

## Materials Declaration

<b>Package</b>	CSP BGA
<b>Body Size (mm)</b>	12 X 12 X 1.6
<b>Ball Count</b>	160
<b>Option</b>	Pb-free
<b>Ball Size (mm)</b>	0.45

Molding Compound			
Substance	% of Compound	Weight (g)	PPM
Silica	86.20	2.03 E-01	389183
Epoxy resin	6.00	1.41 E-02	27089
Phenol Resin	6.00	1.41 E-02	27089
Metal Hydroxide	1.50	3.54 E-03	6772
Carbon Black	0.30	7.07 E-04	1354
Subtotal	100.0	2.36 E-01	451488

Laminate			
Substance	% of Laminate	Weight (g)	PPM
Glass Cloth	18.89	3.32 E-02	63568
Core Resin	11.81	2.07 E-02	39743
May contain Chlorine (refer to test reports)			
May contain Bromine (refer to test reports)			
Laminate Core Subtotal	30.70	5.39 E-02	103311
Soldermask Acrylate Resin	0.90	1.58 E-03	3029
Barium Sulfate	0.80	1.41 E-03	2692
Epoxy Resin	0.46	8.08 E-04	1548
Dipropylene glycol monomethyl ether	0.34	5.97 E-04	1144
Solvent naphtha (petroleum), Heavy arom	0.32	5.62 E-04	1077
Diethylene glycol monoethyl ether acetate	0.26	4.57 E-04	875
Acrylic Ester Monomer	0.13	2.28 E-04	437
Talc	0.09	1.58 E-04	303
Morpholine Derivatives	0.09	1.58 E-04	303
Urethane Resin	0.05	8.78 E-05	168
Silane Compounds	0.03	5.27 E-05	101
Triazine derivatives	0.01	1.76 E-05	34
Pigment Green	0.01	1.76 E-05	34
Silica	0.01	1.58 E-05	30
Pigment Yellow	0.001	1.76 E-06	3
May contain Chlorine (refer to test reports)			
May contain Bromine (refer to test reports)			
Soldermask Subtotal	3.5	6.15 E-03	11778
Copper Foil	18.90	3.32 E-02	63602
Copper	45.60	8.01 E-02	153452
Nickel	1.10	1.93 E-03	3702
Gold	0.20	3.51 E-04	673
Subtotal	100.00	1.76 E-01	336518

Solder Ball			
Substance	% of Solder Ball	Weight (g)	PPM
Tin	96.50	9.01 E-02	172608
Silver	3.00	2.80 E-03	5366
Copper	0.50	4.67 E-04	894
Subtotal	100	9.34 E-02	178869

Bond Wires			
Substance	% of Wire	Weight (g)	PPM
Gold	99.99	9.02 E-04	1727

Chip			
Substance	% of Chip	Weight (g)	PPM
Doped Silicon	100.0	1.47 E-02	28117

Die Attach			
Substance	% of Die Attach	Weight (g)	PPM
Silver	66.11	1.13 E-03	2170
Polymeric material	16.53	2.83 E-04	543
Acrylate resin	6.2	1.06 E-04	204
Diester resin	6.2	1.06 E-04	204
Functionalized urethane resin	2.48	4.25 E-05	81
Epoxy resin	2.48	4.25 E-05	81
Subtotal	100.0	1.71 E-03	3282

Package Totals	
Weight (g)	PPM
5.22 E-01	1000000

Molding Compound		
Substance	PPM	Method
Lead	Not Detected	Draft IEC 62321. ICP-OES.
Cadmium	Not Detected	Draft IEC 62321. ICP-OES.
Mercury	Not Detected	Draft IEC 62321. ICP-OES.
Chromium+6	Not Detected	Draft IEC 62321. UV-VIS.
Polybrominated biphenyls (PBB)	Not Detected	Draft IEC 62321. GC-MSD.
Polybrominated Diphenyl Ethers (PBDE)	Not Detected	Draft IEC 62321. GC-MSD.

Die Attach Paste		
Substance	PPM	Method
Lead	Not Detected	Draft IEC 62321. ICP-OES.
Cadmium	Not Detected	Draft IEC 62321. ICP-OES.
Mercury	Not Detected	Draft IEC 62321. ICP-OES.
Chromium+6	Not Detected	Draft IEC 62321. UV-VIS.
Polybrominated biphenyls (PBB)	Not Detected	Draft IEC 62321. GC-MSD.
Polybrominated Diphenyl Ethers (PBDE)	Not Detected	Draft IEC 62321. GC-MSD.

Note: The information provided in this declaration are true to the best of ADI's knowledge.  
 ADI derived most of the information listed in this declaration from documents provided by third parties, and assumes no liability to any inaccuracy of such information.



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Gold	0.20	3.51 E-04	673
Subtotal	100.00	1.76 E-01	336518

Solder Ball			
Substance	% of Solder Ball	Weight (g)	PPM
Tin	62.00	5.79 E-02	110899
Lead	36.00	3.36 E-02	64393
Silver	2.00	1.87 E-03	3577
Subtotal	100.0	9.34 E-02	178869

Bond Wires			
Substance	% of Wire	Weight (g)	PPM
Gold	99.99	9.02 E-04	1727

Chip			
Substance	% of Chip	Weight (g)	PPM
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