


MATERIAL DECLARATION



Material Number	91 - 94 Cermet Element (Single Cup)			
Product Line	Panel Controls			
Compliance Date	December 12, 2012			
RoHS2 Compliant	Yes	MSL	N/A	

No.	Construction Element (subpart)	Homogeneous Material	Material weight [g]	Homogeneous Material/ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Substrate	Ceramic	0.3	Aluminum Oxide	1344-28-1	96	0.020459	0.021311
				Silicon Oxide	7631-86-9	2	0.000426	
				Magnesium Oxide	1309-48-4	1	0.000213	
				Calcium Oxide	1305-78-8	1	0.000213	
2	Silver conductor	Silver	0.003	Silver	7440-22-4	76	0.000163	0.000213
				Palladium	7440-05-3	10	0.000021	
				Disbismuth-trioxide	1304-76-3	10	0.000021	
				Ruthenium(IV)oxide	12036-10-1	1	0.000002	
				Silicon dioxide*	7631-86-9	1	0.000002	
				Nickel-monoxide*	1313-99-1	1	0.000002	
				Lead-monoxide*	1317-36-8	1	0.000002	
3	Resistive Ink 1	Ink	0.005	Ruthenium dioxide	12036-10-1	12.11	0.000043	0.000355
				Silver	7440-22-4	10.11	0.000036	
				Palladium	7440-05-3	12.11	0.000043	
				Boron oxide*	1303-86-2	1.056	0.000004	
				Aluminum oxide	1344-28-1	3.056	0.000011	
				Lead-monoxide*	1317-36-8	19.11	0.000068	
				Silicon dioxide	7631-86-9	14.11	0.000050	
				Calcium-oxide	1305-78-8	1.056	0.000004	
				Dibismuth-trioxide	1304-76-3	11.11	0.000039	
				Digadolinium-trioxide	12064-62-9	14.11	0.000050	
				Proprietary ingredients		2.062	0.000007	

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4	Resistive Ink 2	Ink	0.005	Ruthenium dioxide	12036-10-1	14.125	0.000050	0.000355
				Silver	7440-22-4	4.0625	0.000014	
				Palladium	7440-05-3	4.0625	0.000014	
				Boron oxide*	1303-86-2	2.0625	0.000007	
				Aluminum oxide	1344-28-1	4.0625	0.000014	
				Lead-monoxide*	1317-36-8	25.125	0.000089	
				Silicon dioxide	7631-86-9	15.0625	0.000054	
				Dibismuth-trioxide	1304-76-3	12.125	0.000043	
				Digadolinium-trioxide	12064-62-9	13.125	0.000047	
				Proprietary ingredients		6.1875	0.000023	
5	Terminal Wire	Copper	0.03	Copper	7440-50-8	100	0.002131	0.002131
		Plating	0.00003	Tin	7440-31-5	100	0.000002	0.000002
6	Contact Spring	Strip Laminated	0.05	Copper	7440-50-8	70	0.002486	0.003552
				Zinc	7440-66-6	30	0.001066	
		Spacer Strip	0.04	Nickel	7440-02-0	18	0.000511	0.002841
				Copper	7440-50-8	55	0.001563	
		Solder Inlay	0.0015	Zinc	7440-66-6	27	0.000767	0.000107
				Tin	7440-31-5	94.2	0.000101	
				Silver	7440-22-4	5	0.0000052	
				Bismuth	7440-69-9	0.3	0.0000003	
		Wire	0.03	Impurities		0.5	0.0000005	0.002131
				Copper	7440-50-8	65	0.001385	
Nickel	7440-02-0			18	0.000384			
7	Brass Shaft	Brass	7.00	Zinc	7440-66-6	17	0.000362	0.497253
				Copper	7440-50-8	61.5	0.305810	
				Lead	7439-92-1	3.1	0.015415	
		Nickel plating	0.07	Nickel	7440-02-0	100	0.004972	0.004972

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8	Rotor	PBT	1.95	Glass	65997-17-3	30	0.041556	0.138521
				Poly(butylene terephthalate)	30965-26-5	55	0.076187	
				Brominated flame retardant	Trade secret	11	0.015237	
				Antimony Oxide	1309-64-4	4	0.005541	
9	Body	PBT	2.65	Glass	65997-17-3	30	0.056474	0.188247
				Poly(butylene terephthalate)	30965-26-5	55	0.103536	
				Brominated flame retardant	Trade secret	11	0.020707	
				Antimony Oxide	1309-64-4	4	0.007530	
10	Bushing	Aluminum	1.2	Aluminum	7429-90-5	93.7	0.079873	0.085243
				Copper	7440-50-8	5.5	0.004688	
				Bismuth	7440-69-9	0.4	0.000341	
				Lead	7439-92-1	0.4	0.000341	
	Plating	0.0011	Nickel	7440-02-0	100	0.000078	0.000078	
11	Rear Cover	PBT	0.65	Glass	65997-17-3	30	0.013852	0.046174
				Poly(butylene terephthalate)	30965-26-5	55	0.025396	
				Brominated flame retardant	Trade secret	11	0.005079	
				Antimony Oxide	1309-64-4	4	0.001847	
12	Drive Pin	Carbon Steel	0.05	Carbon	7440-44-0	0.2	0.0000071	0.003552
				Manganese	7439-96-5	0.8	0.0000284	
				Phosphorus	7723-14-0	0.03	0.0000011	
				Sulfur	7704-34-9	0.05	0.0000018	
				Silicon	7440-21-3	0.35	0.0000124	
				Aluminum	7429-90-5	0.05	0.0000018	
				Iron	7439-89-6	98.52	0.0034994	
	Plating	0.0001	Zinc	7440-66-6	100	0.000007	0.000007	

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13	Washer	Teflon	0.007	Polytetrafluoroethylene	9002-84-0	15	0.000075	0.000497
				1-Dichloro-1-Fluoroethane	1717-00-6	85	0.000422	
14	Washer	Teflon	0.0036	Polytetrafluoroethylene	9002-84-0	15	0.000038	0.000256
				1-Dichloro-1-Fluoroethane	1717-00-6	85	0.000318	
15	Spring Washer	Beryllium Copper	0.031	Copper	7440-50-8	98.1	0.002161	0.002202
				Silicon	7440-21-3	0.2	0.000004	
				Beryllium	7440-41-7	1.5	0.000033	
				Aluminum	7429-90-5	0.2	0.000004	
		Total weight	14.07733					

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Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
2. RoHS2 exemptions used: 6b – lead in aluminum alloy; 6c- lead in copper alloy; 7c-I – electronic components containing lead in a glass...
3. *Oxides are part of a glass matrix. These oxides are not present as listed in the final article.