Product / Package Information

Package	LGA - ADIS16203
Body Size	
Lead Count	16
Terminal Finish	Au

Environmental Compliance Information

RoHS Compliant

High Temperature Compliant

Halogen Free Compliant

REACH SVHC Compliant

Materials Declaration

PWB

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Composite	PCB	Proprietary	9.42 E-02	100.00	1000000	15.08	150833

Board Frame

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Composite	Board Frame	Proprietary	4.61 E-02	100.00	1000000	7.39	73855

Solder Paste

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Tin and its alloys	Tin	7440-31-5	6.99 E-02	95.00	950000	11.20	112015
Tin and its alloys	Antimony	7440-36-0	3.68 E-03	5.00	50000	0.59	5896
Subtotal			7.36 E-02	100.0	1000000	11.79	117911

Chip

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Inorganic silicon	Doped Silicon	7440-21-3	3.48 E-02	100.0	1000000	5.58	55783

Bond Wires

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Precious metals	Gold	7440-57-5	3.92 E-02	100.0	1000000	6.28	62832

Die Attach

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Silicon Dioxide	14808-60-7	5.39 E-04	49.90	499000	0.09	863
Organic materials	Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	9003-36-5	2.16 E-04	20.00	200000	0.03	346
Organic materials	1,4-bis(2,3-epoxypropoxy)butane	2425-79-8	2.16 E-04	20.00	200000	0.03	346
Others	Aromatic Amine	Proprietary	5.40 E-05	5.00	50000	0.01	87
Glass	Glass	65997-17-3	5.40 E-05	5.00	50000	0.009	87
Organic materials	Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	25068-38-6	1.08 E-06	0.10	1000	0.0002	2
Subtotal			1.08 E-03	100.00	1000000	0.17	1730

Underfill

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other Inorganic materials	Silica	60676-86-0	1.92 E-02	73.40	260395	3.07	30703
Other organic materials	hexahydromethylphthalic anhydride	25550-51-0	3.92 E-03	15.00	53214	0.63	6275
Other organic materials	1,6-Naphthalenediol diglycidyl ether	27610-48-6	1.96 E-03	7.50	26607	0.31	3137
Other organic materials	Bisphenol-A epichlorhydrin resin MW <= 700	25068-38-6	7.83 E-04	3.00	10643	0.13	1255
Other organic materials	4,4'-Methylene diphenyl diglycidyl ether	1675-54-3	1.44 E-04	0.55	1951	0.02	230
Other organic materials	Bisphenol-F epichlorhydrin resin; MW<700	9003-36-5	1.44 E-04	0.55	1951	0.02	230
Subtotal			2.61 E-02	100.0	1000000	4.18	41830

Label

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other organic materials	Static Dissipative Adhesive	Proprietary	5.73 E-02	50.65	506500	9.18	91774
Others	Topcoat Mixture	Proprietary	2.67 E-02	23.60	236000	4.28	42761
Other organic materials	Polyimide Film	Proprietary	2.31 E-02	20.45	204500	3.71	37054
Others	Primer Mixture	Proprietary	5.99 E-03	5.30	53000	0.96	9603
Subtotal			1.13 E-01	100.0	1000000	18.12	181192

Capacitor 1

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
	Ceramic						
Ceramics	Barium oxide	1304-28-5	1.56 E-02	60.00	600000	2.51	25071
Ceramics	Titanium dioxide	13463-67-7	7.82 E-03	30.00	300000	1.25	12535
Ceramics	Misc	Proprietary	2.61 E-03	10.00	100000	0.42	4178
	Subtotal		2.61 E-02	100.00	1000000	4.18	41785
	Outer Electrode						
Copper and its alloys	Copper	7440-50-8	5.96 E-03	100.00	1000000	0.95	9542
Glass	Silicon dioxide	7631-86-9	5.29 E-04	80.00	800000	0.08	848
Glass	Diboron trioxide	1303-86-2	1.32 E-04	20.00	200000	0.02	212
	Subtotal		6.62 E-04	100.00	1000000	0.11	1060
Nickel and its alloys	Nickel	7440-02-0	4.37 E-03	100.00	167702	0.70	7007
Tin and its alloys	Tin	7440-31-5	7.26 E-04	100.00	27835	0.12	1163
Subtotal			3.78 E-02			6.06	60558

LCC Package

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
	Ceramic Base						
Ceramics	Alumina	1344-28-1	9.70 E-02	91.32	913200	15.54	155370
Ceramics	Chromium oxide	1308-38-9	4.09 E-03	3.85	38500	0.66	6550
Ceramics	Silicon dioxide	7631-86-9	3.80 E-03	3.58	35800	0.61	6091
Ceramics	Titanium dioxide	13463-67-7	1.05 E-03	0.99	9900	0.17	1684
Ceramics	Molybdenum	7439-98-7	2.76 E-04	0.26	2600	0.04	442
Subtotal			1.06 E-01	100.00	1000000	17.01	170138
	Terminals						
Other inorganic materials	Tungsten	7440-33-7	9.11 E-03	83.55	835500	1.46	14590
Nickel & its alloys	Nickel	7440-02-0	1.17 E-03	10.71	107100	0.19	1870
Precious metals	Gold	7440-57-5	6.26 E-04	5.74	57400	0.10	1002
Subtotal			1.09 E-02	100.00	1000000	1.75	17462
	Metal Lid						
Precious metals	Iron	7439-89-6	1.46 E-02	58.0	579900	2.34	23421
Nickel & its alloys	Nickel	7440-02-0	1.06 E-02	42.0	420100	1.70	16967
Subtotal			2.52 E-02	100.0	1000000	4.04	40388
	Solder Seal						
Tin & its alloys	Lead	7439-92-1	2.01 E-03	91.14	911400	0.32	3212
Tin & its alloys	Tin	7440-31-5	1.39 E-04	6.33	63300	0.02	223
Tin & its alloys	Silver	7440-22-4	2.79 E-05	1.27	12700	0.00	45
Tin & its alloys	Indium	7440-74-6	2.77 E-05	1.26	12600	0.00	44
Subtotal			2.20 E-03	100.0	1000000	0.35	3525
	Bond Wires						
Aluminum & its alloys	Aluminum	7429-90-5	3.00 E-05	99.0	990000	0.00	48
Aluminum & its alloys	Silicon	7440-21-3	3.03 E-07	1.0	10000	0.0000	0
Subtotal			3.03 E-05	100.0	1000000	0.00	49
	Die Attach						
Polymer	Polymer	Proprietary	3.29 E-03	100	1000000	0.53	5263
	Chip						
Other inorganic materials	Doped Silicon	7440-21-3	6.00 E-03	100	1000000	0.96	9612
Subtotal			1.54 E-01			24.64	246436

Resistor

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
	Ceramics						
Ceramics	Aluminum oxide ; Alumina; Corundum;	1344-28-1	1.33 E-03	96.60	966000	0.21	2136
Ceramics	Silica; Silicon dioxide	7631-86-9	2.90 E-05	2.10	21000	0.00	46
Ceramics	Magnesium oxide	1309-48-4	1.38 E-05	1.00	10000	0.002	22
Ceramics	Calcium oxide	1305-78-8	4.14 E-06	0.30	3000	0.001	7
Subtotal			1.38 E-03	100.00	1000000	0.22	2211
	Top Terminal						
Precious metals	Silver	7440-22-4	1.69 E-05	91.23	912300	0.00270	27
Precious metals	Palladium	7440-05-3	1.22 E-06	6.61	66100	0.00020	2
Glass	Lead(II) oxide; Lead oxide (PbO); C.I.	1317-36-8	2.40 E-07	1.30	13000	0.00004	0.4
Glass	Silica; Silicon dioxide	7631-86-9	1.59 E-07	0.86	8600	0.00003	0.3
Subtotal			1.85 E-05	100.00	1000000	0.00296	30
	Bottom Terminal						
Precious metals	Silver	7440-22-4	2.33 E-05	97.49	974937	0.00374	37
Glass	Lead(II) oxide; Lead oxide (PbO); C.I.	1317-36-8	3.60 E-07	1.50	15038	0.00006	1
Glass	Silica; Silicon dioxide	7631-86-9	2.40 E-07	1.00	10025	0.00004	0.4
Subtotal			2.39 E-05	100.00	1000000	0.00384	38
	Resistive Element						
Glass	Ruthenium(IV) oxide	12036-10-1	7.56 E-06	42.88	428800	0.00121	12
Glass	Lead(II) oxide; Lead oxide (PbO); C.I.	1317-36-8	4.87 E-06	27.60	276000	0.00078	8
Glass	Silica; Silicon dioxide	7631-86-9	3.53 E-06	20.00	200000	0.00057	6
Glass	Boron oxide	1303-86-2	1.25 E-06	7.11	71100	0.00020	2
Glass	Manganese dioxide	1313-13-9	4.25 E-07	2.41	24100	0.00007	1
Subtotal			1.76 E-05	100.00	1000000	0.00283	28
	First Protective Coating						
Glass	Lead(II) oxide; Lead oxide (PbO); C.I.	1317-36-8	9.70 E-06	54.97	549700	0.00155	16
Glass	Silica; Silicon dioxide	7631-86-9	4.52 E-06	25.61	256100	0.00072	7
Glass	Boron oxide	1303-86-2	2.28 E-06	12.91	129100	0.00036	4
Glass	Zinc oxide	1314-13-2	7.41 E-07	4.20	42000	0.00012	1
Glass	Chromium(III) oxide; Pigment green 17	1308-38-9	4.07 E-07	2.31	23100	0.00007	1
Subtotal			1.76 E-05	100.00	1000000	0.00283	28
	Second Protective Coating						
Other organic materials	Epichlorohydrin, o-cresol, formaldehyde	29690-82-2	1.93 E-05	68.99	689900	0.00309	31
Other inorganic materials	Silicon dioxide	7631-86-9	6.43 E-06	23.01	230100	0.00103	10
Other inorganic materials	Carbon black	1333-86-4	2.23 E-06	8.00	80000	0.00036	4
Subtotal			2.79 E-05	100.00	1000000	0.00	45
	Side Terminal						
Other organic materials	Bisphenol A, epichlorohydrin polymer;	25068-38-6	7.25 E-05	45.45	454511	0.01162	116
Precious metals	Silver	7440-22-4	7.25 E-05	45.45	454474	0.01162	116
Other inorganic materials	Carbon black	1333-86-4	1.45 E-05	9.10	91015	0.00233	23
Subtotal			1.60 E-04	100.00	1000000	0.03	256
	Middle Terminal						
Nickel and its alloys	Nickel	7440-02-0	1.29 E-04	100.00	1000000	0.02067	207
	Outer Terminal						
Tin and its alloys	Tin	7440-31-5	1.20 E-04	100.00	1000000	0.01922	192
Subtotal			1.89 E-03			0.30347	3035

Capacitor 2

Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Ceramics	Barium Titanate	12047-27-7	1.10 E-03	44.00	440000	0.18	1762
Copper and its alloys	Copper	7440-50-8	8.00 E-04	32.00	320000	0.13	1282
Nickel and its alloys	Nickel	7440-02-0	5.00 E-04	20.00	200000	0.08	801
Tin and its alloys	Tin	7440-31-5	6.00 E-05	2.40	24000	0.01	96
Others	Others	Proprietary	4.00 E-05	1.60	16000	0.01	64
Subtotal			2.50 E-03	100.00	1000000	0.40	4005

	Weight (g)	Percentage (%)	PPM
Package Totals	**6.24 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