


# MATERIAL DECLARATION SHEET



Material Number	56 Rotary Switch			
Product Line	Panel Control			
Compliance Date	2010			
RoHS Compliant	Yes	MSL	1	

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	Body Molded	PBT	0.659	Poly(butylene terephthalate)	30965-26-5	55	3	5.455
				Glass fiber	65997-17-3	30	1.636	
				Antimony trioxide	1309-64-4	4	0.218	
				Brominated FR (TBBPA polycarbonate polymer)	trade secret	11	0.6	
2	Bushing	Aluminum Alloy	1.036	Silicon	7440-21-3	0.7	0.06	8.576
				Iron	7439-89-6	0.34	0.029	
				Copper	7440-50-8	0.34	0.029	
				Manganese	7439-96-3	0.09	0.007	
				Magnesium	7439-98-5	0.9	0.077	
				Chromium	7440-47-3	0.09	0.007	
				Zinc	7440-66-6	0.05	0.004	
				Titanium	7440-32-6	0.02	0.001	
		Aluminum	7429-90-5	97.47	8.359			
Plating	0.00325	Nickel	7440-02-0	100	0.027	0.027		
3	Rotor Molded	Nylon	0.1757	Polyhexamethylene adipamide	32131-17-2	66	0.959	1.454
				Glass fibers	65997-17-3	32	0.465	
				Molybdenum disulfide	1317-33-5	2	0.029	

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4	Contact Spring	Nickel Silver Alloy	0.029	Copper	7440-50-8	55	0.132	0.24
				Nickel	7440-02-0	18	0.043	
				Zinc	7440-66-6	27	0.065	
5	Lube, Element	Lube	0.005	Decanoic acid, mixed esters with heptanoic acid, octanoic acid	68130-53-0	54.4	0.022	0.041
				Lithium 12-hydroxystearate	7620-77-1	5.7	0.002	
				Isohexadecyl-isoctadecanoate	52006-45-8	33.7	0.014	
				Polyisobutylene	9003-27-4	6.2	0.002	
6	Substrate	Ceramic	0.277	Aluminum Oxide	1344-28-1	96	2.201	2.293
				Silicon Oxide	1344-28-1	2	0.046	
				Magnesium Oxide	7309-48-4	1	0.023	
				Calcium Oxide	1305-78-8	1	0.023	
7	Conductive Ink	Ink	0.007	Silver	7440-22-4	75	0.043	0.058
				Palladium	7440-05-3	10	0.006	
				Dibismuth-trioxide	1304-76-3	10	0.006	
				Ruthenium(IV)oxide	12036-10-1	1	0.0006	
				Silicon dioxide	7631-86-9	1	0.0006	
				Nickel-monoxide	1313-99-1	1	0.0006	
				Lead-monoxide	1317-33-8	1	0.0006	
				proprietary ingredients		1	0.0006	
8	Resistive Ink	Ink	0.007	Ruthenium(IV)oxide	12036-10-1	12.11	0.007	0.058
				Silver	7440-22-4	10.11	0.006	
				Palladium	7440-05-3	12.11	0.007	
				Diboron-trioxide	1303-86-2	1.056	0.0006	
				Aluminum Oxide	1344-28-1	3.056	0.002	
				Lead-monoxide	1317-36-8	19.11	0.011	
				Silicon dioxide	7631-86-9	14.11	0.008	
				Calcium-oxide	1305-78-8	1.056	0.0006	
				Dibismuth-trioxide	1304-76-3	11.11	0.006	
				Digadolinium-trioxide	12064-62-9	14.11	0.008	
proprietary ingredients		2.06	0.001					

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9	Resistive Ink CP	Ink	0.007	Phenolic resin	9039-25-2	54	0.031	0.058
				Diallyl isophthalate resin	1087-21-4	4	0.002	
				Carbon Black	1333-86-4	13	0.007	
				Graphite	7782-42-5	3	0.002	
				Silver	7440-22-4	26	0.015	
10	Terminal X 3	Copper	0.2	Copper	7440-50-8	100	1.656	1.656
		Plating	0.0027	Tin	7440-31-5	100	0.022	0.022
11	Cover Molded	PBT	0.204	Poly(butylene terephthalate)	30965-26-5	55	0.929	1.689
				Glass fiber	65997-17-3	30	0.507	
				Antimony trioxide	1309-64-4	4	0.067	
				Brominated FR (TBBPA polycarbonate polymer)	trade secret	11	0.186	
12	Lube, Shaft	Lube	0.002	1-Decene, tetramer, mixed with 1-decene trimer, hydrogenated	68649-12-7	58.8	0.010	0.017
				1-Propene, polymer with ethene	9010-79-1	30.8	0.005	
				Silica, amorphous fumed	112945-52-5	5.4	0.001	
				Ethene, tetrafluoro-homopolymer	9002-84-0	5	0.0008	
13	Shaft	Brass Alloy	6.85	Copper	7440-50-8	61.5	34.873	56.705
				Zinc	7440-66-6	35.5	20.130	
				Lead	7439-92-1	3	1.701	
		Plating	0.6256	Nickel	7440-02-0	100	5.178	5.178
14	O-Ring	Silicone	0.009	Silicone	7440-21-3	100	0.074	0.074
15	Switch Housing	PBT	0.674	Poly(butylene terephthalate)	30965-26-5	55	3.068	5.579
				Glass fiber	65997-17-3	30	1.674	
				Antimony trioxide	1309-64-4	4	0.223	
				Brominated FR (TBBPA polycarbonate polymer)	trade secret	11	0.613	

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16	Rotor	Nylon	0.202	Polyhexamethylene adipamide	32131-17-2	66	1.103	1.672
				Glass fibers	65997-17-3	32	0.535	
				Molybdenum disulfide	1317-33-5	2	0.033	
17	Board	FR-4	0.138	Phenol, 4,4'-(1-methylethylidene)bis(2,6-dibromo-, polymer with (chloromethyl) oxirane and 4,4'-(1-methylethylidene)bis(p henol)	26265-08-7	33	0.377	1.142
				Copper	7440-50-8	18	0.205	
				Glass	65997-17-3	49	0.559	
18	Terminals	Phosphor Bronze Alloy	0.014	Copper	7440-50-8	94.8	0.109	0.116
				Tin	7440-31-5	5	0.006	
				Phosphorus	7723-14-0	0.2	0.0002	
				Nickel	7440-02-0	100	0.030	
		Under plate	0.0037	Tin	7440-31-5	100	0.038	0.030
Finish plate	0.0046	Silver	7440-22-4	100	0.074	0.038		
Finish plate	0.0089					0.074	0.074	
19	Contact Switch	Phosphor Bronze Alloy	0.014	Copper	7440-50-8	94.8	0.109	0.116
				Tin	7440-31-5	5	0.006	
				Phosphorus	7723-14-0	0.2	0.0002	
		Plating	0.0017	Silver	7440-22-4	100	0.014	0.014
20	Rivet X 3	Brass Alloy	0.042	Copper	7440-50-8	0.615	0.214	0.347
				Zinc	7440-66-6	0.355	0.123	
				Lead	7439-92-1	0.03	0.010	
21	Spring	Music Wire	0.007	Iron	7439-89-6	95	5.505	5.794
				Carbon	7440-44-0	0.5	0.029	
				Manganese	7439-96-5	1	0.058	
				Silicon	7440-21-3	1.5	0.087	
				Chromium	7440-47-3	1	0.058	
				Copper	7440-50-8	1	0.058	
22	Lube, Contact Switch	Lube	0.002	o-Phenylenediamine	95-54-5	0.01	0.000002	0.017
				non-hazardous grease	N/A	99.99	0.017	

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23	Cover	PBT	0.216	Poly(butylene terephthalate)	30965-26-5	55	0.983	1.788
				Glass fiber	65997-17-3	30	0.536	
				Antimony trioxide	1309-64-4	4	0.071	
				Brominated FR (TBBPA polycarbonate polymer)	trade secret	11	0.197	
24	Bracket	Stainless Steel Alloy	0.5	Carbon	7440-44-0	0.15	0.006	4.139
				Manganese	7439-96-5	2	0.083	
				Iron	7439-89-6	72.85	3.015	
				Silicon	7440-21-3	1	0.041	
				Nickel	7440-02-0	7	0.289	
				Chromium	7440-47-3	17	0.704	
		Plating	0.003	Tin	7440-31-5	1	0.025	0.025
25	O-ring	Buna N	0.022	Poly-acrylonitrile-butadiene	9003-18-3	100	0.182	0.182
26	Epoxy	Epoxy	0.039	Epoxy resin	25085-99-8	51	0.165	0.323
				Silicon dioxide	7440-21-3	34	0.109	
				Kaolin clay	1332-58-7	15	0.048	
27	Epoxy	Epoxy	0.089	Epoxy resin	25085-99-8	49	0.361	0.737
				Antimony trioxide	1309-64-4	11	0.081	
				Silicon dioxide	7440-21-3	11	0.081	
				Aluminum oxide	1344-28-1	11	0.081	
				Kaolin clay	1332-58-7	9	0.066	
				Mg alumino silicate	1302-88-1	9	0.066	
Total weight			10.172					

**This Document was updated on:** April 20, 2011

## Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
2. RoHS exemptions: 7(c)-I – electrical and electronic components containing lead in a glass or ceramic... 6c - lead as a copper alloy containing up to 4% Pb by weight.
3. Per [Product Update Memo SC2436](#), this MDS is under revision. The updated version will be posted soon.