

Product / Package Information

Package	CSP BGA - Exposed Die
Body Size	12 X 12 mm
Ball Count	196
Terminal Finish	SnAgCu
Ball Size	0.45 mm
MS Number	MS011252A

Environmental Information

RoHS Compliant	Yes
High Temperature Compliant	Yes
Halogen Free Compliant	Yes
REACH SVHC Compliant	Yes

Materials Declaration

Underfill

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Other inorganic materials	Silicon dioxide	60676-86-0	5.77 E-03	66.34	663400	1.64		16434
Other organic materials	p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	8.87 E-04	10.20	102000	0.25		2527
Thermosets	Bisphenol F type liquid epoxy resin	9003-36-5	8.87 E-04	10.20	102000	0.25		2527
Other organic materials	Amine type hardener	Proprietary	6.66 E-04	7.65	76530	0.19		1896
Thermosets	Bisphenol A type liquid epoxy resin	25068-38-6	2.22 E-04	2.55	25500	0.06		632
Others	Additive	Proprietary	2.22 E-04	2.55	25500	0.06		632
Other inorganic materials	Carbon Black	1333-86-4	4.44 E-05	0.51	5100	0.01		126
Subtotal	Subtotal		8.70 E-03	100.00	1000030	2.48		24773

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Composite	Glass Cloth	65987-17-3	2.43 E-02	12.58	125793	6.91		69128
Copper & its alloys	Copper Foil	7440-50-8	2.61 E-02	13.52	135173	7.43		74263
Others	Inorganic Filler	Proprietary	1.22 E-02	6.21	63124	3.47		34689
Thermoset	Epoxy Resin	7328-97-4	8.45 E-03	4.38	43779	2.41		24058
Thermoset	Flame Resistant Epoxy Resin	Proprietary	5.22 E-03	2.71	27053	1.49		14867
Thermoset	Heat Resistant Resin	Proprietary	5.22 E-03	2.71	27053	1.49		14867
	Laminate Core Subtotal		8.14 E-02	42.20	421974	23.19		231892
Other organic materials	Epoxy Resin	Proprietary	7.50 E-03	3.89	38860	2.14		21355
Other inorganic materials	Barium sulfate	7727-43-7	9.50 E-03	4.82	48223	2.70		27050
Other inorganic materials	Talc	14807-96-6	2.00 E-03	1.04	10363	0.57		5695
Other inorganic materials	Silica	Proprietary	1.00 E-03	0.52	5181	0.28		2847
	Soldermask Subtotal		2.00 E-02	10.36	103627	5.69		56947
Copper & its alloys	Copper plating	7440-50-8	9.02 E-02	46.73	467268	25.68		256783
Tin & its alloys	Tin	7440-31-5	1.33 E-03	96.50	965000	0.38		3781
Tin & its alloys	Silver	7440-22-4	4.13 E-05	3.00	30000	0.012		118
Tin & its alloys	Copper	7440-50-8	6.88 E-06	0.50	5000	0.0020		20
	SOP Subtotal		1.33 E-03	100.00	1000000	0.39		3918
Subtotal	SOP Subtotal		1.38 E-03	0.71	7130	0.39		3918
			1.93 E-01	100.00	1000000	54.95		549541

Solder Ball

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Tin & its alloys	Tin	7440-31-5	6.69 E-02	96.50	965000	19.04		190406
Tin & its alloys	Silver	7440-22-4	2.08 E-03	3.00	30000	0.59		5919
Tin & its alloys	Copper	7440-50-8	3.46 E-04	0.50	5000	0.10		987
Subtotal			6.93 E-02	100	1000000	19.73		197312

Chip

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Other inorganic materials	Doped Silicon	7440-21-3	4.50 E-02	100	1000000	12.80		127996

Solder Bump

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Tin & its alloys	Tin	7440-31-5	3.28 E-02	98.20	982000	9.35		93491
Tin & its alloys	Silver	7440-22-4	6.02 E-04	1.80	18000	0.17		1714
Subtotal			3.34 E-02	100.00	1000000	9.52		95205

Polyimide

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Other organic materials	Esterified Polyamic Acid Resin	Proprietary	3.12 E-04	82.00	820000	0.09		888
Other organic materials	Acrylate Ester	Proprietary	3.04 E-05	8.00	80000	0.01		87
Other organic materials	Others	Proprietary	3.80 E-05	10.00	100000	0.011		108
Subtotal			3.80 E-04	100.00	1000000	0.11		1083

UBM

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		PPM
				Percentage (%)	PPM	Percentage (%)	PPM	
Nickel and its alloys	Nickel	7440-02-0	1.31 E-03	90.84	908395	0.37		3716
Copper & its alloys	Copper	7440-50-8	9.86 E-05	6.86	68634	0.028		281
Other non-ferrous metals and	Titanium	7440-32-6	3.30 E-05	2.30	22971	0.009		94
Subtotal			1.44 E-03	100.00	1000000	0.41		4091

Package Totals	Weight (g)	Percentage (%)	PPM
	3.51 E-01	100.00	1000001

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.



ADI Proprietary