	20
Maximum flexural stress	ASTM D790 ISO 178	MPa	75	90	65	60	60	60	100	90	60	60	65	65	55	65	80	60	75	65	60	80
Flexural modulus	ASTM D790 ISO 178	MPa	2600	2900	2400	2000	2200	2300	5500	5400	2400	2400	2500	2400	2200	1900	2400	2000	2600	2400	2300	2700
IZOD notched impact strength (thickness 3.2 mm, at 23 °C)	ASTM D256 ISO 180/4a	J/m	140	110	160	250	160	130	70	60	100	140	130	120	100	100-120	90	100	140	150	130	100
IZOD notched impact strength (thickness 3.2 mm, at 0 °C)	ASTM D256 ISO 180/4a	J/m	90	80	110	180	110	90	55	50	80	100	90	80	60	80-150	60	70	90	100	90	70
IZOD notched impact strength (thickness 3.2 mm, at -40 °C)	ASTM D256 ISO 180/4a	J/m	50	45	60	120	60	50	40	35	50	70	70	50	40	40-50	30	40	50	60	50	40
Rockwell hardness	ASTM D785 ISO 2039/2	-	R 111	R 115	R 107	R 94	R 104	R 108	-	-	R 105	R 108	R 109	R 107	R 108	R 100	R 110	R 95	R 111	R 105	R 108	R 112
THERMAL PROPERTIES																						
VICAT softening temperature at 9.8N-120 °C/h	ASTM D1525/A ISO 306/A	°C	108	115	106	102	113	118	110	120	98	105	105	106	100	105	104	104	108	110	118	110
VICAT softening temperature at 49N-120 °C/h	ASTM D1525/B ISO 306/B	°C	98	105	97	94	103	108	100	111	88	95	95	97	90	95	95	95	98	100	108	100
Temperature of deflection under load HDT 1.82 MPa (unannealed)	ASTM D648 ISO 75	°C	86	95	86	84	92	98	93	100	78	85	85	85	83	85	88	88	86	90	98	90
Ball pressure	BS 3456 IEC 335	°C	> 80	> 80	> 80	75-80	> 80	> 100	> 80	> 100	75	80	80	80	75	80	> 80	> 80	> 80	> 80	> 100	> 80
ELECTRICAL PROPERTIES																						
Surface resistivity	ASTM D257 IEC 93	ohm	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e14	10e13	10e13	10e13	10e14	10e14	10e14
Dielectric strength	ASTM D149 IEC 243	KV/mm	32	33	32	32	30	30	30	28	28	28	28	30	28	100	30	32	32	30	30	30
Dielectric constant at 106 Hz	ASTM D150 IEC 250	-	3.2	3.0	3.2	3.2	3.2	3.2	3.4	3.2	3.2	3.2	3.2	3.2	3.8	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Dispipation factor tang at delta - 10 e6 Hz	ASTM D150 IEC 250	-	0.015	0.010	0.015	0.015	0.015	0.015	0.03	0.03	0.015	0.015	0.015	0.015	0.02	0.025	0.015	0.015	0.015	0.015	0.015	0.015
Comparative tracking index (solution A, CTI)	VDE 0303-P1 IEC 112	V	600	600	600	600	600	600	500	500	500	550	600	600	600	600	600	600	600	600	600	600
FLAMMABILITY PROPERTIES																						
Flammability UL 94 (thickness 3.2 mm)	UL 94	class	HB	HB	HB	HB	HB	HB	HB	HB	V0	V0	HB	HB	V0	HB	HB	HB	HB	HB	HB	HB
Flammability UL 94 (thickness 1.6 mm)	UL 94	class	HB	HB	HB	HB	HB	HB	HB	HB	V	V0	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
Glow wire (thickness 3.2 mm)	VDE 0471/P2-4 IEC 695	°C	650	650	650	650	650	650	750	750	960	960	750	650	960	650	650	650	650	650	650	650
Glow wire (thickness 2 mm)	VDE 0471/P2-4 IEC 695	°C	650	650	650	650	650	650	750	750	960	960	750	650	960	650	650	650	650	650	650	650

ABS products F and UG are available also in antistatic (AT), in plating, in dry blended (SPL), and in improved to UV radiation (UV) grades.
 UL 94 omologated grade have a letter Y (Yellow Card) following the code.
 Our technical data are provided for guidance purpose only, and are based on medium values.
 The application, use and processing are entirely your own responsibility