ESD Control Materials (Compound)

Krefine Company Ltd.

General characteristics

Krefine®

	Property	ASTM Method	Units	Polyetheretherketone (PEEK)						Polytherimide (PEI)		Polyethersulfone (PES)		Liquid Crystal Polymer (LCP)	Polycarbonate (PC)	Polyphenylenesulfide (PPS)
				EKH-S130	EKH-S132	EKH-S135	EKH-S145	EKH-S150	EKH-S250	EIH-SSCP	EIH-SS11P	ESL-S330	ESL-S240	LCH-S230	COH-S135K	CDH-S140
Mechanical	Specific gravity	D-792	-	1.31	1.34	1.35	1.39	1.39	1.45	1.32	1.32	1.47	1.46	1.45	1.24	1.37
	Tensile strength	D-638	MPa	105	109	140	120	145	116	120	110	98	103	140	98	110
	Tensile elongation		%	3.5	3.4	3.0	2.7	2.5	2.8	2.0	2.2	2.0	1.8	3.8	4.6	1.4
	Flexural strength	D-790	MPa	170	165	250	210	217	203	140	130	147	162	176	151	140
	Flexural modulus			6,400	7,700	11,900	13,000	12,000	11,000	6,800	5,500	8,900	10,300	11,000	6,000	9,000
	Izod impact strength	D-256	J/m	30	20	30	30	30	24	30	29	46	48	67	56	25
	Heat deflection temperature 1.82MPa	D-648	°C	280	280	305	300	300	300	215	215	220	220	267	145	260
Thermal	Coefficient of linear thermal expansion 30°C-140°C	D696	$\times 10^{-5}$/°C	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.1	2.0	-	-	-
	Glass transition temperature	D3418	°C	143	143	143	143	143	143	215	215	230	230	230	150	90
	Crystal melting temperature	D3418	°C	340	340	340	340	340	340	-	-	-	-	300	-	290
	Continuous service temperature	KCI method	°C	260	260	260	260	260	260	-	-	215	215	-	-	-
Electrocal	Dielectric strength	D149	kV/mm	5	5	2	-	2	-	-	-	-	-	5	-	-
	Surface resistance	ESD11.11	ohms	1.0E+10-9.9E+12	1.0E+09-9.9E+11	1.0E+06-9.9E+08	1.0E+05-9.9E+07	1.0E+06-9.9E+08	1.0E+06-9.9E+08	1.0E+06-9.9E+09	1.0E+10-9.9E+13	1.0E+09-9.9E+11	1.0E+06-9.9E+09	1.0E+10-9.9E+12	1.0E+06-9.9E+09	1.0E+07-9.9E+09
	Dielectric constant 1MHz	D150	-	5.3	-	7.9	-	7.9	-	-	6.8	6.5	-	6.2	-	-
	Dielectric loss tangent 1MHz			0.16	-	0.22	-	0.22	-	-	0.14	0.11	-	0.13	-	-
	Flammability	UL94	-	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-2	V-0
Chemical resistance (1)	Water absorption immersion 24h	D570	% by wt.	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.05	0.2	0.05
	Water absorption immersion saturation	D570	% by wt.	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.6	0.6	0.05	0.3	0.05
	Weak acid; acetic acid, benzoic acid, hydrochlonic acid, sulfuric acid			A	A	A	A	A	A	A	A	A	A	A	L	A
	Strong acid; conc.hydrochloric, nitric acid, sulfuric acid			L	L	L	L	L	L	L	L	L	L	L	L	L
	Weak alkalies; dilute ammonia, potassium hydroxide, sodium hydroxide			A	A	A	A	A	A	A	A	A	A	A	L	A
	Strong alkalies; strong ammonia, potassium hydroxide, sodium hydroxide			A	A	A	A	A	A	L	L	A	A	L	L	A
	Hydrocarbons-aromatic; benzen, toluene, naphthalene			A	A	A	A	A	A	L	L	L	L	A	U	A
	Hydrocarbons-aliphatic; heptane, gasoline, hexane, iso-octane, grease			A	A	A	A	A	A	A	A	A	A	A	U	A
	Aldehydes and Ketones; acetone, methyl ethyl ketone, N-methyl-2-pyrrolidone			A	A	A	A	A	A	L	L	L	L	A	U	A
	Esters; aliphatic esters, amyl acetate, dimethyl phthalate			A	A	A	A	A	A	L	L	L	L	A	U	A
	Chloninated solvent; methylene chloride, chloroform			A	A	A	A	A	A	L	L	L	L	A	U	A
	Alcohols; methanol, ethanol, glycols, benzyl alcohol			A	A	A	A	A	A	A	A	A	A	A	L	A
	Inorganic salt solutions; sodium chloride, sodium carbonate, potassium cyanate			A	A	A	A	A	A	A	A	A	A	A	L	A

(1) Chemical resistance was evaluated at 23°C.
A-Acceptable service
L-Limited service
U-Unacceptable

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