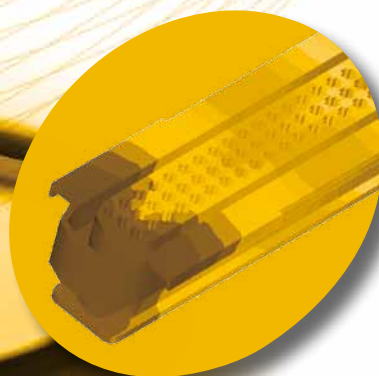
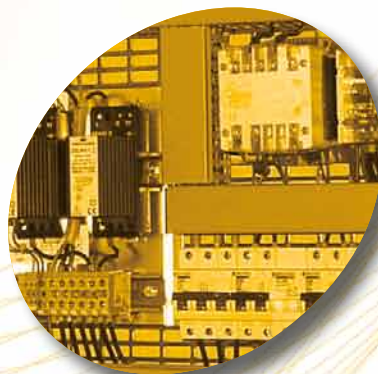


TECHNYL®



Electric and Electronics

TECHNYL®
polyamide range

Technical data



Chemistry is our world, Responsibility is our way

Selection of TECHNLY

PROPERTIES	STANDARDS	UNITS	CONDITIONS	UNREINFORCED FAST CYCLE		
				<i>Commercial reference</i>		
				TECHNLY® A 205F	TECHNLY® A 225F	TECHNLY® C 206F
<i>Polymer</i>				PA6.6	PA6.6	PA6
PHYSICAL						
Water absorption (24 h at 23°C)	ISO 62	%		1.2	1.1	1.3
Density	ISO 1183-A	g/cm ³		1.14	1.14	1.14
Moulding shrinkage parallel	RHODIA-EP	%		1.9	1.5	
Moulding shrinkage normal or perpendicular	RHODIA-EP	%		1.9	1.8	
MECHANICAL						
Tensile modulus	ISO 527 type 1 A	MPa	d.a.m / cond.*	3200 / 1600	3200 / 2000	2800 / 1200
Tensile strength at yield	ISO 527 type 1 A	MPa	d.a.m / cond.*	85 / 50	85 / 55	85 / 45
Tensile strain at yield	ISO 527 type 1 A	%	d.a.m / cond.*	4 / 10	5 / -	
Tensile strength at break	ISO 527 type 1 A	MPa	d.a.m / cond.*	60 / 40	70 / 50	
Tensile strain at break	ISO 527 type 1 A	%	d.a.m / cond.*	25 / 200	20 / 100	120 / 70
Flexural modulus	ISO 178	MPa	d.a.m / cond.*	2900 / 1300	3150 / 1400	2800 / 1000
Flexural maximum stress	ISO 178	MPa	d.a.m / cond.*	120 / 50	125 / 55	115 / 40
Charpy notched impact strength	ISO 179/1eA	kJ/m ²	d.a.m / cond.*	4.5 / 8	4 / 4.5	5.5 / 88
Charpy unnotched impact strength	ISO 179/1eU	kJ/m ²	d.a.m / cond.*	NB / NB	NB / NB	NB / NB
Izod notched impact strength	ISO 180/1A	kJ/m ²	d.a.m / cond.*	4.5 / 6	5 / 12	5 / 80
Izod unnotched impact strength	ISO 180/1U	kJ/m ²	d.a.m / cond.*			
THERMAL						
Melting temperature	ISO 11357	°C		263	263	222
Heat deflection temperature. 1.8 Mpa	ISO 75/Af	°C		75	80	80
Heat deflection temperature 0.45 Mpa	ISO 75/Bf	°C		220		185
Coef. of linear thermal expansion parallel (23 to 85°C)	ISO 11359	E-5 / °C		7	6.5	7
FLAMMABILITY						
Flammability UL94 (0.4 mm)	ISO 1210 / UL94	-		V-2	V-2	-
Flammability UL94 (0.8 mm)	ISO 1210 / UL94	-		V-2	V-2	V-2
Flammability UL94 (1.6 mm)	ISO 1210 / UL94	-		V-2	V-2	V-2
Flammability UL94 (3.2 mm)	ISO 1210 / UL94	-		V-2		V-2
Glow Wire Flammability Index (0.8 mm)	IEC 60695-2-12	°C				
Glow Wire Flammability Index (1.6 mm)	IEC 60695-2-12	°C		850	850	800
Glow Wire Ignitability Temperature (0.8 mm)	IEC 60695-2-13	°C				
Glow Wire Ignitability Temperature (1.6 mm)	IEC 60695-2-13	°C				
Oxygen Index	ISO 4589	%		28		
ELECTRICAL						
Relative permittivity	IEC 60250	-	d.a.m / cond.*	2.9 / 3.2	2.9 / 3.2	3.4 / 3.9
Dissipation factor	IEC 60250	-	d.a.m / cond.*	0.03 / 0.08	0.02 / 0.08	0.02 / 0.1
Volume resistivity	IEC 60093	E14.Ω.cm	d.a.m / cond.*	10 / 0.1	40 / 1	10 / 0.001
Surface resistivity	IEC 60093	E14.Ω	d.a.m / cond.*	5 / 0.1	1 / 0.04	0.1 / 0.001
Dielectric strength	IEC 60243	kV/mm	d.a.m / cond.*	27 / 26	27 / 26	22 / 18
Comparative tracking index sol. A	IEC 60112	V	d.a.m / cond.*	600 / 600	600 / 600	600 / -
Comparative tracking index sol. B	IEC 60112	V	d.a.m / cond.*	550 / -		

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

This list is not exhaustive, more products are visible at www.rhodia-ep.com.

L[®] grades for Electrical and

IMPACT MODIFIED			GLASS FIBRE AND/OR MINERAL REINFORCED								HYDROLYSIS RESISTANT
TECHNYL [®] A 238	TECHNYL [®] A 268	TECHNYL [®] A 238 V13	TECHNYL [®] B 218 MX30	TECHNYL [®] A 218 MT15 V25	TECHNYL [®] A 218 V15	TECHNYL [®] A 218 V30	TECHNYL [®] A 218 V50	TECHNYL STAR [™] S 218 V35	TECHNYL STAR [™] SX 216 V50	TECHNYL STAR [™] SX 216 V60	TECHNYL [®] A 218W V30
PA6.6	PA6.6	PA6.6	PA6.6/6	PA6.6	PA6.6	PA6.6	PA6.6	High Flow PA6	High Flow PA6	High Flow PA6	PA6.6
1.1	0.8	0.75	1.1	0.7	1.1	0.8	0.6	0.9	0.72	0.55	0.75
1.1	1.096	1.19	1.38	1.47	1.24	1.37	1.57	1.41	1.55	1.65	1.35
1.9		0.85	0.6	0.6	0.8	0.5	0.3				0.5
1.9		1	0.6	0.8	1.1	0.8	0.5				0.8
2550 / 1400	2200 / 800	5500 / 3650	7400 / 4000	9800 / 5700	6200 / 4300	10000 / 7500	16200 / 12500	11700 / 7400	17000 / 11600	21000 / 15500	9200 / 6600
70 / 40			85 / 50								
5 / 15			4 / 12								
50 / 40	50 / 35	100 / 60	80 / 50	130 / 70	125 / 90	190 / 135	240 / 175	195 / 115	230 / 162	240 / 165	190 / 135
30 / 200	45 / 180	4 / 8	4 / 40	2.5 / 9	4 / 8	3 / 4	2 / 2.5	3 / 4.5	2.6 / 4	2.4 / 3.7	3.0 / 6
2250 / 1200	2160 / 790		6000 / 2600	9000 / 4500	5300 / 3500	8400 / 5900	13500 / 10000	10000 / 6200	15500 / 10000	19000 / 13200	9000 / 6000
95 / 47		150 / 100	140 / 65	215 / 130	190 / 115	260 / 175	345 / 250	295 / 195	320 / 255	385 / 260	295 / 200
8 / 20	15 / 26	6 / 8	3 / 6	3 / 3.5	7 / 7.5	12 / 16	16 / 18	13 / 19	15 / 20	15 / 20	11 / 17
NB / NB		65 / 60	40 / 110	40 / 60	41 / 67	80 / 95	95 / 97	72 / 80	85 / 95	85 / 95	90 / 100
8 / 16		8 / 10	3 / 5	3.5 / 4.5	6 / 9	11 / 16	14.5 / 17	13 / 16	15 / 22	15.2 / 22	10 / 16
								75 / 80	90 / 100	90 / 100	
263	263	263	242	263	263	263	263	222	222	222	263
70	60	225	180	240	245	255	255	210	210	215	250
7		5	5	3.5	3.5	2.5	1.5				2.8
-	-	-	-	-	-	-	-	-	-	-	-
HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
			650	650	700	700	650	650	650	650	700
21			26		24	23	23				
3.2 / 3.8		3.5 / 4	3.4 / 3.9	3.7 / 5	3.7 / 4	3.7 / 4	3.7 / 4				3.7 / 4.3
0.02 / 0.04		0.001 / 0.05	0.02 / 0.08	0.019 / 0.08	0.01 / 0.11	0.01 / 0.11	0.01 / 0.11				0.02 / 0.08
10 / 0.01		10 / 0.01	6 / 0.01	80 / -	10 / 0.1	5 / 0.1	10 / 0.1				10 / 0.01
1 / 0.1		1 / 0.01	0.1 / 0.001	5 / 0.03	6 / 0.01	6 / 0.01	6 / 0.01				1 / 0.01
32 / 32		35 / 28	35 / 30	35 / 32	31 / 30	34 / 29	35 / 30				35 / 40
500 / 600			550 / 550	475 / 525	450 / 325	450 / 425	450 / 450		500 / -		600
450 / -			500 / -			350 / -					

Electronic markets

UNREINFORCED FLAME RETARDANT				REINFORCED FLAME RETARDANT							
TECHNYL® A 50H1	TECHNYL® B 50H1	TECHNYL® C 50H2	TECHNYL® C 52G1	TECHNYL® A 52G1 MZ20	TECHNYL® C 52G2 MV25	TECHNYL® C 52G3 MZ25	TECHNYL® A 31H1 MX35	TECHNYL® A 31T1 MZ40	TECHNYL® C 32H2 MX30	TECHNYL® A 60G1 V30	TECHNYL® A 60G1 V25
PA6.6	PA6.6/6	PA6	PA6	PA6.6	PA6	PA6	PA6.6	PA6.6	PA6	PA6.6	PA6.6
0.88	1.1	1.1		0.75	1.2	1	0.35	0.43		0.73	0.85
1.16	1.16	1.16	1.16	1.34	1.37	1.37	1.65	1.67	1.56	1.46	1.36
1.4	1.1	1.3		0.85	0.62	0.8	0.7			0.3	0.5
1.1	1	0.8		1	1.03	0.8	0.65			0.9	0.9
3900 / 2400	3600 / 2200	3700 / -	3500 / 1200	6500 / 4000	8000 / 3500	6000 / 2500	9300	6900 / 4000	8000 / 6000	11000 / 7410	10370 / 72
85 / 50	80 / 40	80 / 50	80 / 40		112 / 74						
4.2 / 22.3	4 / -										
85 / 50	80 / 45			85 / 56	108 / 53	80 / 35	72 / 50	77 / 47	70 / 35	130 / 94	145 / 94
15 / 140	10 / -	16 / 20	20 / -	2.5 / 3.5	2.4 / 3.0	3 / -	2.0 / 3.2	1.7 / 6.9	2.2 / 24	2.3 / 5.0	1.97 / 2.40
3200 / 2100	3200 / 2000	3500 / 2000	3000 / 1100	6550 / 3560		6000 / 2300	8350 / 5500		6700 / 2400		10500 / 5640
125 / -	105 / 70	110 / 70		148 / 76		136 / 56	110 / 85		135 / 45		224 / 146
3.2 / 10.1	4.5 / 12	5 / -	7 / -	2.7 / 5.1	4 / 7.2	3 / 5.8	3.5	2.2	3.5 / 4.4	6 / 9.5	
130 / NB	90 / NB	90 / NB	65 / -	40 / 56	43 / 74.5	45 / 60	16 / 20	35	25 / 65	55 / -	47 / 44
	3.0 / 10.0	3.5 / 15	5.0 / 50	4.2 / 7.6	4.6 / 8.2	4.5 / 7.9	1.5 / 2		2.0 / 3.1		
263	242	222	215	263	222	222	263	263	222	263	263
85	85	75	75	160	200	130	200	145	130	245	245
237											258
	6.5	6.5	7								2.9
V-0	V-0	-	-	-	-	-	-	-	-	-	-
V-0	V-0	V-0	-	V-2	V-2	V-2	V-2	-	V-2	V-0	V-0
V-0	V-0	V-0	-	V-2	V-2	V-2	V-1	-	V-2	V-0	V-0
V-0	V-0	V-0	V-2	V-2	V-2	V-2	V-0	-	V-0	V-0	V-0
960	960	960	850	960	900	960	960	960	960	960	960
960	960	960	850	960	960	960	960	960	960	960	960
725	725	700								775	775
725	725	700					775	775	775	775	775
34	33	36				31	45	46.5	35	35	33
	3.6 / 4	3.6 / 4					3.3 / 3.3		3.1 / -		
	0.02 / 0.06	0.02 / 0.06					0.02 / 0.05		0.01 / -		
	10.0 / -	10.0 / -					50 / 50		10 / -		
	10 / 0.01	10 / 0.01					7.0 / 1		1 / -		
	34 / 30	34 / 30	28				36 / 40	30 / 30	38 / 35		
600	600	600	600	525	500	525	600	400	550	600	550

REINFORCED FLAME RETARDANT

TECHNYL STAR™ S 60G1 V30	TECHNYL® A 20 V25	TECHNYL® A 20H1 V25	TECHNYL® A 21T3 V25	TECHNYL® A 21T3 V35	TECHNYL® A 20 V35	TECHNYL® C 30H1 V30	TECHNYL® A 30H1 V25 A 30H2 V25*	TECHNYL® A 30H1 V30
							*only in Asia	
High Flow PA6	PA6.6	PA6.6	PA6.6	PA6.6	PA6.6	PA6	PA6.6	PA6.6
0.9	0.75	1	1	0.8	0.6			
1.42	1.38	1.38	1.38	1.43	1.46	1.62	1.54	1.57
0.4	0.5	0.5	0.5		0.4	0.6		
0.7	0.9	0.9	0.9		0.55	0.8		
11760 / 7010	9000 / 6500	9000 / 6000	8200 / 5100	10800	12000 / 10000	11400 / 8050	8800 / 7000	9400 / 7500
147 / 97	140 / 105	135 / 100	136 / 81	150 / 110	170 / 140	114 / 85	95 / 78	98 / 80
2.3 / 5.3	2.0 / 4.1	2 / 3.5	2.7 / 6.2	2.6	2.0 / 3.0	1.8 / 6	2.5 / 3	2.2 / 3.5
10680 / 6900	7500 / 6000	8000 / 5000			10000 / 7500			9900 / 6800
243 / 169	250 / 155	200 / 125			260 / 200			
9.6 / 13	7 / 8	6 / 8	8 / 10		10 / 12	9 / 13	9 / 10	9.5 / 12
67 / -	35 / 40	40 / 45	65	70	65 / 70	37 / 40	45 / 47	38 / 50
9.1 / 12	8.0 / 9.1	6.0 / 8.0	8	10	10 / 12		9.8 / 11	11.5 / 15
54 / -								
222	263	263	263	263	263	222	263	263
205	250	250	250	250	255	197	220	226
	3	3	3	3	2.5			
-	-	-	-	-		-	-	-
V-0	V-0	V-0	V-2	V-1	V-0	V-0	V-0	V-0
V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
960	-	-	-	-	960	960	960	960
960	960	960	960	960	960	960	960	960
775					700	775	775	775
800	725					775	775	775
35	30.5	27	26.8	28	30.5			31
3.88 / 4.35	3.4 / 4.0	3.4 / 4.0	4.3 / -		3.4 / 5			3.3 / 3.6
0 / 0.08	0.02 / 0.05	0.02 / 0.1	0.02 / -		0.02 / 0.05			0.013 / 0.05
	10 / 0.1	10 / 0.1	3.2 / -		10 / 0.1			10 / -
1.1 / -	0.1 / 0.01	0.1 / 0.03	0.52 / -		0.1 / 0.01			1 / -
39.8 / 28.5	25 / 25	30 / -	25 / -		25 / 25			42 / 40
600	375	450	550	550	400	450	500	450
	350				325			



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- the extent of our knowledge of the products as listed,
- the tests and experiments carried out in our laboratories.

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