Product / Package Information

Package	CSP BGA
Body Size (mm)	12 X 12 X 1.4
Ball Count	168
Terminal Finish	SnAgCu
Ball Size (mm)	0.45

Environmental Information

RoHS Compliant	Yes
High Temperature Compliant	Yes
Halogen Free Compliant	Yes
JIG Material Content Compliant	Level A Compliant

Materials Declaration

Molding Compound

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Silica	60676-86-0	1.62 E-01	85.60	856000	40.34	403350
Thermosets	Epoxy Resin	Proprietary	9.55 E-03	5.04	50400	2.37	23749
Thermosets	Phenol Resin	Proprietary	3.81 E-03	2.01	20100	0.95	9471
Other organic materials	Phenol Novolac	9003-35-4	3.81 E-03	2.01	20100	0.95	9471
Other inorganic materials	Metal Hydroxide	Proprietary	9.55 E-03	5.04	50400	2.37	23749
Other inorganic materials	Carbon Black	1333-86-4	5.68 E-04	0.3	3000	0.14	1414
Subtotal			1.89 E-01	100.0	1000000	47.12	471203

Laminate

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Glass	Glass Cloth	65997-17-3	1.90 E-02	14.245	142450	4.73	47269
Other organic materials	Bismaleimide	105391-33-1 / 25722-66-1	1.11 E-02	8.31	83100	2.76	27575
Other organic materials	Bis(4-cyanatophenyl)propane	Proprietary	1.11 E-02	8.31	83100	2.76	27575
Other organic materials	Phenol	Proprietary	1.11 E-02	8.31	83100	2.76	27575
Other inorganic materials	Aluminum Hydroxide	21645-51-2	1.11 E-02	8.31	83100	2.76	27575
	Laminate Core Subtota		6.34 E-02	47.49	332400	15.76	110301
Other inorganic materials	Barium Sulfate	Proprietary	4.92 E-03	3.685	36850	1.22	12228
Other inorganic materials	Dipropylene gylcol monomethyl ethe	Proprietary	2.57 E-03	1.923	19230	0.64	6381
Thermoset	Epoxy resin	Proprietary	2.46 E-03	1.843	18430	0.61	6116
Other inorganic materials	Talc containing no asbestiform filbers	Proprietary	4.27 E-04	0.320	3200	0.11	1062
Other organic materials	Morpholine derivative	Proprietary	4.27 E-04	0.320	3200	0.11	1062
Other inorganic materials	Silica	Proprietary	1.07 E-04	0.080	800	0.03	265
	Soldermask Subtota		1.09 E-02	8.17	81710	2.71	27114
Copper & its alloys	Copper	7440-50-8	5.71 E-02	42.79	427910	14.20	141994
Nickel & its alloys	Nickel	7440-02-0	1.75 E-03	1.31	13080	0.43	4340
Precious metals	Gold	7440-57-5	3.27 E-04	0.25	2450	0.08	813
Subtotal			1.33 E-01	100.0	857550	33	331832

Solder Ball

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Tin & its alloys	Tin	7440-31-5	6.04 E-02	96.50	965000	15.03	150296
Tin & its alloys	Silver	7440-22-4	1.88 E-03	3.00	30000	0.47	4672
Tin & its alloys	Copper	7440-50-8	3.13 E-04	0.50	5000	0.08	779
Subtotal			6.26 E-02	100	1000000	15.57	155747

Bond Wires

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Precious metals	Gold	7440-57-5	3.32 E-03	99	990000	0.83	8258
Precious metals	Palladium	7440-05-3	3.35 E-05	1	10000	0.01	83
Subtotal			3.35 E-03	100	1000000	0.83	8341

Chip

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Doped Silicon	7440-21-3	1.25 E-02	100	1000000	3.10	31014

Die Attach

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Silicon dioxide	Proprietary	3.14 E-04	41.86	418600	0.08	780
Other organic materials	Diester resin	Proprietary	1.92 E-04	25.58	255800	0.05	476
Other organic materials	Functionalized este	Proprietary	1.39 E-04	18.60	186000	0.03	346
Thermoset	Epoxy resin	Proprietary	5.23 E-05	6.98	69800	0.01	130
Other organic materials	Polymeric materia	Proprietary	5.23 E-05	6.98	69800	0.01	130
Subtotal			7.49 E-04	100.00	1000000	0.19	1863

	Weight (g)	Percentage (%)	PPM
Package Totals	**4.02 E-01**	**100.00**	**1000000**

Note: The information provided in this declaration are true to the best of ADI's knowledg

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

ANALOG DEVICES

ADI Proprietary