

## PRODUCT RANGE OVERVIEW

•STANDARD GRADES

7233, 7033, 6333, 5533, MX 1940, 4033, MX 1205, 3533, 2533

•REINFORCED GRADES

RDG 314, RDG 277

•BREATHABLE AND ANTISTATIC GRADES

MV 1041, MV 1074, MV 3000, MV 6100, MH 1657, INIT 1100

•SOFTENING ADDITIVE FOR PA 6

MP 1878

•STABILIZATION

- SA grades: no additive for medical and food uses
- SN grades: UV stabilized
- SP grades: new generation UV stabilized

## GENERAL CHARACTERISTICS

### THERMOPLASTIC GRADES

CHARACTERISTICS	CONDITIONS	STANDARD	UNITS	RDG 314	RDG 277	7233	7033	6333	5533	MX 1940	4033	MX 1205	3533	2533
SHORE HARDNESS	instantaneous	ISO 868/ ASTM D 2240	Shore D	75	71	69	69	64	54	55	42	46	33	27
			Shore A	-	-	-	-	-	-	-	-	90	92	82
	after 15 seconds	ISO 868/ ASTM D 2240	Shore D	71	68	61	61	58	50	48	35	41	25	22
			Shore A	-	-	-	-	-	-	-	-	89	90	80
DENSITY		ISO 1183	g/cm <sup>3</sup>	1.12	1.12	1.01	1.01	1.01	1.01	1.01	1.00	1.01	1.00	1.00
MELTING POINT		ISO 11357/ ASTM D 3418	°C	175	174	174	172	169	159	154	160	147	143.5	133.5
VICAT SOFTENING POINT	under 10 N	ISO 306/ ASTM D 1525	°C	173	170	164	164	157	142	127	131	111	77	58
WATER ABSORPTION AT EQUILIBRIUM	at 23°C and 50% RH	ISO 62/ ASTM D 570	%	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.5	0.4	0.4	0.4
WATER ABSORPTION SATURATION	24h in water at 23°C	ISO 62/ ASTM D 570	%	0.9	1.0	0.9	0.9	1.1	1.2	1.7	1.2	1.2	1.2	1.2
MELT INDEX	235°C / 1kg	ISO 1133/ ASTM D 1238	g/10 mn	-	-	4	6	5	7	-	5	9	8	10
LINEAR COEFFICIENT OF THERMAL EXPANSION	from - 40°C to +140°C	ASTM D 696	10 <sup>-5</sup> /°C	-	-	12	16	14	17	-	19.5	20	21	20
SURFACE RESISTIVITY		IEC 60093/ ASTM D 257	Ohm/sq	-	-	10 <sup>12</sup>								
VOLUMIC RESISTIVITY			Ohm.cm	-	-									
FILLER			Glass fiber	-	-	-	-	-	-	-	-	-	-	-

## PROPERTIES (RUBBER MATERIALS TESTS)

CHARACTERISTICS	CONDITIONS	STANDARD	EQUIVALENT	UNITS	7233	7033	6333	5533	4033	MX 1205	3533	2533		
TENSILE STRESS	to obtain extension of	v = 500 mm/min	ASTM D 638	MPa	10%	28.7	21.6	14.2	10	5.1	5.5	1.6	1.1	
					50%	25	21.8	16.6	13.2	8.9	9.1	4.6	3.2	
					100%	24.8	21.1	16.9	13.6	10.5	9.1	5.8	4.2	
TENSION SET	under	v = 500 mm/min	ISO 2285	ASTM D 412 (method A)	%	5%	0.8	0.5	0.5	0.5	0.4	0.5	0.4	0.4
						10%	2.4	1.9	1.5	1.5	1.2	1.2	0.7	0.5
						15%	4.2	3.8	3.3	2.9	2.1	2.3	0.9	0.8
						20%	6.6	5.8	5.1	4.6	3.1	3.3	1.4	0.9
TEAR RESISTANCE	unnotched	ISO 34-1	ASTM D 624	kN/m	194	177	147	135	116	115	78	66		
	notched				166	149	127	106	85	77	50	44		
TABER ABRASION RESISTANCE	H18 / load 1kg / 1000 rotations	ISO 9352		mm	54	59	60	62	62	60	77	99		
ABRASION RESISTANCE	10 N / 40 m	ISO 4649	DIN 53516	mm <sup>3</sup>	-	-	55	47	48	40	64	130		
RESILIENCE		ISO 4662	DIN 53512		-	-	53	57	66	58	69	70		
COMPRESSION SET	under deformation of 25%	70h at 23°C	ISO 815	%	-	-	47	43	32	37	22	19		
COMPRESSION SET	under load of 9.3MPa	22h at 70°C	ASTM D 395 (method A)	%	-	-	5	10	21	-	54	62		
RESISTANCE TO CRACKING BY REPEATED FLEXURE	20 °C – 100 000 flex	ISO 133		mm	-	-	5	3	2	-	2	2		
	-20 °C – 50 000 flex				-	-	14	9	4.5	-	2.5	2.5		

## PROPERTIES (PLASTIC MATERIALS TESTS)

CHARACTERISTICS	CONDITIONS	STANDARD	UNITS	RDG	RDG	7233	7033	6333	5533	MX	4033	MX	3533	2533
				314	277					1940		1205		
FLEXURAL MODULUS		ISO 178	MPa	2200	1500	513	390	285	170	167	77	86	21	12
		ASTM D 790	MPa	-	-	518	379	278	164	-	81	93	20	14
TENSILE MODULUS		ISO 527	MPa	-	-	522	384	280	161	-	71	81	18	10
		ASTM D 638	MPa	2600	2000	521	383	287	160	158	74	79	20	10
TENSILE – STRESS AT YIELD	v = 50 mm/min	ASTM D 638 type IV	MPa	62	50	26	22	18	12	12	-	-	-	-
TENSILE – STRAIN AT YIELD			%	6	10	18	20	22	25	25	-	-	-	-
TENSILE – STRESS AT BREAK			MPa	56	45	56	54	53	52	51	40	42	39	32
TENSILE – STRAIN AT BREAK			%	10	17	300	350	350	450	550	450	550	600	750
IMPACT STRENGTH * (IZOD) AT + 23 °C	unnotched	ASTM D 256	J/m	-	-	1380 <sup>P</sup>	969 <sup>P</sup>	607 <sup>P</sup>	N	-	N	N	N	N
	notched		J/m	-	-	192 <sup>C</sup>	847 <sup>P</sup>	554 <sup>P</sup>	N	-	N	N	N	N
IMPACT STRENGTH * (IZOD) AT - 40 °C	unnotched	ASTM D 256	J/m	-	-	2460 <sup>P</sup>	2345 <sup>P</sup>	1589 <sup>P</sup>	1589 <sup>P</sup>	-	N	N	N	N
	notched		J/m	-	-	50 <sup>C</sup>	50 <sup>C</sup>	11 <sup>C</sup>	1038 <sup>P</sup>	-	N	N	N	N
IMPACT STRENGTH * (CHARPY) AT + 23 °C	unnotched	ISO 179	kJ/m <sup>2</sup>	-	-	N	N	N	N	N	N	N	N	N
	notched		kJ/m <sup>2</sup>	-	-	15 <sup>C</sup>	120 <sup>P</sup>	N	N	N	N	N	N	N
IMPACT STRENGTH * (CHARPY) AT - 30 °C	unnotched	ISO 179	kJ/m <sup>2</sup>	-	-	N	N	N	N	N	N	N	N	N
	notched		kJ/m <sup>2</sup>	7.3	7.3	10 <sup>C</sup>	10 <sup>C</sup>	20 <sup>C</sup>	N	N	N	N	N	N

\* N: no break  
P: partial break  
C: complete break

## GENERAL CHARACTERISTICS - SPECIAL GRADES

CHARACTERISTICS	CONDITIONS	STANDARD	EQUIVALENT	UNITS	ANTISTATIC		MV	MP	MV	MV	INIT
					MH	MV					
					1657	1074	1041	1878	3000	6100	1100
SHORE HARDNESS	instantaneous	ISO 868	ASTM D 2240	Shore D	40	40	60	58	35	58	75
DENSITY		ISO 1183		g/cm <sup>3</sup>	1.14	1.07	1.04	1.09	1.02	1.04	1.12
MELTING POINT		ISO 11357	ASTM D 3418	°C	204	158	170	195	158	170	198
VICAT SOFTENING POINT	under 10 N	ISO 306	ASTM D 1525	°C	160	-	-	169	-	-	-
FLEXURAL MODULUS	at 23°C and 50% RH	ISO 178	ASTM D 790	MPa	80	80	270	180	45	210	440
TENSILE – STRESS AT BREAK	v = 50 mm/min	ISO 527		MPa	32	30	44	60	35	48	71
TENSILE – STRAIN AT BREAK	v = 50 mm/min	ISO 527		%	3500	3700	450	550	500	-	300
WATER ABSORPTION AT EQUILIBRIUM	at 23°C and 50% RH	ISO 62	ASTM D 570	%	4.5	1.4	0.9	1.35	1	0.9	-
WATER ABSORPTION SATURATION	24h in water at 23°C	ISO 62	ASTM D 570	%	120	48	12	6.7	28	11	-
MELT INDEX	235°C / 1kg	ISO 1133	ASTM D 1238	g/10 mn	27	14	7	8	-	-	1.7
SURFACE RESISTIVITY		IEC 60093	ASTM D 257	Ohm/sq	1 10 <sup>9</sup>	3 10 <sup>9</sup>	-	-	-	-	-
VOLUMIC RESISTIVITY				Ohm.cm	2 10 <sup>9</sup>	2.5 10 <sup>9</sup>	-	-	-	-	-

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