Electric Properties of POF materials

THE KAITEKI COMPANY
Mitsubishi Chemical Holdings Group

Properties	Test method		PMMA	
	JIS	ASTM	Cast article	molded article
Volume specific resistance(Ω=cm) (23C,50%RH)	K6911	D257	$>10^{15}$	$>10^{11}$
Withstand voltage(short time method) (kV/cm, Thickness;3.17mm)	K6911	D149	180 ～ 200	180 ～ 200
Withstand voltage(stair ascent method) (kV/cm, Thickness;3.17mm)	K6705	D149	140 ～ 160	140 ～ 160
Dielectric constant 60c/s	K6911	D150	3.5 ～ 4.5	3.5 ～ 4.5
Dielectric constant 10^3c/s	K6911	D150	3.0 ～ 3.5	3.0 ～ 3.5
Dielectric constant 10^6c/s	K6911	D150	2.7 ～ 3.2	2.7 ～ 3.2
Power factor 60c/s	K6911	D150	0.05 ～ 0.06	0.04 ～ 0.06
Power factor 10^3c/s	K6911	D150	0.04 ～ 0.06	0.03 ～ 0.06
Power factor 10^6c/s	K6911	D150	0.02 ～ 0.03	0.02 ～ 0.03
Arc resistance sec	K6911	D495	no trace	no trace

Electric Properties of Jacket materials (PE)

Properties	Test method		PE		
	JIS	ASTM	LDPE 0.914 ～ 0.925	MDPE 0.926 ～ 0.940	HDPE 0.941 ～ 0.965
Volume specific resistance(Ω=cm) (23C,50%RH)	K6911	D257			10^{11} ～ 10^{14}
Withstand voltage(short time method) (kV/cm, Thickness;3.17mm)	K6911	D149	460 ～ 700	500 ～ 700	450 ～ 740
Withstand voltage(stair ascent method) (kV/cm, Thickness;3.17mm)	K6705	D149	420 ～ 700	500 ～ 700	440 ～ 700
Dielectric constant 60c/s	K6911	D150	2.25 ～ 2.35	2.25 ～ 2.35	2.30 ～ 2.35
Dielectric constant 10^3c/s	K6911	D150	2.25 ～ 2.35	2.25 ～ 2.35	2.30 ～ 2.35
Dielectric constant 10^6c/s	K6911	D150	2.25 ～ 2.35	2.25 ～ 2.35	2.30 ～ 2.35
Power factor 60c/s	K6911	D150	＜0.0005	＜0.0005	＜0.0002
Power factor 10^3c/s	K6911	D150	＜0.0005	＜0.0005	＜0.0003
Power factor 10^6c/s	K6911	D150	＜0.0005	＜0.0005	＜0.0003
Arc resistance sec	K6911	D495	–	–	–

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Electric Properties of Jacket materials (PVC)

Properties	Test method		PVC molding Product		
	JIS	ASTM	Hard	Soft(no plasticizer)	Soft
Volume specific resistance(Ω=cm) (23C,50%RH)	K6911	D257	$>10^{16}$	10^{11} ～ 10^{13}	10^{11} ～ 10^{14}
Withstand voltage(short time method) (kV/cm, Thickness;3.17mm)	K6911	D149	170 ～ 510	120 ～ 390	100 ～ 320
Withstand voltage(stair ascent method) (kV/cm, Thickness;3.17mm)	K6705	D149	150 ～ 300	110 ～ 350	90 ～ 300
Dielectric constant 60c/s	K6911	D150	3.2 ～ 3.6	5.0 ～ 9.0	5.0 ～ 6.0
Dielectric constant 10^3c/s	K6911	D150	3.0 ～ 3.3	4.0 ～ 8.0	4.0 ～ 5.0
Dielectric constant 10^6c/s	K6911	D150	2.8 ～3.1	3.3 ～ 4.5	3.3 ～ 4.5
Power factor 60c/s	K6911	D150	0.007 ～0.02	0.03 ～ 0.15	0.10 ～ 0.15
Power factor 10^3c/s	K6911	D150	0.009 ～0.017	0.07 ～ 0.16	0.09 ～ 0.16
Power factor 10^6c/s	K6911	D150	0.006 ～0.019	0.04 ～ 0.14	0.09 ～ 0.10
Arc resistance sec	K6911	D495	60 ～80	–	–

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