

**Product / Package Information**

<b>Package</b>	CSP BGA - FlipChip
<b>Body Size</b>	10 X 10 mm
<b>Ball Count</b>	144
<b>Terminal Finish</b>	SnAgCu
<b>Ball Size</b>	0.45 mm
<b>MS Number</b>	MS012340B + MS012529A

**Environmental Information**

<b>RoHS Compliant</b>	Yes
<b>High Temperature Compliant</b>	Yes
<b>Halogen Free Compliant</b>	Yes
<b>REACH SVHC Compliant</b>	Yes

**Materials Declaration**

**Underfill**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Other inorganic materials	Silicon dioxide	60676-96-0	8.21 E-04	66.34	663400	0.50		5018
Other organic materials	p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	1.26 E-04	10.20	102000	0.08		772
Thermosets	Bisphenol F type liquid epoxy resin	9003-36-5	1.26 E-04	10.20	102000	0.08		772
Other organic materials	Amine type hardener	Proprietary	9.47 E-05	7.65	76530	0.06		579
Thermosets	Bisphenol A type liquid epoxy resin	25068-38-6	3.16 E-05	2.55	25500	0.02		193
Others	Additive	Proprietary	3.16 E-05	2.55	25500	0.02		193
Other inorganic materials	Carbon Black	1333-86-4	6.31 E-06	0.51	5100	0.00		39
Subtotal	Subtotal		1.24 E-03	100.00	1000030	0.76		7565

**Laminate**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Copper & its alloys	Copper Foil	7440-50-8	2.99 E-02	44.00	440000	18.29		182906
ComPOSITE	Glass Cloth	65997-17-3	8.84 E-03	13.00	130000	5.40		5400
Thermoset	Resin	7328-97-4	1.22 E-02	18.00	180000	7.48		74825
	Laminate Core Subtotal		2.11 E-02	31.00	310000	12.89		128866
Other inorganic materials	Barium sulfate	7727-43-7	6.12 E-03	9.00	90000	3.74		37413
Thermoset	Epoxy Resin	Proprietary	4.08 E-03	6.00	60000	2.49		24942
Others	Other materials	Proprietary	3.06 E-03	4.50	45000	1.87		18706
Other organic materials	Talc containing no asbestos fibers	14807-96-6	1.02 E-03	1.50	15000	0.62		6235
Other organic materials	Silica	Proprietary	3.40 E-04	0.50	5000	0.21		2078
	Soldermask Subtotal		1.46 E-02	21.50	215000	8.94		89374
Tin & its alloys	Tin	7440-31-5	2.30 E-03	96.50	965000	1.40		14040
Tin & its alloys	Silver	7440-22-4	7.14 E-05	3.00	30000	0.044		436
Tin & its alloys	Copper	7440-50-8	1.19 E-05	0.50	5000	0.0073		73
	SOP Subtotal		2.38 E-03	100.00	1000000	1.45		14549
Subtotal	SOP Subtotal		6.80 E-02	100.00	1000000	42		415695

**Solder Ball**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Tin & its alloys	Tin	7440-31-5	4.91 E-02	96.50	965000	29.99		299934
Tin & its alloys	Silver	7440-22-4	1.53 E-03	3.00	30000	0.93		9324
Tin & its alloys	Copper	7440-50-8	2.54 E-04	0.50	5000	0.16		1554
Subtotal			5.08 E-02	100	1000000	31.08		310813

**Chip**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Other inorganic materials	Doped Silicon	7440-21-3	2.59 E-02	100	1000000	15.82		158174

**Solder Bump**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Tin & its alloys	Tin	7440-31-5	1.84 E-02	98.20	982000	10.04		100381
Tin & its alloys	Silver	7440-22-4	3.01 E-04	1.80	18000	0.18		1840
Subtotal			1.67 E-02	100.00	1000000	10.22		102200

**Polyimide**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Other organic materials	Polymer	Proprietary	1.80 E-04	94.50	945000	0.11		1098
Other organic materials	3,6,9-Trioxaundecamethylene dimethacrylate	109-17-1	1.05 E-05	5.50	55000	0.01		64
Subtotal			1.90 E-04	100.00	1000000	0.12		1162

**UBM**

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level		
				Percentage (%)	PPM	Percentage (%)	PPM	
Nickel and its alloys	Nickel	7440-02-0	6.53 E-04	90.84	908395	0.399		3989
Copper & its alloys	Copper	7440-50-8	4.93 E-05	6.86	68634	0.030		301
Other non-ferrous metals and alloys	Titanium	7440-32-6	1.65 E-05	2.30	22971	0.010		101
			7.18 E-04	100.00	1000000	0.44		4391

<b>Package Totals</b>			<b>Weight (g)</b> 1.64 E-01			<b>Percentage (%)</b> 100.00		<b>PPM</b> 1000000
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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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