

# MATERIAL DECLARATION SHEET



Material Number	ES-L			
Product Line	Shaftless Contacting Encoder			
Compliance Date	September 30, 2005			
RoHS 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	PCB	FR-4	2.166	Phenol, 4,4'-(1-methylethylidene)bis(2,6-dibromo-, polymer with (chloromethyl) oxirane and 4,4'-(1-methylethylidene) bis(phenol)	26265-08-7	33	13.146	39.836
				Copper	7440-50-8	18	7.171	
				Glass		49	19.519	
		Copper Plating	0.1	Copper	7440-50-8	90	1.655	1.839
				Proprietary Ingredients		10	0.184	
		Soldermask	0.011	Bisphenol A, epichlorohydrin polymer (2-Methoxymethylethoxy) propanol	25068-38-6	40	0.081	0.202
					34590-94-8	10	0.02	
				Barium sulfate	7727-43-7	35	0.071	
				2-Methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	10	0.02	
				Dipropylene glycol ethyl ether	15764-24-6	5	0.01	
		ENIG	0.014	Nickel bis(sulfamidate)	13770-89-3	97	0.249	0.258
				Gold	7440-57-5	3	0.008	

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2	Element Lube	Lube	0.00815	Decanoic acid, mixed esters with heptanoic acid, octanoic acid	68130-53-0	54.4	0.082	0.149
				Lithium 12-hydroxystearate	7620-77-1	5.7	0.009	
				Isohexadecyl-isooctadecanoate	52006-45-8	33.7	0.051	
				Polyisobutylene	9003-27-4	6.2	0.009	
3	Terminal X 3	Phosphor Bronze	0.0822	Copper	7440-50-8	94.8	1.433	1.512
				Tin	7440-31-5	5	0.076	
				Phosphorus	7723-14-0	0.2	0.003	
		Plating	0.005	Tin	7440-31-5	100	0.092	0.092
4	Solder	Solder	0.018	Tin	7440-31-5	96.5	0.319	0.331
				Silver	7440-22-4	3	0.009	
				Copper	7440-50-8	0.5	0.002	
5	Rotor	POM	0.6002	Polyoxymethylene Homopolymer	30846-29-8	94	10.377	11.039
				Stabilizer		2	0.221	
				Pigment		3	0.331	
				Carbon Black	1333-86-4	1	0.11	
6	Contact Spring	Wire	0.01548	Copper	7440-50-8	55	0.157	0.285
				Nickel	7440-02-0	18	0.051	
				Zinc	7440-66-6	27	0.077	
		Spacer Strip	0.00756	Nickel	7440-02-0	18	0.025	0.139
				Copper	7440-50-8	55	0.077	
		Laminated Strip	0.05	Zinc	7440-66-6	27	0.038	0.919
				Copper	7440-50-8	70	0.644	
7	Housing	Nylon	2.283	Nylon	32131-17-2	85	35.69	41.988
				Glass		15	6.298	

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8	Detent Spring	Stainless Steel	0.0655	Iron	7439-89-6	70.85	0.854	1.205
				Carbon	7440-44-0	0.15	0.002	
				Chromium	7740-47-3	17	0.205	
				Manganese	7439-96-5	2	0.024	
				Nickel	7440-02-0	9	0.108	
				Silicon	7440-21-3	1	0.12	
9	Front Bearing and Detent Surfaces Lube	Lube	0.00815	Siloxanes and Silicones, Me 3,3,3-trifluoropropyl	63148-56-1	84	0.126	0.149
				Polyurea for lubricants		15	0.022	
				Proprietary Ingredients		1	0.001	
10	Marking Ink	Ink	0.003	Epoxy Resin		100	0.055	0.055
		Total weight	5.437					

**This Document was updated on:** January 24, 2007

**Important remarks:**

1. It is the responsibility of the user to verify they are accessing the latest version.
2. Per [Product Update Memo SC2436](#), this MDS is under revision. The updated version will be posted soon.