



*Automotive market*

**TECHNYL®**  
**polyamide range**

**Technical data**

# Selection of TECH

PROPERTIES	NORM	UNIT	CONDITIONS	UNREINFORCED					
				PA 6.6			PA 6.6/6		
				TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	
				A 216	A 217	A 218	B 218	A 205F	
				Nat. or Blk 1N					
<b>PHYSICAL</b>									
Water absorption (24 h at 23°C)	ISO 62	%		1.3	1.3	1.3	1.6	1.2	
Density	ISO 1183-A	g/cm <sup>3</sup>		1.14	1.14	1.14	1.14	1.14	
Molding shrinkage Parallel	RHODIA-EP	%		1.9	1.9	1.9	1.4	1.9	
Molding shrinkage normal or perpendicular	RHODIA-EP	%		1.9	1.9	1.9	1.4	1.9	
<b>MECHANICAL PROPERTIES</b>									
Tensile modulus	ISO 527 type 1 A	MPa	d.a.m / cond.*	3000 / 1500	3000 / 1500	3000 / 1500	3000 / 1100	3200 / 1600	
Tensile strength at yield	ISO 527 type 1 A	MPa	d.a.m / cond.*	85 / 60	90 / 60	90 / 60	85 / 50	85 / 50	
Tensile strain at yield	ISO 527 type 1 A	%	d.a.m / cond.*	3.9 / 30	6 / 30	6 / 30	3.6 / 25	4 / 10	
Tensile strength at break	ISO 527 type 1 A	MPa	d.a.m / cond.*	55 / 65	55 / 70	55 / 70	75 / 60	60 / 40	
Tensile strain at break	ISO 527 type 1 A	%	d.a.m / cond.*	30 / 300	35 / 300	35 / 300	30 / 300	25 / 200	
Flexural modulus	ISO 178	MPa	d.a.m / cond.*	2900 / 1300	2900 / 1450	2900 / 1450	3000 / 1200	2900 / 1300	
Flexural maximum stress	ISO 178	MPa	d.a.m / cond.*	120 / 50	120 / 50	120 / 50	125 / 50	120 / 50	
Charpy notched impact strength	ISO 179/1eA	kJ/m <sup>2</sup>	d.a.m / cond.*	4.5 / 14	4.5 / 14	4.5 / 14	5 / 16	4.5 / 8	
Charpy unnotched impact strength	ISO 179/1eU	kJ/m <sup>2</sup>	d.a.m / cond.*	NB / NB	NB / NB	NB / NB	NB / NB	NB / NB	
Izod notched impact strength	ISO 180/1A	kJ/m <sup>2</sup>	d.a.m / cond.*	4 / 12	4 / 12	4 / 12	5/16	4.5 / 6	
Izod unnotched impact strength	ISO 180/1U	kJ/m <sup>2</sup>	d.a.m / cond.*						
<b>THERMAL</b>									
Melting Temperature	ISO 11357	°C		263	263	263	242	263	
Heat deflection temperature. 1.8 Mpa	ISO 75/Af	°C		75	75	75	67	75	
Heat deflection temperature 0.45 Mpa	ISO 75/Bf	°C		223				220	
Coef. of Linear thermal expansion parallel (23°C to 85°C)	ISO 11359	E-5 / °C		7	7	7	7	7	
<b>FLAMMABILITY</b>									
Flammability UL 94 (thickness 0.4 mm)	ISO 1210/UL 94	-						V2	
Flammability UL 94 (thickness 0.8 mm)	ISO 1210/UL 94	-						V2	
Flammability UL 94 (thickness 1.6 mm)	ISO 1210/UL 94	-			HB	V2	HB	V2	
Flammability UL 94 (thickness 3.2 mm)	ISO 1210/UL 94	-					V2		
Glow wire flammability index (thickness = 1.6)	IEC 60695-2-12	°C		650	650	650		850	
oxygen index	ISO 4589	%		26.5	26	26	23.5	28.5	
<b>ELECTRICAL</b>									
Relative permittivity	IEC 60250	-	d.a.m / cond.*	2.9 / 3.2	2.9 / 3.2	2.9 / 3.2	3 / 3.2	2.9 / 3.2	
Dissipation factor	IEC 60250	-	d.a.m / cond.*	0.03 / 0.08	0.029 / 0.08	0.029 / 0.08	0.03 / 0.1	0.03 / 0.08	
Volume resistivity	IEC 60093	E14.Ω.cm	d.a.m / cond.*	40 / 1	10 / 1	10 / 1	10 / 0.1	10 / 0.1	
Surface resistivity	IEC 60093	E14.Ω	d.a.m / cond.*	10 / 0.1	10 / 0.1	10 / 0.1	1 / 0.1	5 / 0.1	
Dielectric strength	IEC 60243	kV/mm	d.a.m / cond.*	30 / 26	27 / 26	27 / 26	26 / 24	27 / 26	
Comparative tracking index sol. A	IEC 60112	V	d.a.m / cond.*	600 / 575	600 / 600	500 / 575	600 / 600	600 / 600	
Comparative tracking index sol. B	IEC 60112	V	d.a.m / cond.*	525 / -	450 / -	350 / -	575 / -	550 / -	
<b>SPECIFIC</b>									
Injection pressure vs. Standard PA6		%							
Spiral length vs. Standard PA	RHODIA	%							

\*d.a.m = dry as moulded / cond. = conditioned according ISO 1110

This list is not exhaustive, more products are visible at [www.rhodia-ep.com](http://www.rhodia-ep.com).

# TECHNYL<sup>®</sup> grades for Automot

FAST CYCLING			IMPACT MODIFIED			HIGH VISCOSITY			GLASS FIBRE		
PA 6.6					PA 6.6/6	PA 6.6					
TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>	TECHNYL <sup>®</sup>
A 221	A 222	A 225F	A 238	A 246M	B 230	A 319	A 402	A 218 V15	A 218 V20	A 218 V25	A 218 V30
Blk 51N	Blk 1N			Blk 21N	Nat. or Blk	Nat. or Blk		Blk 21N	Blk 21N	Blk 21N	Nat. or Blk
1.1	1.1	1.1	1.1	1.05	1.35	1.3	1.5	1.1	1	0.9	0.8
1.14	1.14	1.14	1.1	1.08	1.09	1.14	1.14	1.24	1.29	1.32	1.37
1.2	1.4	1.5	1.9	1.9	2.2	2.2	1.9	0.8	0.7	0.6	0.5
1.2	1.5	1.8	1.9	1.9	2.05	2.1	1.9	1.1	0.95	0.85	0.8
3200 / 2000	3200 / 2000	3200 / 2000	2550 / 1400	1900 / 600	2300 / 900	2900 / 1700	3100 / 1300	6200 / 4300	7400 / 5300	8400 / 6300	10000 / 7500
95 / 65	95 / 65	85 / 55	70 / 40	47 / 42	60 / 45	85 / 55	80 / 60			165 / -	
5 / 25	7 / 25	5 / -	5 / 15	20 / 210	5 / 12	7 / 25	8 / 30				
75 / 50	75 / 50	70 / 50	50 / 40	44 / 35	50 / 40	60 / 60	60 / -	125 / 90	145 / 100	165 / 120	190 / 135
20 / 170	20 / 105	20 / 100	30 / 200	65 / 210	50 / 250	35 / 300	60 / 250	4 / 8	4 / 5	3 / 4	3 / 4
3100 / 1400	3100 / 1400	3150 / 1400	2250 / 1200	1800 / 700	2000 / 700	2600 / 1300	2800 / 1300	5300 / 3500	6400 / 4200	7300 / 5000	8400 / 5900
125 / 55	125 / 55	125 / 55	95 / 47	70 / 27	80 / 27	120 / 50	120 / 75	190 / 115	212 / 135	235 / 156	260 / 175
4 / 12	4 / 12	4 / 4.5	8 / 20	55 / 100	8 / 30	6 / 15	7 / 30	7 / 7.5	8 / 10	10 / 13	12 / 16
NB / NB	NB / NB	NB / NB	NB / NB	NB / NB	NB / NB	NB / NB	NB / NB	41 / 67	48 / 79	57 / 87	80 / 95
4 / 12	4 / 12	5 / 12	8 / 16	60 / 80	7 / 18	6 / 15	6 / 35	6 / 9	7 / 13	8.5 / 15	11 / 16
263	263	263	263	263	242	263	263	263	263	263	263
80	80	80	70	65	62	70	75	245	250	255	255
>200				190	165		220		255	255	
6.5	6.5	6.5	7	7	7	7	7	3.5	3	2.7	2.5
		V2									
		V2									
		V2	HB	HB	HB	HB		HB	HB	HB	HB
700	700	960							650		650
26	26		21	24.5	21	26	27	24	23	23	23
2.9 / 3.2	2.9 / 3.2	2.9 / 3.2	3.2 / 3.8	3.2 / 4	3 / 3.2	3.2 / 4.2	3 / 4	3.7 / 4	3.7 / 4	3.7 / 4	
0.03 / 0.08	0.029 / 0.08	0.02 / 0.08	0.02 / 0.04	0.02 / 0.06	0.02 / 0.07	0.02 / 0.1	0.02 / 0.1	0.01 / 0.11	0.01 / 0.11	0.01 / 0.11	
10 / 1	10 / 1	40 / 1	10 / 0.01	10 / 0.1	1 / 0.01	20 / 0.1	10 / 0.01	10 / 0.1	10 / 0.1	10 / 0.1	
10 / 0.01	1 / 0.01	1 / 0.04	1 / 0.1	1 / 0.1	5 / 0.01	2 / 0.01	0.1 / 0.01	6 / 0.01	6 / 0.01	6 / 0.01	
27 / 26	27 / 26	27 / 26	32 / 32	30 / 38	32 / 30	28 / 26	27 / 26	31 / 30	32 / 28	32 / 28	
600 / 600	575 / 600	600 / 600	500 / 600	575 / 600	600 / 600	600 / 600	600 / 600	450 / 325	450 / 350	450 / 425	
500 / -	450 / -		450 / -	450 / -	475 / -	525 / -					

# itive market

FIBRE REINFORCED				GLASS FIBRE REINFORCED AND IMPACT MODIFIED		GLASS FIBRE REINFORCED AND LASER MARKABLE	MINERAL FILLED	MINERAL AND GLASS FILLED	GLASS BEAD REINFORCED			FLAME RE
			PA 6.6/6	PA 6.6			PA 6.6/6					
TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®	TECHNYL®
A 218 V35	A 218 V40	A 218 V50	B 218L V30	A 238 V13	A 248 V33	A 216T V33	B 218 MX30	A 218 MZ15 V25	A 216 S30	A 218 S40	A 20H1 V25	
Nat. or Blk	Nat. or Blk	Nat. or Blk	Blk 44N	Blk 21N	Blk 21N	Blk 1N	Nat. or Blk	Blk 31N				
0.75	0.7	0.6	0.95	0.75	1.25		1.1		0.75	0.7	1	
1.41	1.46	1.57	1.37	1.19	1.39	1.4	1.38	1.47	1.37	1.47	1.14	
0.45	0.4	0.3	0.5	0.85	0.5	0.45	0.6	0.4	1.6	1.4	0.9	
0.75	0.7	0.5	0.7	1	0.7	0.75	0.6	0.7	1.6	1.4	0.55	
11400 / 8700	13000 / 9900	16200 / 12500	9800 / 5900	5500 / 3600	8500 / 6000	11000 / 8300	7400 / 4000	10000 / -	4500 / 2500	5000 / 3000	9000 / 6000	
210 / 150	225 / 165	240 / 175		100 / 60	130 / 100		85 / 50		80 / -	90 / 55		
		2 / 2.5		4 / 8	4 / 8		4 / 12		4 / -	4 / 20		
210 / 150	225 / 165	240 / 175	185 / 115	100 / 60	130 / 100	200 / 145	80 / 50	135 / -	80 / 60	85 / 50	135 / 100	
3 / 4	2 / 3	2 / 2.5	3 / 8	4 / 8	4 / 8	3 / 4	4 / 40	2 / -	9 / 12	15 / 35	2 / 3.5	
9500 / 6800	10800 / 7800	13500 / 10000	8300 / 4700	4200 / 2500	7800 / 5500	9200 / 6400	6000 / 2600	9000 / -	3850 / 1900	4700 / 2450	8000 / 5000	
286 / 195	305 / 215	345 / 250	230 / 140	150 / 100	235 / 130	280 / 190	140 / 65	210 / -	135 / 65	150 / 75		
13.5 / 18.5	15 / 19	16 / 18	11 / 16	6 / 8	14 / 22	13 / 17	3 / 6	5 / -	3.5 / 5	4 / 7.5	6 / 8	
95 / 100	97 / 98	95 / 100	80 / 92	65 / 60	80 / 90	90 / 98	40 / 110	45 / -	20 / NB	25 / NB	40 / 45	
13 / 18	13 / 18	15 / 18	11 / 19	8 / 10	15 / 18	12 / 17	3 / 5	4 / -	2.5 / 5	3 / 7	6 / 8	
263	263	263	242	263	263	263	242	263	263	263	263	263
255	255	255	230	225	248	255	180	240	95	100	250	
				250	255		235					
2.2	2	1.5	2.6	5	2.5	2.3	5		6	6		
HB	HB	HB		HB	HB		HB	HB	HB	HB	HB	
							650			650		
23	23	23					26			26		
	3.7 / 4	3.7 / 4		3.5 / 4	3.5 / 4.5		3.4 / 3.9		3.8 / 5	4 / 5		
	0.01 / 0.11	0.01 / 0.11		0.001 / 0.05	0.01 / 0.06		0.02 / 0.08		0.02 / 0.11	0.01 / 0.11		
	10 / 0.1	10 / 0.1		10 / 0.01	10 / 0.01		6 / 0.01		5 / 1	10 / 0.1		
	6 / 0.01	6 / 0.01		1 / 0.01	10 / 0.1		0.1 / 0.001		5 / 0.005	5 / 0.005		
	35 / 30	35 / 30		35 / 28	34 / 29		35 / 30		30 / 26	30 / 26		
	450 / 450	450 / 450			450 / 475		550 / 550		600 / 500	450 / 400		
					325 / -		500 / -					







HIGH FLOW			HIGH FLOW AND HIGH ACOUSTIC INSULATION		HIGH FLOW AND HIGH STIFFNESS		HIGH FLOW AND UV PROTECTED			HIGH FLOW AND REINFORCED FLAME RETARDANT	
HIGH FLOW PA 6											
TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL STAR™	TECHNYL FORCE
S 218 V35	S 218MZ20 V10	S 218 MT40	S 218dB1 M50	S 218dB2 MV60	SX 218 V50	SX 218 V60	S 216L2 V30	SX 218L2 V60	S 216L1 V30	S 60G1 V30	SX 218 LGF 30
Blk 31N	Blk 2N	Blk 23N	Blk 36N	Blk 26N	Blk Z	Blk Z	Blk 1N	Nat. or Blk	Coloured		Blk 31N
0.9		0.72			0.72	0.55		0.55		0.9	0.95
1.41	1.36	1.45	1.75	1.89	1.55	1.65		1.66		1.43	1.34
0.3		1	1.0					0.01		0.4	0.21
0.6		1.1	1.1					0.01		0.7	0.27
11700 / 7400	7800 / -	6000 / 2400	4600 / -	7800 / 4850	17000 / 11600	21000 / 15500	10400 / -	21000 / 15500	10400 / -	11760 / 7010	10000 / 7000
195 / 115	110 / -	86 / 50	54 / -	84 / 50	230 / 162	240 / 165	160 / -	240 / 165	160 / -	147 / 97	170 / 120
3 / 4.5	2.8 / -	7 / 25	1.8 / -	2 / 6	2.6 / 4	2.5 / 4		2.4 / 3.7			2 / 2.5
10000 / 6200		5500 / 1850			15500 / 10000	19000 / 13200		19000 / 13200		10700 / 6900	9000 / 6400
295 / 195		150 / 65			320 / 255	385 / 260				240 / 170	250 / 195
13 / 19	3 / -	5 / 6			15 / 20	15 / 20	8.1 / -	15 / 20	8.1 / -	10 / 13	26 / 26
72 / 80	35 / -	45 / 220	30 / -	34 / -	85 / 95	85 / 95	45 / -	85 / 95	45 / -	67 / -	
13 / 16	4 / -	5 / 7			15 / 22	15 / 22		15.2 / 22		9 / 12	
					90 / 100	90 / 100		90 / 100		54 / -	
222	222	222	222	222	222	222	222	222	222	222	222
210	186	90		190	210	215		215		205	215
										-	
										V-0	
					HB			HB		V-0	
										V-0	
										960	
										35	
										3.9 / 4.3	
										0 / 0.08	
										1.1 / -	
										40 / 29	
										600	
					-30	-30					
					175	190					







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Chemistry is our world, Responsibility is our way

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- the tests and experiments carried out in our laboratories.

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