

Leona™ Series Data Sheet



				PA Non reinforced				PA High molecular weight										PA Impact				PA Friction modified						
				General		Heat stabilized		General				Heat stabilized				Heat stabilized				Heat stabilized								
				1300S		1402S		1500		1700S		9400S		1502S		1702		TR161		TR382		1442 BK		1542 BK				
	Test method	Units	Condition	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	
Density	ISO 1183	g/cm ³		1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.11	-	1.08	-	1.17	-	1.17	-			
Equilibrium moisture content	ISO 62	%		-	2.5	-	2.5	-	2.5	-	2.5	-	2.8	-	2.5	-	2.5	-	1.9	-	1.7	-	-	2.4	-	2.4		
Tensile stress at yield	ISO 527	MPa	23°C50%RH	82	52	82	52	84	51	84	50	80	40	84	51	84	50	72	46	53	35	79	55	78	52			
Tensile strain at yield	ISO 527	%	23°C50%RH	4	24	4	24	4.5	26	4.5	27	4	22	4.5	26	4.5	27	4.5	22	5.5	28	4	18	4	27			
Tensile stress at break	ISO 527	MPa	23°C50%RH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	-	45	-	-	-	-	-			
Tensile strain at break	ISO 527	%	23°C50%RH	-	>100	-	>100	-	>100	-	>100	-	>100	-	>100	-	>100	15	>100	60	>100	-	-	-	-	-		
Tensile modulus	ISO 527	Gpa	23°C50%RH	3	1.2	3	1.2	2.9	1.0	3	1.1	2.7	0.7	2.9	1.0	3	1.1	2.4	1.1	1.9	0.7	3.3	1.5	3.3	1.3			
Flexural strength	ISO 178	MPa	23°C50%RH	113	42	113	42	110	39	115	39	97	30	110	39	115	39	88	38	73	30	115	51	114	46			
Flexural modulus	ISO 178	Gpa	23°C50%RH	2.7	1.1	2.7	1.1	2.7	0.9	2.8	0.9	2.3	0.7	2.7	0.9	2.8	0.9	2.2	1	2	0.7	2.9	1.4	2.9	1.2			
Charpy impact strength (Notched)	ISO 179	KJ/m ²		6	15	6	15	5	30	7	28	7	41	5	30	7	28	15	NB	80	NB	6	12	6	18			
Charpy impact strength (un-Notched)	ISO 179	KJ/m ²		NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	N B	N B	N B	N B	N B	N B	N B	N B			
Rockwell hardness	ISO 2039		scale R	120	108	120	108	120	105	120	105	120	-	120	105	120	105	114	98	107	89	-	-	-	-			
Rockwell hardness	ISO 2039		scale M	80	55	80	55	80	55	80	55	80	-	80	55	80	55	-	-	-	-	-	-	-	-			
Coefficient of liner thermal expantion	ASTMD 696	× 10 ⁻⁵ /k		8	-	8	-	8	-	8	-	-	-	8	-	8	-	7	-	11	-	7	-	7	-			
Temperature of distortion under load	ISO 75	°C	1.8 MPa	70	-	70	-	65	-	70	-	60	-	65	-	70	-	66	-	58	-	73	-	64	-			
Temperature of distortion under load	ISO 75	°C	0.45 MPa	190	-	190	-	195	-	215	-	165	-	195	-	215	-	209	-	183	-	210	-	201	-			
UL-94	UL-94	PLC	1.5 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
UL-94	UL-94	PLC	0.75 mm	V2	-	V2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
GWFI	IEC 60695-2-12	°C	3 mm	960		960		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Comparative tracking index	IEC 60112	V	3 mm	600	-	525	-	600	-	-	-	-	-	525	-	-	-	-	-	-	-	-	-	-	-			
Dielectric	IEC 60243	KV/mm		20	-	20	-	20	-	20	-	20	-	20	-	20	-	-	-	-	-	-	-	-	-			
Surface resistivity	IEC 60093	Ω	23°C50%RH	10 ¹³	-	10 ¹³	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	-	-	-	-	-	-	-	-			
Volume resistivity	IEC 60093	Ω · cm	23°C50%RH	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	-	-	-	-			
Mold shrinkage (para/perp to flow)	AsahiKasei method	%		1.3~2.0	-	1.3~2.0	-	1.3~2.0	-	1.3~2.0	-	-	-	1.3~2.0	-	1.3~2.0	-	1.7~2.2	-	1.7~2.5	-	1.9/2.3	-	1.8/2.2	-			

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- Be sure to read the relevant SDS before handling and use, and always follow the Important Precautions.
- Equilibrium moisture content: at 23°C, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

Leona™ Series Data Sheet



				PA GF reinforced																							
				General								Heat stabilized															
				13G15		1300G		13G43		13G50		14G15		14G30 BK		1402G		14G33		14G35		14G43		14G50		14G50 BK	
	Test method	Units	Condition	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Density	ISO 1183	g/cm ³	-	1.25	-	1.39	-	1.5	-	1.58	-	1.25	-	1.36	-	1.39	-	1.39	-	1.41	-	1.5	-	1.58	-	1.56	-
Equilibrium moisture content	ISO 62	%	-	-	2.1	-	1.7	-	1.4	-	1.3	-	2.1	-	1.8	-	1.7	-	1.7	-	1.4	-	1.3	-	1.3	-	
Tensile stress at yield	ISO 527	MPa	23°C50%RH	-	77	-	-	-	-	-	-	-	77	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tensile strain at yield	ISO 527	%	23°C50%RH	-	6	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tensile stress at break	ISO 527	MPa	23°C50%RH	107	73	190	135	207	150	237	183	107	73	202	135	190	135	208	143	210	149	221	160	237	183	246	177
Tensile strain at break	ISO 527	%	23°C50%RH	2.5	11	3	5	3	4.5	2	4	2.5	11	3	6	3	5	4	6	3	5	2	4	2	4	3	4
Tensile modulus	ISO 527	Gpa	23°C50%RH	5.8	3.6	10	8	12.7	10.2	16.9	13	5.8	3.6	10.5	7.4	10	8	9.8	7.8	11.7	8.6	14.9	11.5	16.9	13	17	12
Flexural strength	ISO 178	MPa	23°C50%RH	162	116	275	202	303	225	371	269	162	116	300	218	275	202	302	213	316	235	352	261	371	269	387	284
Flexural modulus	ISO 178	Gpa	23°C50%RH	4.8	3.3	9.0	6.8	11.7	8.7	13.6	11.0	4.8	3.3	9.4	7.1	9.0	6.8	9.6	6.7	11.2	8.6	13.1	10.6	13.6	11.0	15.7	12.1
Charpy impact strength (Notched)	ISO 179	KJ/m ²	-	6	5	11	16	12	18	14	21	6	5	13	16	11	16	13	16	14	17	14	20	14	21	18	21
Charpy impact strength (un-Notched)	ISO 179	KJ/m ²	-	26	38	72	83	84	85	N B	95	26	38	-	-	72	83	90	97	93	-	N B	101	N B	95	-	-
Rockwell hardness	ISO 2039	-	scale R	120	-	120	112	118	-	118	-	120	-	-	-	120	112	120	-	-	-	118	-	118	-	-	-
Rockwell hardness	ISO 2039	-	scale M	94	71	96	75	96	80	95	80	94	71	-	-	96	75	96	75	-	-	95	80	95	80	-	-
Coefficient of liner thermal expantion	ASTMD 696	× 10 ⁻⁵ /k	-	4	-	3	-	3	-	2	-	4	-	3	-	3	-	2	-	2	-	2	-	2	-	2	-
Temperature of distortion under load	ISO 75	°C	1.8 MPa	235	-	250	-	255	-	255	-	235	-	251	-	250	-	250	-	252	-	255	-	255	-	253	-
Temperature of distortion under load	ISO 75	°C	0.45 MPa	260	-	265	-	260	-	260	-	260	-	260	-	265	-	260	-	261	-	260	-	260	-	260	-
UL-94	UL-94	PLC	1.5 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL-94	UL-94	PLC	0.75 mm	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	-	-	-	-	HB	-	HB	-
GWFI	IEC 60695-2-12	°C	3 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Comparative tracking index	IEC 60112	V	3 mm	600	-	600	-	600	-	525	-	425	-	500e	-	425	-	425	-	500	-	-	-	525	-	-	-
Dielectric	IEC 60243	KV/mm	-	26	-	28	-	30	-	21	-	26	-	42.5	-	28	-	33	-	43	-	-	-	21	-	-	-
Surface resistivity	IEC 60093	Ω	23°C50%RH	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	10 ¹⁵	-	-	-
Volume resistivity	IEC 60093	Ω·cm	23°C50%RH	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	10 ¹⁵	-	-	-
Mold shrinkage (para/perp to flow)	AsahiKasei method	%	-	0.7/1.2	-	0.4/0.9	-	0.3/0.7	-	0.4/0.7	-	0.7/1.2	-	*0.4/1.0	-	0.4/0.9	-	0.4/0.8	-	*0.3/1.0	-	0.4/0.7	-	0.4/0.7	-	0.4/0.7	-

* ISO294-4

* ISO294-4

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Leona™ Series Data Sheet



				PA Special																											
				GF reinforced, Excellent surface, Enhanced strength and stiffness														High stiffness after absorption of water						MF reinforced, Excellent surface, Enhanced strength and stiffness				Hydrosis resistance			
				90G33		90G50		90G55		90G60		93G33		54G33		54G43		SG104 BK		SG105 BK		SG106 BK		91G55		91G60		BG230		53G33	
	Test method	Units	Condition	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET		
Density	ISO 1183	g/cm ³	-	1.39	-	1.58	-	1.64	-	1.72	-	1.39	-	1.39	-	1.5	-	1.46	-	1.59	-	1.72	-	1.68	-	1.72	-	1.32	-	1.35	-
Equilibrium moisture content	ISO 62	%	-	-	1.4	-	1.2	-	1.1	-	1	-	1.9	-	1.9	-	1.6	-	1.5	-	1.2	-	1.0	-	-	-	1.0	-	0.9	-	1.1
Tensile stress at yield	ISO 527	MPa	23°C50%RH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tensile strain at yield	ISO 527	%	23°C50%RH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tensile stress at break	ISO 527	MPa	23°C50%RH	180	150	250	200	232	163	246	176	174	107	183	113	200	131	230	200	270	230	280	240	180	150	173	142	170	130	203	161
Tensile strain at break	ISO 527	%	23°C50%RH	2.5	3	2	3	2	3	2	3	5.5	9.5	4	9	4	7.5	3	3	2.5	2.5	2.5	2.5	3	4	3	5.4	4	6	4	6
Tensile modulus	ISO 527	Gpa	23°C50%RH	10.2	9.3	18.0	17.0	18.6	14.8	22.6	13.7	9.4	5.3	9.7	6.1	12.2	7.7	13	13	18	18	21	21	15	14	17.5	16.4	9.5	8.0	9.5	7.5
Flexural strength	ISO 178	MPa	23°C50%RH	238	216	355	239	394	269	397	291	233	150	270	165	290	191	320	310	380	350	400	380	250	220	255	235	268	211	296	250
Flexural modulus	ISO 178	Gpa	23°C50%RH	10	8.1	14.2	12.0	15.4	12.3	18.7	17.3	7.3	4.8	9.0	5.3	10.6	7.0	13	12	16	15	20	19	14.0	12.0	16.4	15.7	9.3	7.8	9.7	7.8
Charpy impact strength (Notched)	ISO 179	KJ/mf	-	6	12	16	16	13	13	14	15	12	23	12	19	14	21	15	14	17	16	17	17	5	6	6	6.1	10	12	13	15
Charpy impact strength (un-Notched)	ISO 179	KJ/mf	-	55	54	88	84	82	71	-	-	98	98	98	98	99	109	-	-	-	-	-	-	-	-	-	-	-	-	92	92
Rockwell hardness	ISO 2039	-	scale R	120	-	120	-	120	115	-	-	-	-	120	110	118	-	-	-	-	-	-	-	120	-	120	117	-	-	121	112
Rockwell hardness	ISO 2039	-	scale M	90	-	100	-	95	88	95	-	90	-	93	68	93	-	102	98	103	100	102	99	102	-	95	88	94	83	97	88
Coefficient of liner thermal expansion	ASTMD 696	× 10 ⁻⁵ /k	-	3	-	2	-	2	-	2	-	3	-	3	-	-	-	1.2	-	1.2	-	1	-	-	-	2	-	2	-	2	-
Temperature of distortion under load	ISO 75	°C	1.8 MPa	220	-	225	-	225	-	221	-	210	-	230	-	230	-	235	-	240	-	240	-	220	-	200	-	207	-	208	-
Temperature of distortion under load	ISO 75	°C	0.45 MPa	235	-	240	-	240	-	-	-	230	-	250	-	245	-	250	-	250	-	250	-	-	-	217	-	-	-	-	-
UL-94	UL-94	PLC	1.5 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL-94	UL-94	PLC	0.75 mm	-	-	HB	-	-	-	-	-	HB	-	HB	-	HB	-	-	-	-	-	-	-	-	-	HB	-	-	-	-	-
GWFI	IEC 60695-2-12	°C	3 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Comparative tracking index	IEC 60112	V	3 mm	-	-	-	-	450	-	475	-	-	-	600	-	600	-	575	-	600	-	600	-	-	-	-	-	-	-	-	-
Dielectric	IEC 60243	KV/mm	-	-	-	-	-	28	-	28	-	-	-	31	-	32	-	40	-	38	-	36	-	-	-	-	-	-	-	-	-
Surface resistivity	IEC 60093	Ω	23°C50%RH	-	-	-	-	10 ¹³	-	10 ¹³	-	-	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁶	-	10 ¹⁶	-	10 ¹⁵	-	-	-	-	-	-	-	-	-
Volume resistivity	IEC 60093	Ω·cm	23°C50%RH	-	-	-	-	-	-	-	-	-	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	-	-	-	-
Mold shrinkage (para/perp to flow)	AsahiKasei method	%	-	0.4/0.9	-	0.2/0.5	-	0.2/0.5	-	0.2/0.5	-	0.3/0.8	-	0.4/0.9	-	0.3/0.7	-	0.2/0.7	-	0.2/0.5	-	0.2/0.5	-	0.2/1.0	-	0.2/0.6	-	0.2/0.8	-	0.3/0.9	-
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Leona™ Series Data Sheet



				PA Special composites									
				MF reinforced				Fluoroplastic		MF reinforced, Heat stabilized			
				CR301		CR302		1330G		CR103		MR001	
	Test method	Units	Condition	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Density	ISO 1183	g/cm ³	-	1.48	-	1.52	-	1.48	-	1.45	-	1.52	-
Equilibrium moisture content	ISO 62	%	-	-	1.5	-	1.4	-	1.4	-	1.5	-	1.5
Tensile stress at yield	ISO 527	MPa	23°C50%RH	-	-	-	-	-	-	-	-	-	59
Tensile strain at yield	ISO 527	%	23°C50%RH	-	-	-	-	-	-	-	-	-	14
Tensile stress at break	ISO 527	MPa	23°C50%RH	85	59	140	92	144	107	131	100	93	58
Tensile strain at break	ISO 527	%	23°C50%RH	2	11	2	2.5	4	6	4	7	5.5	19
Tensile modulus	ISO 527	Gpa	23°C50%RH	7	4.1	10	7.6	9.8	6.7	8.1	5.2	5.9	3.4
Flexural strength	ISO 178	MPa	23°C50%RH	140	92	197	148	235	165	203	143	150	84
Flexural modulus	ISO 178	Gpa	23°C50%RH	7.4	4.1	9.8	7.1	8.7	6.0	6.7	4.2	5.8	3.1
Charpy impact strength (Notched)	ISO 179	KJ/㎡	-	3	3	4	5	10	13	4.6	5.5	3	3
Charpy impact strength (un-Notched)	ISO 179	KJ/㎡	-	51	90	38	46	71	78	-	-	62	125
Rockwell hardness	ISO 2039	-	scale R	-	-	-	-	120	108	120	94	120	108
Rockwell hardness	ISO 2039	-	scale M	85	-	90	-	89	60	94	74	85	60
Coefficient of liner thermal expanion	ASTMD 696	×10 ⁻⁵ /k	-	4	-	-	-	3	-	4	-	6	-
Temperature of distortion under load	ISO 75	°C	1.8 MPa	-	-	-	-	246	-	240	-	118	-
Temperature of distortion under load	ISO 75	°C	0.45 MPa	249	-	260	-	261	-	250	-	229	-
UL-94	UL-94	PLC	1.5 mm	-	-	-	-	-	-	-	-	-	-
UL-94	UL-94	PLC	0.75 mm	Equivalent to HB	-	Equivalent to HB	-	H B	-	H B	-	H B	-
GWFI	IEC 60695-2-12	°C	3 mm	-	-	-	-	-	-	-	-	-	-
Comparative tracking index	IEC 60112	V	3 mm	-	-	-	-	-	-	-	-	-	-
Dielectric	IEC 60243	KV/mm	-	-	-	-	-	-	-	-	-	22	-
Surface resistivity	IEC 60093	Ω	23°C50%RH	-	-	-	-	-	-	-	-	10 ¹³	-
Volume resistivity	IEC 60093	Ω·cm	23°C50%RH	-	-	-	-	-	-	-	-	10 ¹⁴	-
Mold shrinkage (para/perp to flow)	AsahiKasei method	%	-	0.5~1.3	-	0.5~1.0	-	0.5/1.0	-	0.5~1.1	-	1.0~1.1	-

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- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equilibrium moisture content at 23, 50& relative humidity.

Leona™ Series Data Sheet



				PA Flame retardant																PA Special		PA Special Halogen Free			
				Non reinforced						GF reinforced															
				FR200		FR370		FR650		FG170		FG171		FG172		FG173		FH772		SH10E		SN10B		SN103	
	Test method	Units	Condition	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Density	ISO 1183	g/cm ³	-	1.16	-	1.16	-	1.26	-	1.48	-	1.54	-	1.52	-	1.65	-	1.41	-	1.86	-	1.38	-	1.41	-
Equilibrium moisture content	ISO 62	%	-	-	2.4	-	2.3	-	1.4	-	1.2	-	0.8	-	1.1	-	0.8	-	1.3	-	0.70	-	1.6	-	1.7
Tensile stress at yield	ISO 527	MPa	23°C50%RH	75	44	83	55	50	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tensile strain at yield	ISO 527	%	23°C50%RH	3.5	24	4.5	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tensile stress at break	ISO 527	MPa	23°C50%RH	69	-	80	-	51	-	131	100	154	121	136	107	174	137	136	94	238	209	157	132	163	137
Tensile strain at break	ISO 527	%	23°C50%RH	10	>100	15	>50	1	6	2.5	3.5	2.5	3	2.5	3	2	2	3	5	1.4	1.4	3.3	3.3	2.2	2.2
Tensile modulus	ISO 527	Gpa	23°C50%RH	3.5	1.1	3.6	1.6	-	-	7.5	5.7	10.2	8.2	9.1	6.6	11.7	10.5	9.8	6.7	22.6	22.6	9.9	9.4	11.6	11.2
Flexural strength	ISO 178	MPa	23°C50%RH	117	37.2	124	54.1	84	60	188	146	244	180	208	152	259	188	209	154	365	320	246	207	244	213
Flexural modulus	ISO 178	Gpa	23°C50%RH	2.9	1.0	3.6	1.5	4.5	2.2	7.5	4.7	9.7	7.9	8	5	10.3	8.7	9.6	6.6	22.0	22.0	9.6	8.9	11.3	10.7
Charpy impact strength (Notched)	ISO 179	KJ/m ^l	-	4	11	4	6	1	1	6	5	11	12	7	11	11	10	8	10	18	18	11	11	10	10
Charpy impact strength (un-Notched)	ISO 179	KJ/m ^l	-	N B	N B	58	N B	-	-	44	45	67	67	64	62	50	52	58	58	-	-	-	-	-	-
Rockwell hardness	ISO 2039	-	scale R	118	90	120	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rockwell hardness	ISO 2039	-	scale M	80	-	85	55	-	-	95	55	95	55	95	55	100	60	-	-	-	-	-	-	-	-
Coefficient of liner thermal expanction	ASTMD 696	×10 ⁻⁵ /k	-	8	-	7	-	-	-	3	-	3	-	3	-	3	-	3	-	-	-	-	-	-	-
Temperature of distortion under load	ISO 75	°C	1.8 MPa	62	-	78	-	110	-	240	-	240	-	240	-	245	-	241	-	233	-	231	-	241	-
Temperature of distortion under load	ISO 75	°C	0.45 MPa	203	-	239	-	239	-	256	-	256	-	256	-	262	-	258	-	-	-	254	-	258	-
UL-94	UL-94	PLC	1.5 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V0(WT)	-	-	-	-	-
UL-94	UL-94	PLC	0.75 mm	V0	-	V0	-	V0	-	V0	-	V0	-	V0	-	V0	-	V0	-	-	-	V0(BK)	-	V0(BK)	-
GWFI	IEC 60695-2-12	°C	3 mm	960	-	960	-	960	-	960	-	960	-	960	-	960	-	960	-	-	-	-	-	-	-
Comparative tracking index	IEC 60112	V	3 mm	600	-	600	-	600	-	200	-	275	-	250	-	275	-	600	-	300	-	500	-	600	-
Dielectric	IEC 60243	KV/mm	-	19	-	22	-	-	-	27	-	28	-	28	-	28	-	-	-	-	-	-	-	-	-
Surface resistivity	IEC 60093	Ω	23°C50%RH	10 ¹³	-	10 ¹³	-	-	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	-	-	-	-	-	-	-	-
Volume resistivity	IEC 60093	Ω·cm	23°C50%RH	10 ¹⁴	-	10 ¹⁴	-	-	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	-	-	-	-
Mold shrinkage (para/perp to flow)	AsahiKasei method	%	-	1.3~2.0	-	0.9~1.6	-	-	-	0.6/1.0	-	0.4/0.9	-	0.4/0.9	-	0.3/0.7	-	0.4/1.2	-	0.2/0.6	-	0.2/0.8	-	0.2/1.0	-
																				* Provisional		* Provisional		* Provisional	

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Leona™ Series Data Sheet



			PA Non reinforced				PA High molecular weight										PA Impact			
			General		Heat stabilized		General						Heat stabilized				Heat stabilized			
			1300S		1402S		1500		1700S		9400S		1502S		1702		TR161		TR382	
	Test method	Unit	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Specific gravity	ASTMD792	-	1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.14	-	1.11	-	1.08	-
Water absorption	-	%	-	2.5	-	2.5	-	2.5	-	2.5	-	2.8	-	2.5	-	2.5	-	1.9	-	1.7
Tensile strength	ASTMD638	MPa	79	57	79	57	79	57	80	59	79	44	79	57	80	59	70	47	54	37
Elongation(at break)	ASTMD638	%	50	250	50	250	80	270	100	300	60	260	80	270	100	300	20	220	70	220
Flexural strength	ASTMD790	MPa	118	54	118	54	118	54	118	54	108	44	118	54	118	54	98	49	79	39
Flexural modulus	ASTMD790	GPa	2.8	1.2	2.8	1.2	2.8	1.2	2.8	1.2	2.6	0.8	2.8	1.2	2.8	1.2	2.5	1.4	2.0	1.0
Izod impact strength (notched)	ASTMD256	J/m	39	147	39	147	49	176	49	245	54	274	49	176	49	245	167	1200	1110	1320
Rockwell hardness (scale M)	ASTMD785	-	80	55	80	55	80	55	80	55	75	-	80	55	80	55	-	-	-	-
Rockwell hardness (scale R)	ASTMD785	-	120	108	120	108	120	105	120	105	-	-	120	105	120	105	114	98	107	89
Taber abrasion	ASTMD1044	× 10 ⁻⁶ kg/1000 times	-	7	-	7	-	5	-	4	-	-	-	5	-	4	-	7	-	6
Coefficient of liner expantion (para to flow)	ASTMD696	× 10 ⁻⁵ /K	8	-	8	-	8	-	8	-	-	-	8	-	8	-	7	-	11	-
Temperature of deflection under load (1.82 MPa)	ASTMD648	°C	70	-	70	-	70	-	70	-	-	-	70	-	70	-	77	-	73	-
Temperature of deflection under load (0.46 MPa)	ASTMD648	°C	230	-	230	-	230	-	230	-	190	-	230	-	230	-	225	-	215	-
Termal conductivity	-	W/(m·K)	0.2	-	0.2	-	0.2	-	0.2	-	-	-	0.2	-	0.2	-	-	-	-	-
Specific heat	-	J/(kg · K)	1670	-	1670	-	1670	-	1670	-	-	-	1670	-	1670	-	-	-	-	-
UL (0.75mm)	UL-94	-	V-2	-	V-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxygen index	ASTMD2863	%	26	-	26	-	-	-	23	-	-	-	-	-	23	-	-	-	-	-
Volume resistivity (23°C 50% RH)	ASTMD257	Ω ·cm	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-
Surface resistivity (23°C 50% RH)	ASTMD257	Ω	10 ¹³	-	10 ¹³	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	-	-	-	-
Dielectric strength	ASTMD149	KV/mm	20	-	20	-	20	-	20	-	20	-	20	-	20	-	-	-	-	-
Mold shrinkage (para/perp to flow) (3 mm)	AsahiKasei	%	1.3~2.0	-	1.3~2.0	-	1.3~2.0	-	1.3~2.0	-	-	-	1.3~2.0	-	1.3~2.0	-	1.7~2.2	-	1.7~2.5	-

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Leona™ Series Data Sheet



			PA GF reinforced																			
			General								Heat stabilized											
			13G15		1300G		13G43		13G50		14G15		1402G		14G25		14G33		14G43		14G50	
	Test method	Unit	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Specific gravity	ASTMD792	-	1.25	-	1.39	-	1.50	-	1.58	-	1.25	-	1.39	-	1.32	-	1.39	-	1.50	-	1.58	-
Water absorption	-	%	-	2.1	-	1.7	-	1.4	-	1.3	-	2.1	-	1.7	-	1.9	-	1.7	-	1.4	-	1.3
Tensile strength	ASTMD638	MPa	108	79	186	132	196	157	235	170	108	79	186	132	180	110	210	135	230	160	235	170
Elongation(at break)	ASTMD638	%	2.5	8	3	5	3	4	2.5	4	2.5	8	3	5	3	6	3	5	2.5	4	2.5	4
Flexural strength	ASTMD790	MPa	167	108	289	216	314	235	390	280	167	108	289	216	290	175	325	210	360	250	390	280
Flexural modulus	ASTMD790	GPa	4.9	2.5	9.3	6.3	11.8	8.3	14.5	9.8	4.9	2.5	9.3	6.3	8.1	4.7	10.4	6.3	13	9.5	14.5	9.8
Izod impact strength (notched)	ASTMD256	J/m	49	59	127	147	127	206	140	190	49	59	127	147	105	160	130	170	140	-	140	190
Rockwell hardness (scale M)	ASTMD785	-	94	71	96	75	96	80	95	80	94	71	96	75	96	74	96	75	95	80	95	80
Rockwell hardness (scale R)	ASTMD785	-	120	-	120	112	118	-	118	-	120	-	120	112	120	-	120	-	118	-	118	-
Taber abrasion	ASTMD1044	× 10 ⁻⁶ kg/1000 times	-	9	-	15	-	19	-	22	-	9	-	15	-	12	-	15	-	19	-	22
Coefficient of liner expantion (para to flow)	ASTMD696	× 10 ⁻⁵ /K	4	-	3	-	3	-	2	-	4	-	3	-	3	-	2	-	2	-	2	-
Temperature of deflection under load (1.82 MPa)	ASTMD648	°C	240	-	250	-	250	-	250	-	240	-	250	-	250	-	250	-	250	-	250	-
Temperature of deflection under load (0.46 MPa)	ASTMD648	°C	258	-	260	-	260	-	260	-	258	-	260	-	260	-	260	-	260	-	260	-
Thermal conductivity	-	W/(m·K)	-	-	0.3	-	0.4	-	0.4	-	-	-	0.3	-	0.3	-	0.3	-	0.4	-	0.4	-
Specific heat	-	J/(kg·K)	-	-	1590	-	-	-	-	-	-	-	1590	-	-	-	-	-	-	-	-	-
UL (0.75mm)	UL-94	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-	HB	-
Oxygen index	ASTMD2863	%	-	-	23	-	-	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-
Volume resistivity (23°C 50% RH)	ASTMD257	Ω·cm	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	10 ¹⁵	-
Surface resistivity (23°C 50% RH)	ASTMD257	Ω	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-	10 ¹⁵	-
Dielectric strength	ASTMD149	KV/mm	26	-	28	-	30	-	21	-	26	-	28	-	29	-	33	-	-	-	21	-
Mold shrinkage (para/perp to flow) (3 mm)	AsahiKasei	%	0.7/1.2	-	0.4/0.9	-	0.3/0.7	-	0.4/0.7	-	0.7/1.2	-	0.4/0.9	-	0.5/0.9	-	0.4/0.8	-	0.4/0.7	-	0.4/0.7	-

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Leona™ Series Data Sheet



			PA Special																			
			GF reinforced, Excellent surface, Enhanced strength and stiffness														MF reinforced, Excellent surface, Enhanced strength and stiffness				Hydrosis resistance	
			90G33		90G50		90G55		90G60		93G33		54G33		54G43		91G55		91G60		53G33	
			DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
	Test method	Unit	1.39	-	1.58	-	1.64	-	1.71	-	1.39	-	1.39	-	1.50	-	1.68	-	1.72	-	1.35	-
Specific gravity	ASTMD792	-	1.39	-	1.58	-	1.64	-	1.71	-	1.39	-	1.39	-	1.50	-	1.68	-	1.72	-	1.35	-
Water absorption	-	%	-	1.4	-	1.2	-	1.1	-	1.0	-	1.9	-	1.9	-	1.6	-	-	-	1.0	-	1.1
Tensile strength	ASTMD638	MPa	194	157	235	196	221	181	190	148	167	108	181	118	186	132	191	159	183	150	215	170
Elongation(at break)	ASTMD638	%	3	4	2.5	3	2	3	2	3	4	9	3	7	3	4	4	6	3.3	7.6	3	5
Flexural strength	ASTMD790	MPa	294	245	373	304	348	284	300	234	275	157	289	167	304	177	262	231	267	246	309	261
Flexural modulus	ASTMD790	GPa	9.6	7.6	15.5	12.1	15.7	12.7	16.0	12.9	8.6	4.5	9.1	5.0	11.0	5.9	13.9	11.9	16.2	15.5	8.4	6.7
Izod impact strength (notched)	ASTMD256	J/m	98	118	127	133	110	118	95	100	132	240	137	196	147	226	54	63	63	64	135	158
Rockwell hardness (scale M)	ASTMD785	-	90	-	90	-	95	88	95	88	90	-	93	68	93	-	102	-	95	88	-	-
Rockwell hardness (scale R)	ASTMD785	-	120	-	120	-	120	115	120	117	-	-	120	110	118	-	120	-	120	117	118	-
Taber abrasion	ASTMD1044	× 10 ⁻⁶ kg/1000 times	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coefficient of liner expansion (para to flow)	ASTMD696	× 10 ⁻⁵ /K	3	-	2	-	2	-	2	-	3	-	3	-	-	-	-	-	2	-	2	-
Temperature of deflection under load (1.82 MPa)	ASTMD648	°C	220	-	225	-	225	-	225	-	210	-	240	-	240	-	-	-	-	-	208	-
Temperature of deflection under load (0.46 MPa)	ASTMD648	°C	-	-	-	-	-	-	-	-	-	-	250	-	250	-	-	-	-	-	-	-
Thermal conductivity	-	W/(m·K)	-	-	-	-	0.3	-	0.3	-	-	-	-	-	-	-	-	-	-	-	0.4	-
Specific heat	-	J/(kg·K)	-	-	-	-	1930	-	1840	-	-	-	-	-	-	-	-	-	-	-	1.3	-
UL (0.75mm)	UL-94	-	-	-	HB	-	-	-	-	-	HB	-	HB	-	HB	-	-	-	HB	-	-	-
Oxygen index	ASTMD2863	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volume resistivity (23°C 50% RH)	ASTMD257	Ω·cm	-	-	-	-	-	-	-	-	-	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	-	-
Surface resistivity (23°C 50% RH)	ASTMD257	Ω	-	-	-	-	10 ¹³	-	10 ¹³	-	-	-	10 ¹⁵	-	10 ¹⁵	-	-	-	-	-	-	-
Dielectric strength	ASTMD149	KV/mm	-	-	-	-	28	-	28	-	-	-	31	-	32	-	-	-	-	-	-	-
Mold shrinkage (para./perp to flow) (3 mm)	AsahiKasei	%	0.4/0.9	-	0.2/0.5	-	0.2/0.5	-	0.2/0.5	-	0.3/0.8	-	0.4/0.9	-	0.3/0.7	-	0.2/1.0	-	0.2/0.6	-	0.2/0.6	-

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Leona™ Series Data Sheet



			PA Special composites									
			MF reinforced				Fluoroplastic		MF reinforced, Heat stabilized			
			CR301		CR302		1330G		CR103		MR001	
	Test method	Unit	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Specific gravity	ASTMD792	-	1.48	-	1.52	-	1.48	-	1.45	-	1.52	-
Water absorption	-	%	-	1.5	-	1.4	-	1.4	-	1.0	-	1.5
Tensile strength	ASTMD638	MPa	88	64	128	98	157	118	139	106	98	67
Elongation(at break)	ASTMD638	%	3	3.5	3	3.5	3	3	6	9	6	7
Flexural strength	ASTMD790	MPa	147	93	191	157	245	177	213	151	157	98
Flexural modulus	ASTMD790	GPa	5.9	2.9	8.8	5.8	8.0	6.3	6.6	4.2	5.6	3.3
Izod impact strength (notched)	ASTMD256	J/m	34	39	36	39	98	118	51	59	34	39
Rockwell hardness (scale M)	ASTMD785	-	85	-	90	-	89	60	94	74	85	60
Rockwell hardness (scale R)	ASTMD785	-	-	-	-	-	120	108	120	94	120	108
Taber abrasion	ASTMD1044	× 10 ⁻⁶ kg/1000 times	-	8	-	-	-	9	-	-	-	22
Coefficient of liner expansion (para to flow)	ASTMD696	× 10 ⁻⁵ /K	4	-	-	-	3	-	4	-	6	-
Temperature of deflection under load (1.82 MPa)	ASTMD648	°C	191	-	245	-	248	-	-	-	160	-
Temperature of deflection under load (0.46 MPa)	ASTMD648	°C	250	-	250	-	260	-	-	-	240	-
Thermal conductivity	-	W/(m·K)	-	-	-	-	-	-	-	-	-	-
Specific heat	-	J/(kg·K)	-	-	-	-	-	-	-	-	-	-
UL (0.75mm)	UL-94	-	equivalent to HB	-	equivalent to HB	-	HB	-	HB	-	HB	-
Oxygen index	ASTMD2863	%	-	-	-	-	-	-	-	-	-	-
Volume resistivity (23°C 50% RH)	ASTMD257	Ω·cm	-	-	-	-	-	-	-	-	10 ¹⁴	-
Surface resistivity (23°C 50% RH)	ASTMD257	Ω	-	-	-	-	-	-	-	-	10 ¹³	-
Dielectric strength	ASTMD149	KV/mm	-	-	-	-	-	-	-	-	22	-
Mold shrinkage (para/perp to flow) (3 mm)	AsahiKasei	%	0.5~1.3	-	0.5~1.0	-	0.5/1.0	-	0.5~1.1	-	1.0~1.1	-

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Leona™ Series Data Sheet



			PA Flame retardant													
			Non reinforced				GF reinforced									
			FR200		FR370		FG170		FG171		FG172		FG173		FH772	
	Test method	Unit	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET
Specific gravity	ASTMD792	-	1.16	-	1.16	-	1.48	-	1.54	-	1.52	-	1.65	-	1.41	-
Water absorption	-	%	-	2.4	-	2.3	-	1.2	-	0.8	-	1.1	-	0.8	-	1.3
Tensile strength	ASTMD638	MPa	79	47	83	58	132	108	162	127	153	123	167	142	150	-
Elongation(at break)	ASTMD638	%	25	80	7	70	2.5	2.7	2.5	3.5	2.5	2.7	2.5	3.5	2.3	-
Flexural strength	ASTMD790	MPa	118	44	128	56	191	152	256	190	216	177	250	221	220	-
Flexural modulus	ASTMD790	GPa	2.9	1.1	3.3	1.3	6.4	4.9	8.9	7.2	7.6	5.9	10.8	8.3	9.3	-
Izod impact strength (notched)	ASTMD256	J/m	29	118	29	98	49	59	92	110	75	92	88	98	75	-
Rockwell hardness (scale M)	ASTMD785	-	80	-	85	55	95	55	95	55	95	55	100	60	-	-
Rockwell hardness (scale R)	ASTMD785	-	118	90	120	110	-	-	-	-	-	-	-	-	-	-
Taber abrasion	ASTMD1044	× 10 ⁻⁶ kg/1000 times	-	8	-	7	-	24	-	-	-	24	-	29	-	-
Coefficient of liner expantion (para to flow)	ASTMD696	× 10 ⁻⁵ /K	8	-	7	-	3	-	3	-	3	-	3	-	3	-
Temperature of deflection under load (1.82 MPa)	ASTMD648	°C	66	-	80	-	248	-	250	-	248	-	252	-	248	-
Temperature of deflection under load (0.46 MPa)	ASTMD648	°C	209	-	240	-	255	-	255	-	255	-	260	-	-	-
Thermal conductivity	-	W/(m·K)	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific heat	-	J/(kg·K)	1670	-	-	-	-	-	-	-	-	-	-	-	-	-
UL (0.75mm)	UL-94	-	V-0	-	V-0	-	V-0	-	V-0	-	V-0	-	V-0	-	V-0	-
Oxygen index	ASTMD2863	%	32	-	36	-	38	-	-	-	37	-	-	-	-	-
Volume resistivity (23°C 50% RH)	ASTMD257	Ω·cm	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	10 ¹⁵	-	-	-
Surface resistivity (23°C 50% RH)	ASTMD257	Ω	10 ¹³	-	10 ¹³	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	10 ¹⁴	-	-	-
Dielectric strength	ASTMD149	KV/mm	19	-	22	-	27	-	28	-	28	-	28	-	-	-
Mold shrinkage (para/perp to flow) (3 mm)	AsahiKasei	%	1.3~2.0	-	0.9~1.6	-	0.6/1.0	-	0.4/0.9	-	0.4/0.9	-	0.3/0.7	-	0.4/1.2	-

- Please note that all data and values are given as typical results obtained with the indicated test methods for purposes of basic reference in grade selection only, and not as any product specification or warranty of any nature, and are subject to change with out notice.
- Be sure to read the relevant SDS before handling and use, and always follow the Important Precautions.
- Equilibrium moisture content: at 23°C, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equilibrium moisture content at 23, 50&% relative humidity.