

Furukawa - Microcellular Reflective Sheet

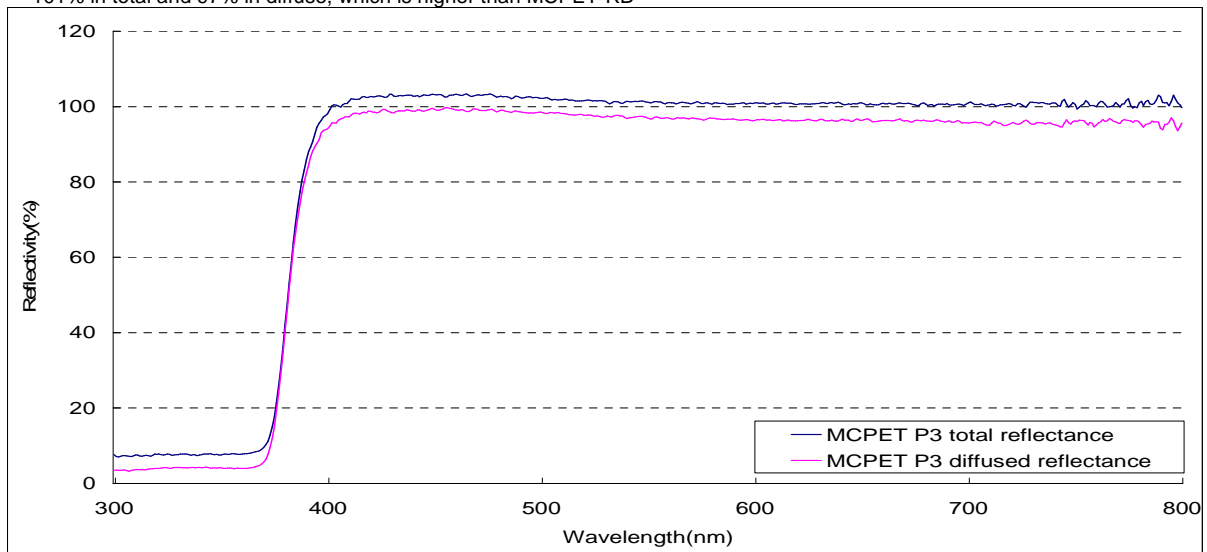
MCPET-P3

***Thickness**

- 0.55mm, the most thinnest among MCPET products

***Reflective Performance at 550nm**

- 101% in total and 97% in diffuse, which is higher than MCPET-RB



***Processing method**

Cutting - Die cut and Laser Cut are available

Overview	Thickness		mm	0.55
	¹⁾ Reflectivity	Total Reflectivity	%	101
		Diffuse Reflectivity	%	97
	²⁾ Surface specific resistivity		Ω	10 ¹⁶
	Processing	Cutting		○
Molding		×		

Note1) Reflectivity is relative against barium sulfate at 550nm.

Note2) No use by open space due to low antistatic performance.

Note3) This material has anti-UV protection on one-side. (Non-protection side has back stamps.)

MCPET-P3

Base material			Polyethylene terephthalate			
Thickness			mm	0.55(±0.08)		
Properties	Test item	Direction	Unit	Value	Test standard	
	Density		-	kg/m3	400	JIS K 6767
	Optical properties	Total	-	%	101	Relative value against BaSO4 at 550nm
		Diffuse	-	%	97	
	Mechanical properties	Tensile strength	MD	Mpa	30	JIS K 6767
			TD		26	
		Elongation	MD	%	67	JIS K 6767
			TD		73	
		Tear strength	MD	Mpa	104	JIS K 6767
			TD		112	
		Flexural Strength	MD	Mpa	10	JIS K 7171
	TD		8			
	Flexural Modulus	MD	Mpa	282	JIS K 7171	
		TD		248		
	Electrical properties	Surface specific resistivity		Ω	10 ¹⁶	JIS K 6911
	Thermal properties	Ave. linear expansion (30-70°C)	MD	°C ⁻¹	4.3X10 ⁻⁵	JIS K 7197 (30-70°C)
			TD		5.5X10 ⁻⁵	
Thermal deformation		MD	100°C, 24hrs	-0.4	JIS K 6767	
		TD		-0.1		
Heat deformation temperature	MD	°C	75(202)	JIS K 7196		
	TD		76(201)			
Flame resistance					-	
GWFI				°C	IEC 60695-2-10	
Reliability	Test item	Condition	Time	Item	Value	
	Default value	-	-	Total reflectance	101	
				L	99	
				a*	0.2	
				b*	0.1	
	High Temperature	80°C	1000hrs	Total reflectance	101	
				¹⁾ ΔE	1.0	
	Low Temperature	-20°C	1000hrs	Total reflectance	101	
				¹⁾ ΔE	0.2	
	High humidity - temperature	60°CX95%RH	1000hrs	Total reflectance	101	
				¹⁾ ΔE	1.2	
Heat cycle test	-30°C⇄80°C	500cycle	Total reflectance	100		
			¹⁾ ΔE	0.4		
Environmental suitability	RoHS complianced					
	Halogen free					
	Recyclable					
Sheet size	650X1200, 650X1500					

*All the data on this page is not guaranteed, just for the reference.

*1)ΔE shows color changes and be calculated by means of the following formula.

$$dE = \sqrt{(L_1 - L_0)^2 + (a_1 - a_0)^2 + (b_1 - b_0)^2}$$

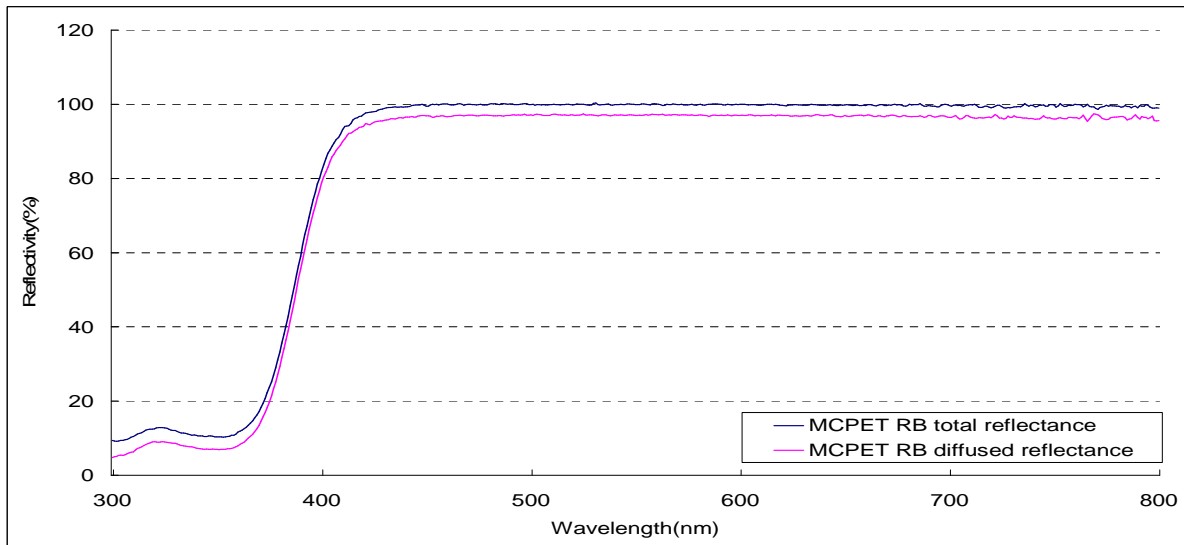
L0, a0, b0 =default value, L1, a1, b1=after test

Furukawa - Microcellular Reflective Sheet

MCPET-RB

*Thickness
 - about 1.00mm

*Reflective Performance at 550nm
 - 99% in total and 96% in diffuse



*Processing method
 Cutting - Die cut and Laser Cut are available
 Molding - Matched molding with male/female tooling is recommended.

Overview	Thickness		mm	0.94
	¹⁾ Reflectivity	Total Reflectivity	%	99
		Diffuse Reflectivity	%	96
	Surface specific resistivity			10^{12}
	Processing	Cutting		○
Molding		△		

Note1) Reflectivity is relative against barium sulfate at 550nm.

MCPET-RB

Base material			Polyethylene terephthalate			
Thickness			mm	0.94(±0.08)		
Properties	Test item	Direction	Unit	Value	Test standard	
	Density		-	kg/m3	330	JIS K 6767
	Optical properties	Total	-	%	99	Relative value against BaSO4 at 550nm
		Diffuse	-	%	96	
	Mechanical properties	Tensile strength	MD	Mpa	20	JIS K 6767
			TD		18	
		Elongation	MD	%	123	JIS K 6767
			TD		68	
		Tear strength	MD	Mpa	76	JIS K 6767
			TD		99	
		Flexural Strength	MD	Mpa	19	JIS K 7171
	TD		14			
	Flexural Modulus	MD	Mpa	1156	JIS K 7171	
		TD		882		
	Electrical properties	Surface specific resistivity		Ω	10 ¹²	JIS K 6911
Thermal properties	Ave. linear expansion (30-70°C)	MD	°C ⁻¹	4.2X10 ⁻⁵	JIS K 7197 (30-70°C)	
		TD		4.3X10 ⁻⁵		
	Thermal deformation	MD	100°C, 24hrs	-1.1	JIS K 6767	
		TD		-0.8		
Heat deformation temperature	MD	°C	75(202)	JIS K 7196		
	TD		76(201)			
UL94				HB	-	
GWFI			°C	825	IEC 60695-2-10	
Reliability	Test item	Condition	Time	Item	Value	
	Default value	-	-	Total reflectance	99	
				L	99	
				a*	-0.1	
				b*	0.6	
	High Temperature	80°C	1000hrs	Total reflectance	99	
				¹⁾ ΔE	0.3	
	Low Temperature	-20°C	1000hrs	Total reflectance	100	
				¹⁾ ΔE	0.3	
	High humidity - temperature	60°CX95%RH	1000hrs	Total reflectance	99	
				¹⁾ ΔE	0.2	
	Heat cycle test	-30°C⇄80°C	500cycle	Total reflectance	99	
¹⁾ ΔE				0.3		
Environmental suitability	RoHS complianced					
	Halogen free					
	Recyclable					
Sheet size	600X1000, 600X1200, 600X1500, 600X20,000					

*All the data on this page is not guaranteed, just for the reference.

*1)ΔE shows color changes and be calculated by means of the following formula.

$$dE = \sqrt{(L_1 - L_0)^2 + (a_1 - a_0)^2 + (b_1 - b_0)^2}$$

L0, a0, b0 =default value, L1, a1, b1=after test

Dielectric strength of MCPET & MCPolyca



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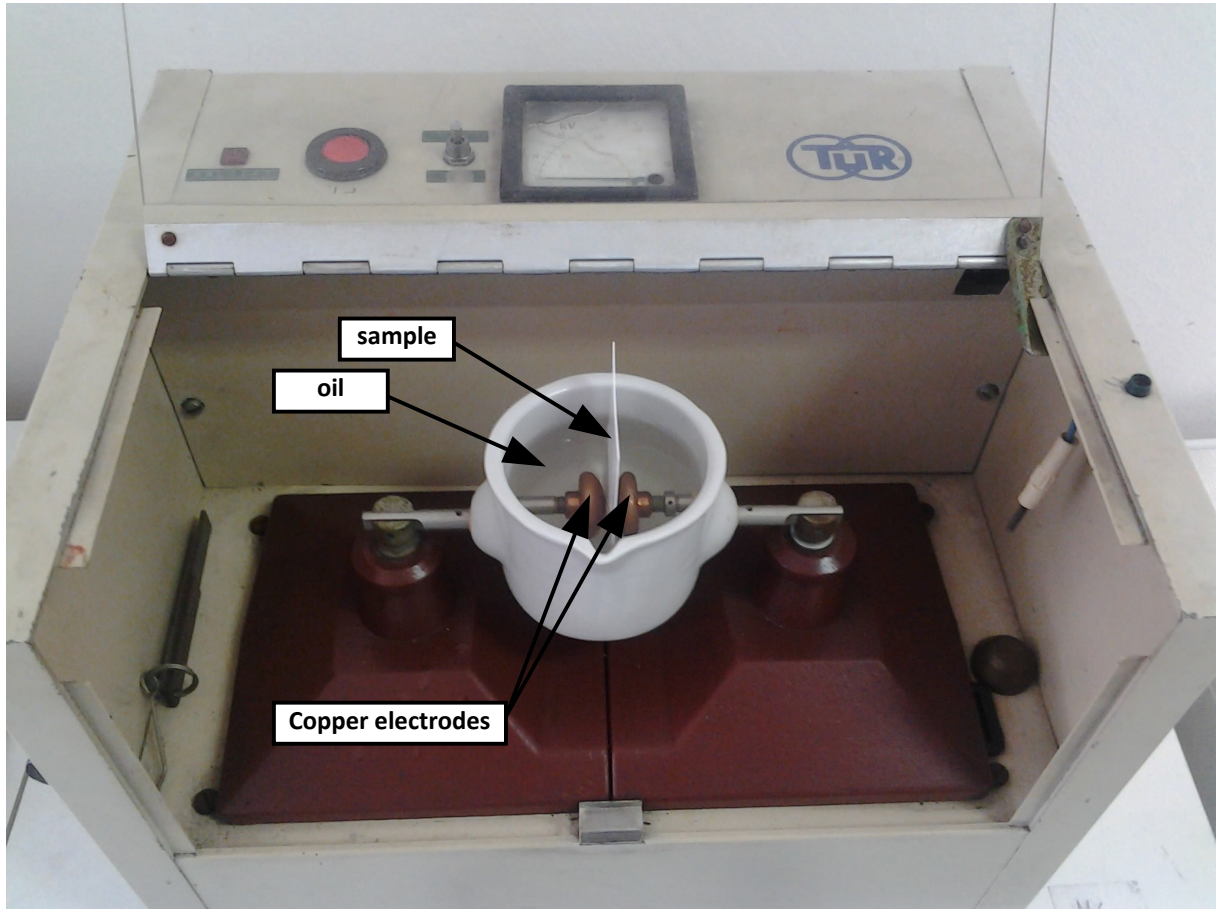
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Test machine



TUR Dreden, WOTO,25/75 test machine

Test conditions

- The test was carried out in laboratory of FETI at room temperature
- The samples were tested under silicone oil
- sample size is 60x60mm

Results

Grade	Thickness [mm]	Dielectric strenght [KV]	
MCPET-VN	1.02	55	56
	1.01	56	
	1.00	57	
MCPolyca	0.99	56	55
	0.98	53	
	0.98	56	
MCPET-M4-1.0	1.01	54	54
	1.01	55	
	1.01	54	
MCPET-RB	0.97	52	51
	0.97	52	
	0.97	48	
MCPET-R2	0.99	49	51
	0.99	52	
	0.98	53	
MCPET-E3	0.83	46	45
	0.83	44	
	0.83	46	
MCPET-M4-0.7	0.71	47	44
	0.71	42	
	0.71	44	
MCPET-S4	0.50	39	39
	0.50	39	
	0.49	39	
MCPET-P3	0.52	39	39
	0.52	40	
	0.52	39	
MCPET-M4-0.5	0.50	38	38
	0.47	38	
	0.47	38	