

SHINSTR A				PA66																																	
PROPERTIES 특성	STANDARD 표준	CONDITION 조건	UNIT 단위	glass fiber reinforced																																	
				WG1KB (BK)	WG15N (NP,Cd)	WG15KB (BK)	WG25KB (BK)	WG35HF (NP)	WG40N (NP,BK,Cd)	WG10N (NP,BK,Cd)	WG10KB (BK)	WG10DTR (HSLR,DK)	WG15N (NP,BK,Cd)	WG15KB (BK)	WG15N (NP,BK,Cd)	WG15KB (BK)	WG15TR (AM,BK)	WG15TR (CR,BK)	WG40TR (BK)	WG50DTR (HSL,HK)	WG50DTR (HSL,BK)	HSLG10 (BK)	WG45TR (BK)	WG45TR (BK)	WG45TR (BK)	WG45TR (BK)	WG45TR (BK)	WG11N (NP,BK)	WG11N (NP,BK)	WG16N (NP,BK)	glass & mineral reinforced PTFE	glass fiber reinforced Flame Retardant					
PHYSICAL(물리적 성질)				WG15PT (NP)	WG40PT (NP,BK)	WG16PT (NP,BK)	WG15PT (NP)	WG40PT (NP)	WG15PT (NP,Cd)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)	WG15TR (BK)				
Specific Gravity(비중)	ASTM D792	23°C	-	1.14	1.23	1.23	1.32	1.33	1.36	1.36	1.36	1.36	1.33	1.38	1.38	1.39	1.39	1.40	1.40	1.47	1.57	1.56	1.17	1.35	1.45	1.45	1.45	1.11	1.11	1.11	1.48	1.61	1.60	1.34	1.67		
Ash Content(회분도)	ASTM D5630	850°C/30Min	%	-	15+2	15+2	25+2	25+2	30+2	30+2	30+2	30+2	30+2	33+2	33+2	35+2	35+2	35+2	35+2	40+2	50+2	50+2	50+2	5+2	35+2	38+2	38+2	40+2	-	-	30+2	40+2	25+2	25+2	30+2		
Mould Shrinkage(수축률)	ASTM D955	Flow Direction	%	0.4-0.9	0.6-0.8	0.6-1.2	0.4-1.1	0.4-1.1	0.3-0.5	0.3-0.5	0.3-0.5	0.3-0.5	0.3-0.5	0.4-1.0	0.4-1.0	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.4	0.7-0.9	0.7-0.9	0.5-1.0	0.4-0.7	1.4-1.5	1.7-1.9	1.7-1.9	0.1-0.5	0.4-0.8	-	-		
Melt Index(용융지수)	ASTM D1238	-	g/10min	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
MECHANICAL(기계적 성질)																																					
Tensile Stress at Break(인장강도)	ASTM D638	5mm/min	Mpa	75	130	110	140	180	160	170	170	220	150	190	200	200	200	200	210	210	270	250	220	80	120	130	130	150	65	60	45	160	85	110	110	160	
Tensile Elongation at Break(신율)	ASTM D638	5mm/min	%	3.5	3.5	3.0	3.5	3.0	2.5	3.0	3.0	4.0	3.5	2.0	2.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	2.0	5.0	4.0	3.0	2.5	2.7	32.0	43.0	80.0	2.5	2.0	3.5	2.0	1.5	
Flexural Modulus(굽곡탄성률)	ASTM D790	3mm/min	Mpa	2800	4950	5200	7000	8000	8000	9000	9000	8500	8600	9400	9700	7900	9800	9100	10100	11000	15000	16700	3200	6500	8200	8200	8300	2100	1900	1600	11000	7800	8500	7200	9500		
Flexural Strength at Break(굽곡강도)	ASTM D790	3mm/min	Mpa	100	190	170	210	240	250	280	280	-	240	230	260	270	280	260	250	300	390	360	350	110	190	190	220	230	95	85	65	280	140	200	140	220	
IMPACT(충격 성질)																																					
IZOD Impact, notched(중격강도)	ASTM D256	23°C	KJ/m ²	5.0	6.0	6.0	7.8	8.0	8.0	10.0	10.0	12.0	13.0	11.0	11.0	13.5	13.0	10.0	10.0	12.0	16.0	16.0	13.6	5.0	8.0	6.0	7.0	5.0	14.5	8.0	NB	11.0	5.0	6.5	7.0	5	
THERMAL(열적 성질)																																					
HDT(열변형온도)	ASTM D648	1.8MPa	°C	70	230	240	245	240	220	245	245	245	245	245	245	245	245	245	245	245	250	250	250	250	80	220	240	235	240	65	65	65	255	200	220	210	220
BURNING BEHAVIOR(난연성질)																																					
Flame Retardant(난연성)	UL94	-	CLASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
PROCESSING IMPROVEMENT(사출소 의)																																					
Predrying(건조온도)	-	2-4hr	°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	60	80	80	80	80	80	80	80	80	80	80	80	80	80	
Processing Temp.(사출온도)	-	-	°C	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	260-300	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	240-270	
특성 및 용도																																					
특성 및 용도	저항도	GF 15% 내열 (GM승인)	GF 20% 내열	GF 25% 저항도 (GM승인)	GF 30% 저항도	GF 30% 내열 (GM승인)	GF 30% 장기내열 인출	GF 33%	GF 35%	GF 35% 내열 (현대/GM 승인)	GF 35% 내열 (현대승 인)	GF 35% 내열 (현대승 인)	GF 40% 내열 (현대승 인)	GF 50% 장기내열 (GM승인)	GF 50% 장기내열 (GM승인)	GF 50% 고강성	MF 5%	GF/MF 35%	GF/MF 38%	MF/GF 38%	GF/MF 40% (현대승 인)	내한용격	고동격	고동격	GF 30% 스크래치	MF 40% 스크래치	GF 25% 난연	GF 25% 난연	GF 30% 난연	GF 30% 난연	GF 30% 난연	GF 30% 난연	GF 30% 난연	GF 30% 난연			
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SHINSTR A				PP																						
PROPERTIES 특성	STANDARD 표준	CONDITION 조건	UNIT 단위	mineral fiber reinforced										glass fiber reinforced					Impact Modified					Unreinforced		
				STM410	STM420	STM20	STM20	STM10	STM40	STM40	ST2018	SP20	SP30	SPG1205	SPG1308	SP50	SM20	SM30	STM20H	SP524	STD10	SP723	0916			
PHYSICAL(물리적 성질)																										
Specific Gravity(비중)	ASTM D792	23°C	-	0.97	1.04	1.04	1.04	1.14	1.13	1.22	1.22	1.08	1.04	1.13	1.05	1.36	1.32	0.90	1.10	1.10	1.12	0.97	1.0	0.90		
Ash Content(회분도)	ASTM D5630	850°C/30Min	%	10±2	20±2	20±2	20±2	30±2	30±2	40±2	40±2	20±2	20±2	20±2	20±2	45±2	50±2	-	28±2	25±2	21±2	10±2	15±2	-		
Mould Shrinkage(수축률)	ASTM D955	Flow Direction	%	1.4	1.2	1.2	1.2	1.0	1.0	0.8	0.8	0.8	0.4~0.7	0.3~0.6	0.4~0.7	-	0.3~0.6	1.5	0.8	1.1	1.3	1.3	1.4	0.5~0.8		
Melt Index(융유지수)	ASTM D1238	-	g/10min	15	13	16	13	7	12	7.5	7.0	0.5	15	16	9	-	9	10	10	9	23	20	25	40		
MECHANICAL(기계적 성질)																										
Tensile Stress at Break(인장강도)	ASTM D638	5mm/min	Mpa	26	33	25	30	28	32	29	33	30	90	115	86	67	110	20	15	20	16	20	15	23		
Tensile Elongation at Break(신율)	ASTM D638	5mm/min	%	160.0	50.0	70.0	60.0	60.0	25.0	25.0	20.0	100+	5.0	4.0	5.0	4.0	3.0	>500	150.0	100.0	180.0	150.0	200.0	50.0		
Flexural Modulus(굽곡탄성률)	ASTM D790	3mm/min	Mpa	2200	2850	2800	2800	3250	3600	3650	5000	1800	5900	8500	4200	4110	10000	880	1800	2500	1800	1600	1600	1400		
Flexural Strength at Break(굽곡강도)	ASTM D790	3mm/min	Mpa	38	47	45	47	44	55	47	55	35	100	145	110	80	150	25	25	40	30	35	30	35		
IMPACT(충격 성질)																										
IZOD Impact, notched(중격강도)	ASTM D256	23°C	KJ/m ²	6.0	5.0	6.0	5.0	5.0	3.5	4.5	2.5	20.0	8.5	10.0	15.0	7.0	13.0	NB	45.0	11.0	45.0	35.0	NB	10.0		
THERMAL(열적 성질)																										
HDT(열변형온도)	ASTM D648	1.8MPa	°C	120	130	130	135	135	140	140	140	125	160	160	160	160	160	80	120	120	120	110	110	100		
BURNING BEHAVIOR(난연성질)																										
Flame Retardant(난연성)	UL94	-	CLASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
PROCESSING IMPURMA TION(사출소 반)																										
Predrying(건조온도)	-	2~4hr	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Processing Temp.(작업온도)	-	-	°C	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220	200~220		
특성 및 용도																										
특성 및 용도				TD 10%	TD 20%	TD 20%	TD 30%	TD 30%	TD 40%	TD 30%	TD 30%	TD 20% (현대용안)	GF 20%	GF 30% (현대용안)	GF 30%	GF 15% (현대/SM MF 30%)	GF 50% (현대/SM 용안)	고충격	내한충격	내한충격	내한충격	내한충격	내한충격	고충격	비보강 (상용용안)	
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