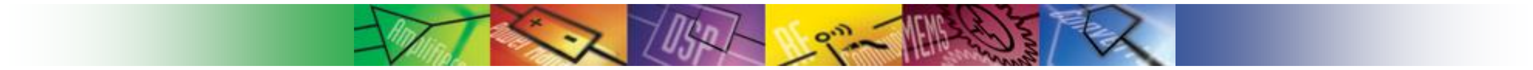

Product / Package Information

Package	FCBGA
Body Size (mm)	10 x 10
I/O Count	144
Terminal Finish	SnAgCu
Ball Size	0.45
MS Number	MS012341C + MS012529A

Environmental Information

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

Materials Declaration

Heat Spreader Epoxy

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Aluminum oxide	Proprietary	5.80E-06	80.00	800000	0.00	48
Other organic materials	Dimethyl siloxane	68083-19-2	1.45E-06	20.00	200000	0.00	12
Subtotal			7.25E-06	100.00	1000000	0.01	60

Heat Spreader

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Copper & its alloys	Copper	7440-50-8	3.25 E-04	98.45	984500	0.27	2701
Nickel & its alloys	Nickel	7440-02-0	5.12 E-06	1.55	15500	0.00	43
Subtotal			3.30 E-04	100.00	1000000	0.27	2743

Laminate

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Glass	Continuous filament fiber glass	65997-17-3	8.83 E-03	13.00	130000	7.33	73322
Copper & its alloys	Copper	7440-50-8	2.99 E-02	44.00	440000	24.82	248166
Thermoset	Thermosetting resin (Including inorganic filler)	-	1.22 E-02	18.00	180000	10.15	101523
Other inorganic materials	Talc containing no asbestiform fibers	14807-96-6	1.02 E-03	1.50	15000	0.85	8460
Other inorganic materials	Silica, amorphous	Trade secret	3.39 E-04	0.50	5000	0.28	2820
Other inorganic materials	Barium sulfate	7727-43-7	6.11 E-03	9.00	90000	5.08	50761
Other organic materials	Epoxy resin	Trade secret	4.07 E-03	6.00	60000	3.38	33841
Others	Others	-	3.06 E-03	4.50	45000	2.54	25381
Others	SOP	-	2.38 E-03	3.50	35000	1.97	19740
Subtotal			6.79 E-02	100.00	1000000	56.40	564014

Solder Ball

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Tin & its alloys	Tin	7440-31-5	4.90 E-02	96.5	965000	40.69	406925
Tin & its alloys	Silver	7440-22-4	1.52 E-03	3.0	30000	1.27	12651
Tin & its alloys	Copper	7440-50-8	2.54 E-04	0.5	5000	0.21	2108
Subtotal			5.08 E-02	100.0	1000000	42.17	421683

Chip

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Doped Silicon	7440-21-3	1.31 E-04	100.0	1000000	0.11	1089

Underfill

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Epoxy Resins	p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)anilin	7440-22-4	6.81 E-04	55.08	550840	0.57	5654
Epoxy Resins	Bisphenol F type liquid epoxy resin	9003-36-5	2.09 E-04	16.95	169490	0.17	1740
Thermosets	Bisphenol A type liquid epoxy resin	25068-38-6	2.09 E-04	16.95	169490	0.17	1740
Other organic materials	Amine type hardener	Trade secret	7.85 E-05	6.36	63560	0.07	652
Other inorganic materials	Carbon black	1333-86-4	2.62 E-05	2.12	21190	0.02	217
Other inorganic materials	Silicon dioxide	60676-86-0	2.62 E-05	2.12	21190	0.02	217
Others	Additives	Trade secret	5.24 E-06	0.42	4240	0.004	44
Subtotal			1.24 E-03	100.0	1000000	1.03	10264

Wafer Bumps

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Tin & its alloys	Tin	7440-31-5	1.64 E-05	98.2	982000	0.01	136
Tin & its alloys	Silver	7440-22-4	3.00 E-07	1.8	18000	0.00	2
Subtotal			1.67 E-05	100.0	1000000	0.01	139

UBM / Redistribution Layers

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Nickel and its alloys	Nickel	7440-02-0	6.52 E-07	90.8	908395	0.0005	5
Copper & its alloys	Copper	7440-50-8	4.92 E-08	6.9	68634	0.0000	0
Other non-ferrous metals and a	Titanium	7440-32-6	1.65 E-08	2.3	22971	0.0000	0
Subtotal			7.17 E-07	100.0	1000000	0.0006	6

Polyimide

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other organic materials	Polymer	Proprietary	1.71 E-07	90.0	900000	0.00014	1
Other organic materials	Additives	Proprietary	1.90 E-08	10.0	100000	0.00002	0
Subtotal			1.90 E-07	100.0	1000000	0.00016	2

	Weight (g)	Percentage (%)	PPM
Package Totals	**1.20 E-01**	100.00	1000000

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.

ANALOG DEVICES

ADI Proprietary