

# Material Declaration



Package Type	Full
Package Size	20.8 x 13.2 mm
Terminal Finish	Matte Tin
Finish Thickness	8 microns
Weight (mg)	3600.000
MSL	1

Series	CH11
--------	------

Item	Material	Element	Content (mg)	Content (wt%)	CAS #	
Cover	Stainless Steel	Nickel (Ni)	63.664	1.768%	7440-02-0	
		Chromium (Cr)	141.960	3.943%	7740-47-3	
		Iron (Fe)	560.319	15.564%	7439-89-6	
		Manganese (Mn)	8.094	0.225%	7439-96-5	
		Silicon (Si)	3.736	0.104%	7440-21-3	
		Carbon (C)	0.342	0.010%	7440-44-0	
		Sulphur (S)	0.008	0.0002%	7704-34-9	
Header	Iron Alloy	Phosphorus (P)	0.163	0.005%	7723-14-0	
		Iron (Fe)	2137.939	59.387%	7439-89-6	
		Carbon (C)	1.070	0.030%	7440-44-0	
		Silicon (Si)	0.214	0.006%	7440-21-3	
		Manganese (Mn)	4.932	0.137%	7439-96-5	
		Phosphorus (P)	0.300	0.008%	7723-14-0	
		Sulphur (S)	0.107	0.003%	7704-34-9	
	PTH Glass	Glass Frit	13.036	0.362%	65997-18-4	
	Standoff Glass	Glass Frit	45.530	1.265%	65997-18-4	
	Kovar	Iron (Fe)	24.565	0.682%	7439-89-6	
		Nickel (Ni)	13.571	0.373%	7440-02-0	
		Cobalt (Co)	7.977	0.222%	7440-48-4	
	Solder	Tin (Sn)	4.694	0.130%	7440-31-5	
		Silver (Ag)	0.146	0.004%	7440-22-4	
Copper (Cu)		0.024	0.001%	7440-50-8		
H/I C	IC Die	Aluminum (Al)	0.0016	0.000043%	7429-90-5	
		Molybdenum (Mo)	0.0002	0.000005%	7439-98-7	
		Silicon (Si)	0.817	0.023%	7440-21-3	
		Titanium (Ti)	0.0004	0.00001%	7440-32-6	
		Arsenic (As)	0.0000079	0.00000022%	7440-38-2	
		Chromium (Cr)	0.0000072	0.0000002%	7440-47-3	
		Mold	Epoxy Resin	4.553	0.126%	129915-35-1
	Organic Phosphorus		0.405	0.011%		
	Metal Hydroxide		1.771	0.049%		
	Silica (SiO2)		40.167	1.116%	60676-86-0	
	Carbon Black		0.153	0.004%	1333-86-4	
	Phenol		3.570	0.099%	9003-35-4	
	Gold	Gold (Au)	0.136	0.004%	7440-57-5	
	Adhesive	Silver (Ag)	0.037	0.001%	7440-22-4	
		Epoxy Resin	0.012	0.0003%	129915-35-1	
	Leadframe	Copper (Cu)	18.022	0.501%	7440-50-8	
		Silver (Ag)	0.462	0.013%	7440-22-4	
	Leadframe Plating	Tin (Sn)	0.658	0.018%	7440-31-5	
		Silver (Ag)	0.016	0.0005%	7440-22-4	
	Ceramic Substrate	Alumina (Al2O3)	369.151	10.254%	1344-28-1	
		Silicon Oxide (SiO)	9.238	0.257%	11126-22-0	
		Titanium Oxide (TiO2)	0.039	0.001%	13463-67-7	
		Iron Oxide (Fe2O3)	0.233	0.006%	1309-37-1	
		Calcium Oxide (CaO)	1.401	0.039%	1305-78-9	
		Sodium Oxide (Na2O)	0.932	0.026%	1313-59-3	
		Magnesium Oxide (MgO)	3.648	0.101%	1309-48-4	
		Potassium Oxide (K2O)	3.105	0.086%	12136-45-7	
		Conductor	Silver (Ag)	5.789	0.161%	7440-22-4
			Glycol Ethyl Ether	0.341	0.009%	109-87-5
	Terpineol		0.341	0.009%	8000-41-7	
	Di(2-ethylhexyl)					
	Phthalate		0.068	0.002%	117-81-7	
	Conductor Overglaze	Resin, Hydrogenated, methyl ester	0.350	0.010%	8050-15-5	
		Glass Frit	9.106	0.253%	65997-18-4	
		Glycol Ethyl Ether	0.584	0.016%	109-87-5	
		Terpineol	1.051	0.029%	8000-41-7	
		Di(2-ethylhexyl)				
		Phthalate	0.467	0.013%	117-81-7	
	Chip Cap	Nickel (Ni)	0.117	0.003%	7440-02-0	
		Barium Titanate (BaTiO3)	1.167	0.032%	12047-27-7	
		Nickel (Ni)	0.0023	0.00006%	7440-02-0	
		Copper (Cu)	0.0001	0.0000027%	7440-50-8	
		Nickel (Ni) (Plating)	0.0001	0.0000027%	7440-02-0	
		Tin (Sn) (Plating)	0.0001	0.0000027%	7440-31-5	
		SMD Solder	Tin (Sn)	15.021	0.417%	7440-31-5
	Silver (Ag)		0.545	0.015%	7440-22-4	
	Tin (Sn)		18.776	0.522%	7440-31-5	
	Substrate attach solder	Silver (Ag)	0.584	0.016%	7440-22-4	
		Copper (Cu)	0.097	0.003%	7440-50-8	
		Silicon Dioxide (SiO2)	38.914	1.081%	14808-60-7	
	Crystal	Electrode	Silver (Ag)	5.837	0.162%	7440-22-4
		Blank Adhesive	Silver (Ag)	7.939	0.221%	7440-22-4
		Silicon (Si)	1.985	0.055%	7440-21-3	
	<b>TOTAL</b>			3600.000	100.000%	



Cardinal Components, Inc.  
145 Rt. 46 West  
Wayne, NJ 07470

TEL: (973)785-1333  
E-MAIL: sales@cardinalxstal.com  
WEB: http://www.cardinalxstal.com