ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

Datasheet Engineering Plastics

	Material		Availability				Physical Properties		
	Material	Color	Rod diameter	Tube O.D.	Sheet thickness	Availability	Mass density (method D and E)	Moisture absorption at 23 °C and 50% RH (saturation)	Water absorption at 23 °C (saturation)
Test Standard							ISO 1183	ISO 62	ISO 62
Unit			mm	mm	mm		g/cm³	%	%
Condition of Specimen							Dry		
AS ZL 202	Nylon 6	White	6-310	25-310	0.3-100	✓	1.12-1.15	3.0±0.4	8.0±0.5
AS ZL 202 MO	Nylon 6 filled with molybdenum disulfide (MoS2)	Black	6-200	25-280	2-100	X	1.15	3	8
AS ZL 202 XN	Nylon 6 reinforced with nanoparticles	Ivory	6-150	-	8-100	✓	1.15	-	-
AS ZL 250	Nylon 6.6	Ivory	6-150	25-265	2-60	✓	1.15	2.8±0.3	8.0±0.5
AS ZL 250 SW	Nylon 6.6	Black	6-150	25-265	8-60	✓	1.15	2.8±0.3	8.0±0.5
AS ZL 250 HI	Nylon 6.6 impact modified	Ivory	10-100	-	8-50	X	1.08	-	2.2
AS ZL 250 PE	Nylon 6.6 with a solid lubricant	Light green	6-150	-	8-60	✓	1.12	2.2	8.5
AS ZL 250 GF30	Nylon 6.6 + 30% glass fiber	Black	6-160	-	8-100	✓	1.35	1.5	5.5
AS ZL 900	POM copolymer	White	6-500	25-500	0.5-150	✓	1.41-1.43	0.2	0.25
AS ZL 900 SW	POM-C	Black	6-500	25-500	2-150	✓	1.41-1.43	0.2	0.25
AS ZL 900 PE	POM copolymer with a solid lubricant	Light blue	6-150	-	8-100	✓	1.34	0.2	0.8
AS ZL 900 AS	Antistatic POM copolymer	Ivory	6-150	-	8-50	✓	1.35	-	-
AS ZL 900 XU ELS	Conductive POM copolymer filled with carbon nanotubes	Black	6-150	-	8-50	✓	1.41	-	-
AS ZL 900 XT	POM copolymer with a solid lubricant	Light grey	6-150	-	8-50	✓	1.44	0.2	0.6
AS ZL 900 XMD	Metal detectable POM copolymer	Sapphire blue	6-150	-	8-50	X	1.56	<0.1	-
AS ZL 900 H	POM homopolymer	White	6-150	-	8-100	✓	1.42-1.43	0.2	-
AS ZL 900 H SW	POM-C	Black	6-150	-	8-100	✓	1.42-1.43	0.2	-

ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

AS ZL 1400	PET copolymer	White	6-200	25-280	3-100	✓	1.36	~0.23	11 b
AS ZL 1400 SW	PET-C	Black	6-150	25-280	8-60	✓	1.36	~0.23	11 b
AS ZL 1400 HI	PET homopolymer impact modified	Natural	6-210	-	8-100	✓	1.4	0.3	0.5
AS ZL 1400 T	PET copolymer with a solid lubricant	Light grey	6-160	25-280	8-100	✓	1.38	~0.23	~0.5
AS ZL 1400 PBT	Polybutylene terephthalate	Ivory	6-150	-	8-100	X	1.3	-	0.5
AS ZL 1500	PEEK	Brown	5-200	25-280	8-60	✓	1.32	0.1	0.5
AS ZL 1500 T	PEEK filled with 10% carbon fiber, 10% grafite and 10% PTFE	Black	6-160	25-160	8-60	✓	1.48	0.06	-
AS ZL 1500 X	PEEK	Brown	5-200	25-160	8-60	✓	1.29	-	0.5
AS ZL 1500 GF30	PEEK filled with 30% glass fiber	Grey	8-90	25-160	10-50	X	1.51	0.11	0.4
AS ZL 1500 CA30	PEEK filled with 30% carbon fiber	Anthracite	8-90	-	10-50	X	1.4	-	0.4
AS ZL 1500 C20	Ceramic filled PEEK	White	8-90	-	10-50	X	1.49	-	0.4
AS ZL 1000	PEI	Amber	10-125	-	10-125	X	1.27	0.7	1.25
AS ZL 1000 GF30	PEI filled with 30% glass fiber	Grey	10-60	-	10-50	X	1.51	-	-
AS ZL 1900	Polyphenylenesulfide	Beige	10-60	-	10-50	X	1.35	-	0.02
AS ZL 1900 GF40	PPS filled with 40% glass fiber	Beige	10-50	-	10-50	X	1.64	-	0.02
AS ZL 2100	Polyphenylsulfone	Amber	10-150	-	10-100	X	1.29	0.37	1.1

(1): Data of the resin only.
(2): Made by a pin/rotating disc test according DIN ISO 7148-2 under following conditions: R_a = 0.35 – 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm^2 and time T>16h.

Dry: Dried at 80 °C and 1 mbar until weight is constant (moisture content less than 0.2%).
Moist: After storage in a standard atmosphere of 23 °C and 50% relative humidity (DIN 50014) until saturation.

ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

Datasheet Engineering Plastics

	Mechanical Properties														Electrical Properties											
	Tensile strength at break	Tensile strength at break	Elongation at break	Elongation at break	Modulus of elasticity in tension	Modulus of elasticity in tension	Charpy impact strength (+23 °C)	Charpy impact strength (-40 °C)	Charpy impact strength (notched)	Charpy impact strength (notched)	Hardness shore scale D	Time yield limit σ 1/1000 (23 °C/50% RH)	Time yield limit σ 1/1000 (100 °C)	Apparent modulus E C/1000 2O (23 °C/50% RH)	Dielectric constant 1 MHz	Dielectric constant	Dissipation factor tan δ (1 MHz)	Dissipation factor tan δ	Dielectric strength	Dielectric strength	Volume resistivity	Volume resistivity	Surface resistivity ROA	Surface resistivity ROA	Resistance to tracking (KA/KB method)	Resistance to tracking (KC method)
Test Standard	ISO 527	ISO 527	ISO 527	ISO 527	ISO 527	ISO 527	ISO 179/1eU	ISO 179/1eU	ISO 179/1eA		ISO 868	ISO 899	ISO 899	ISO 899	IEC 250	IEC 250	IEC 250	IEC 250	IEC 243	IEC 243	IEC 93	IEC 93	IEC 93	IEC 93	IEC 112	IEC 112
Unit	MPa	MPa	%	%	MPa	MPa	kJ/m^2	kJ/m^2	kJ/m^2	kJ/m^2		MPa	MPa	MPa					kV/mm	kV/mm	Ω·cm	Ω·cm	Ω	Ω		
Condition of Specimen	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Dry	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Moist	Dry	Moist	Dry/Moist	Dry/Moist
AS ZL 202	80	50	50-100	200	3000	1500	No break	No break	70	-	82	5.5	2.5	230	3.5	7	0.023	0.3	100	60	10^{15}	10^{12}	10^{13}	10^{10}	KB>600	KC>600
AS ZL 202 MO	75	-	25	-	2700	-	No break	-	-	-	80	-	-	-	-	-	-	-	-	-	>10^{12}	-	>10^{12}	-	-	-
AS ZL 202 XN	93	-	5	-	4200	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	>10^{12}	-	10^{11}	-	-	-
AS ZL 250	80	60	50	150	3200	1600	No break	No break	80	-	80	6	3.5	400	3.2	5	0.026	0.2	120	80	10^{15}	10^{12}	10^{13}	10^{10}	KB>600	KC>600
AS ZL 250 SW	80	60	50	150	3200	1600	No break	No break	80	-	80	6	3.5	400	3.2	5	0.026	0.2	120	80	10^{15}	10^{12}	10^{13}	10^{10}	KB>600	KC>600
AS ZL 250 HI	50	-	32	-	2000	-	No break	No break	80	18	-	-	-	-	-	-	-	-	31	-	-	-	>10^{12}	-	-	-
AS ZL 250 PE	65	-	11	-	2700	-	35	-	3	-	80	-	-	-	3.3	-	-	-	-	-	10^{15}	-	10^{13}	-	-	-
AS ZL 250 GF30	100	-	8	-	4800	-	20	-	-	-	85	-	-	-	-	-	-	-	30	-	>10^{12}	-	10^{11}	-	-	-
AS ZL 900	70	-	40	-	3000	-	No break	80	-	-	81	14	-	-	3.8	-	0.024	-	>20	-	10^{15}	-	-	-	KB>600	-
AS ZL 900 SW	70	-	40	-	3000	-	No break	80	-	-	81	14	-	-	3.8	-	0.024	-	>20	-	10^{15}	-	-	-	KB>600	-
AS ZL 900 PE	40	-	7	-	2200	-	17	-	2.5	-	77	-	-	-	4.4	-	0.003	-	-	-	10^{14}	-	10^{14}	-	-	-
AS ZL 900 AS	40	-	72	-	1380	-	No break	-	-	-	74	-	-	-	-	-	-	-	14	-	10^{9}-10^{10}	-	10^{9}-10^{10}	-	-	-
AS ZL 900 XU ELS	69	-	11	-	3600	-	80	-	3.4	-	80	-	-	-	-	-	-	-	-	-	10^{4}	-	10^{4}	-	-	-
AS ZL 900 XT	63	-	22	-	2800	-	-	-	-	-	80	-	-	-	3.7	-	-	-	33	-	>10^{13}	-	>10^{13}	-	-	-
AS ZL 900 XMD	56	-	10	-	3200	-	90	-	-	-	81	-	60	-	-	-	-	-	-	-	-	-	>10^{12}	-	-	-
AS ZL 900 H	72	-	40	-	3100	-	No break	-	11	-	84	-	-	-	-	-	-	-	-	-	>10^{12}	-	>10^{12}	-	-	-

ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

AS ZL 900 H SW	72	-	40	-	3100	-	No break	-	11	-	84	-	-	-	-	-	-	-	-	-	$>10^{12}$	-	$>10^{12}$	-	-	-
AS ZL 1400	80	-	20	-	3200	-	82	-	14	-	81	12	-	-	3.3	-	0.02	-	50	-	10^{16}	-	-	-	KA>450	KC>600
AS ZL 1400 SW	80	-	20	-	3200	-	82	-	14	-	81	12	-	-	3.3	-	0.02	--	50	-	10^{16}	-	-	-	KA>450	KC>600
AS ZL 1400 HI	85	-	23	-	3250	-	59	-	3.9	-	84	-	-	-	-	-	-	-	-	-	-	-	$>10^{13}$	-	-	-
AS ZL 1400 T	75	-	5	-	3230	-	23	-	10	-	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AS ZL 1400 PBT	56	-	>50	-	2600	-	No break	-	6	-	80	-	-	-	3.2	-	-	-	-	-	$5x10^{13}$	-	$>10^{12}$	-	-	-
AS ZL 1500	97	-	25	-	3600	-	No break	-	-	-	88	-	-	-	3.2	-	0.004	-	20	-	10^{16}	-	-	-	-	-
AS ZL 1500 T	141	-	2	-	9000	-	-	-	-	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AS ZL 1500 X	95	-	30	-	3500	-	No break	-	6.5	-	87	-	-	-	-	-	0.005	-	-	-	10^{15}	-	10^{15}	-	-	-
AS ZL 1500 GF30	155	-	2	-	11000	-	11.3	-	8.9	-	91	-	-	-	3.2	-	0.004	-	20	-	10^{16}	-	-	-	-	-
AS ZL 1500 CA30	240	-	1.7	-	25	-	45	-	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AS ZL 1500 C20	95	-	20	-	4100	-	No break	Section break	7 break	7 break	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AS ZL 1000	105	-	60	-	3200	-	No break	-	-	-	86	-	-	-	-	-	-	-	-	-	$>10^{13}$	-	$>10^{13}$	-	-	-
AS ZL 1000 GF30	169	-	-	-	9300	-	-	-	-	-	93	-	-	-	3.4	-	0.0023	-	-	-	$>10^{13}$	-	$>10^{15}$	-	-	-
AS ZL 1900	33	-	-	-	4200	-	No break	-	-	-	-	-	-	-	-	-	-	-	-	-	$>10^{12}$	-	$>10^{12}$	-	-	-
AS ZL 1900 GF40	185	-	1.9	-	14000	-	45	-	-	-	-	-	-	-	-	-	-	-	-	-	$>10^{12}$	-	$>10^{12}$	-	-	-
AS ZL 2100	70	-	>60	-	2300	-	No break	-	-	-	84	-	-	-	-	-	-	-	-	-	$>10^{13}$	-	$>10^{15}$	-	-	-

(1): Data of the resin only.
(2): Made by a pin/rotating disc test according DIN ISO 7148-2 under following conditions: R_a = 0.35 – 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm^2 and time T>16h.

Dry: Dried at 80 °C and 1 mbar until weight is constant (moisture content less than 0.2%).
Moist: After storage in a standard atmosphere of 23 °C and 50% relative humidity (DIN 50014) until saturation.

ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

Datasheet Engineering Plastics

	Thermal Properties												Friction Properties
	Heat distortion temperature (method A)	Heat distortion temperature (method B)	Melting point (method A)	Max. service temperature for few hours operation	TEP 5.000 hours (50% of tensile strength) (1)	TEP 20.000 hours (50% of tensile strength) (1)	Thermal coefficient of linear expansion	Thermal conductivity (method A)	Specific heat	Fire performance (flameability according VDE)	Fire performance (flameability of interior materials in passanger cars h>1 mm)	Fire performance (flameability according UL standards, thickness of specimen 1.6 mm)	Resistance to wear (2)
Test Standard	ISO 75	ISO 75	ISO 3146		IEC 216	IEC 216	DIN 53752		IEC 1006	VDE 0304	FMVSS 302	UL 94	ISO 7148-2
Unit	°C	°C	°C	°C	°C	°C	$1/K \cdot 10^{-5}$	W/(K·m)	J/(g·K)		mm/min		µm/km
Condition of Specimen	Dry	Dry					Dry	Dry	Dry	Dry	Moist		Dry
AS ZL 202	55-75	>160	220	≤180	90	75	7-10	0.23	1.7	11 b	<100	HB	-
AS ZL 202 MO	-	-	220	-	-	-	-	-	-	-	-	HB	-
AS ZL 202 XN	168	-	215	-	-	140	-	-	-	-	-	HB	-
AS ZL 250	100	>200	255	≤200	95	80	7-10	0.23	1.7	11 b	<100	HB	-

ASEC Kunststoffen B.V.
Marketing 17
6921 RE Duiven
The Netherlands

T. +31 316 84 44 01
F. +31 847 14 00 75
E. info@aseckunststoffen.nl
I. www.aseckunststoffen.nl

AS ZL 250 SW	100	>200	255	≤200	95	80	7-10	0.23	1.7	11 b	<100	HB	-
AS ZL 250 HI	64	132	263	-	-	-	-	-	-	-	-	HB	-
AS ZL 250 PE	120	-	-	-	-	-	8.5	-	-	-	-	HB	4.3
AS ZL 250 GF30	250	250	255	250	-	150	2-3	0.27	1.5	-	-	HB	-
AS ZL 900	110	160	164-168	-	-	100	11	-	1.5	BH 3-25 mm/min	-	HB	-
AS ZL 900 SW	110	160	164-168	-	-	100	11	-	1.5	BH 3-25 mm/min	-	HB	-
AS ZL 900 PE	120	-	-	-	-	-	14	-	-	-	-	HB	2.1
AS ZL 900 AS	-	-	165	-	-	-	-	-	-	-	-	-	-
AS ZL 900 XU ELS	-	-	175	-	-	-	-	-	-	-	-	-	-
AS ZL 900 XT	98	-	165	140	-	100	-	-	-	-	-	HB	3
AS ZL 900 XMD	105	-	-	100	-	-	120	-	10	-	-	-	-
AS ZL 900 H	-	-	178	-	-	-	10	-	-	-	-	HB	-
AS ZL 900 H SW	-	-	178	-	-	-	10	-	-	-	-	HB	-
AS ZL 1400	67	165	255	160	115	100	6	-	-	11 b	<100	HB	22
AS ZL 1400 SW	67	165	255	160	115	100	6	-	-	11 b	<100	HB	22
AS ZL 1400 HI	93.6	189.5	249	160	115	100	-	-	-	-	-	HB	1.9
AS ZL 1400 T	-	-	-	160	115	100	6	-	-	-	-	HB	1.1
AS ZL 1400 PBT	50	135	235	-	-	-	9-15	-	-	-	-	HB	-
AS ZL 1500	152	-	340	300	260	-	4.7	0.25	-	-	-	V0	-
AS ZL 1500 T	293	-	340	300	260	-	2.2	0.24	-	-	-	V0	-
AS ZL 1500 X	153	176	340	300	260	234	5.8	-	-	-	-	V0	-
AS ZL 1500 GF30	315	-	340	-	-	-	1.7	-	-	-	-	V0	-
AS ZL 1500 CA30	336	-	343	240	-	-	5	0.92	-	-	-	V0	-
AS ZL 1500 C20	155	210	±340	-	-	-	0.45	-	8	-	-	V0	-
AS ZL 1000	190	200	-	-	-	-	5	-	-	-	-	V0	-
AS ZL 1000 GF30	210	212	-	-	-	-	-	-	-	-	-	V0	-
AS ZL 1900	95	115	280	-	-	-	5.5	-	-	-	-	V0	-
AS ZL 1900 GF40	200	270	280	-	-	-	3	-	-	-	-	V0	-
AS ZL 2100	207	-	225	-	-	-	5.6	-	-	-	-	V0	-

(1): Data of the resin only.
(2): Made by a pin/rotating disc test according DIN ISO 7148-2 under following conditions: R_a = 0.35 – 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm^2 and time T>16h.

Dry: Dried at 80 °C and 1 mbar until weight is constant (moisture content less than 0.2%).
Moist: After storage in a standard atmosphere of 23 °C and 50% relative humidity (DIN 50014) until saturation.