

PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	BW	Body Size (mil/mm)	15 x 17 mm
Package Weight – Site 1	B1: 661 mg B2: 737 mg B3: 681.7579 mg	Package Weight – Site 2	588 mg
Package Weight – Site 3	587 mg	Package Weight – Site 4	B1: 642 mg B2: 644.9992 mg
Package Weight – Site 5	B1: 634.3329 mg B2: 634.4024 mg		

SUMMARY

The 165- BGA Pb-Free package is compliant to RoHS. Cypress Ordering Part Numbers containing an “X” (e.g. CY7C1328G-133AXI, CY2308SXC-1HT) meet the Directive 2002/95/EC (RoHS) requirement.

ASSEMBLY Site 1 – Package Qualification Report #s 050704, 120612 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS. Listed in the table below are materials that are neither contained nor intentionally added to this product.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BW165-G
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
Azo colorants	0	0	As per MSDS
Ozone Depleting Substances	0	0	As per MSDS
Polychlorinated Biphenyls (PCBs)	0	0	As per MSDS
Polychlorinated Napthalenes	0	0	As per MSDS
Radioactive Substances	0	0	As per MSDS
Shortchain Chlorinated Paraffins	0	0	As per MSDS
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	As per MSDS
Tributyl Tin Oxide (TBTO)	0	0	As per MSDS
Formaldehyde	0	0	As per MSDS

Note 1: Qualification reports are available at www.cypress.com. Access them by doing a Search on the Report #.

Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered “non-existent in the product”. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

**B1. MATERIAL COMPOSITION (Note 3)
SnAgCu Using Green Substrate**

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	Silica Oxide	60676-86-0	23.40	11.05	35,400	3.54
		Acrylic	29690-82-2	21.15	9.99	32,000	3.20
		Epoxy	68541-56-0	16.92	7.99	25,600	2.56
		Bisphenol	13676-54-5	31.73	14.99	48,000	4.80
		Triazol	25722-66-1	37.08	17.51	56,100	5.61
		Cu	7440-50-8	77.07	36.40	116,600	11.66
		Ni	7440-02-0	3.17	1.50	4,800	0.48
		Au	7440-57-5	1.19	0.56	1,800	0.18
Solder Ball	External Plating	Sn	7440-31-5	76.54	95.50	115,800	11.58
		Ag	7440-22-4	3.17	4.00	4,800	0.48
		Cu	7440-50-8	0.40	0.50	600	0.06
Die Attach	Adhesive	Silica Fused	60676860	37.35	53.97	56,500	5.65
		Diester	-----	19.04	27.51	28,800	2.88
		Epoxy Resin	-----	3.83	5.53	5,800	0.58
		Functionalized Esters	-----	6.94	10.03	10,500	1.05
		Polymetric Resin	-----	2.05	2.96	3,100	0.31
Die	Circuit	Si	7440-21-3	40.78	100.00	61,700	6.17
Wire	Interconnect	Au	7440-57-5	4.96	100.00	7,500	0.75
Mold Compound	Encapsulation	Silica Fused	60676860	226.19	89.00	342,200	34.22
		Epoxy Resin	-----	14.01	5.50	21,200	2.12
		Phenolic Resin	-----	14.01	5.50	21,200	2.12

Package Weight (mg): **661**

% Total: **100**

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B2. SnAgCu Using Non-Green Substrate

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	SiO ₂	60676-86-0	22.18	10.49	30,102	3.01%
		Acrylic	Trade Secret	19.45	9.20	26,400	2.64%
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	12.98	6.14	17,619	1.76%
		Bisphenol	13676-54-5	31.67	14.98	42,986	4.30%
		Triazol	25722-66-1	38.02	17.98	51,595	5.16%
		Copper (Cu)	7440-50-8	83.04	39.28	112,702	11.27%
		Nickel (Ni)	7440-02-0	2.94	1.39	3,989	0.40%
		Gold (Au)	7440-57-5	1.04	0.49	1,406	0.14%
Solder Ball	External Plating	Br	7726-95-6	0.12	0.06	158	0.02%
		Sn	7440-31-5	76.00	95.50	103,147	10.31%
		Ag	7440-22-4	3.18	4.00	4,320	0.43%
Die Attach	Adhesive	Cu	7440-50-8	0.40	0.50	540	0.05%
		Epoxy Resin	Trade Secret	8.29	7.00	11,247	1.12%
		Diester	Trade Secret	32.55	27.50	44,184	4.42%
		Functionalized Ester	Trade Secret	11.84	10.00	16,067	1.61%
		Polymeric	Trade Secret	3.55	3.00	4,820	0.48%
Die	Circuit	Silica fused	60676-86-0	62.15	52.50	84,351	8.44%
		Si	7440-21-3	69.97	100.00	94,965	9.50%
Wire	Interconnect	Au	7440-57-5	3.36	100.00	4,560	0.46%
Mold Compound	Encapsulation	Silica fused	60676-86-0	226.13	89.00	306,910	30.69%
		Epoxy Resin 1	93705-66-9	11.43	4.50	15,518	1.55%
		Epoxy Resin 2	Undisclosed	5.08	2.00	6,897	0.69%
		Phenol resin	106466-55-1	11.43	4.50	15,518	1.55%

Package Weight (mg): **737**

% Total: **100**

Note 1: Qualification reports are available at www.cypress.com. Access them by doing a Search on the Report #.

Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered "non-existent in the product". In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B3. SnAgCu Using Non-Green Substrate
Using Copper Palladium Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	SiO ₂	60676-86-0	22.1800	10.4900%	32534	3.2534%
		Acrylic	Trade Secret	19.4500	9.1987%	28529	2.8529%
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	12.9800	6.1388%	19039	1.9039%
		Bisphenol	13676-54-5	31.6700	14.9782%	46453	4.6453%
		Triazol	25722-66-1	38.0200	17.9815%	55768	5.5768%
		Copper (Cu)	7440-50-8	83.0400	39.2736%	121803	12.1803%
		Nickel (Ni)	7440-02-0	2.9400	1.3905%	4312	0.4312%
		Gold (Au)	7440-57-5	1.0400	0.4919%	1525	0.1525%
		Br	7726-95-6	0.1200	0.0568%	176	0.0176%
Solder Ball	External Plating	Sn	7440-31-5	76.0000	95.5014%	111476	11.1476%
		Ag	7440-22-4	3.1800	3.9960%	4664	0.4664%
		Cu	7440-50-8	0.4000	0.5026%	587	0.0587%
Die Attach	Adhesive	Modified Epoxy resin	Trade Secret	42.5962	61.5463%	62480	6.2480%
		Epoxy resin	Trade Secret	16.9499	24.4905%	24862	2.4862%
		Dapsone	80-08-0	5.3727	7.7629%	7881	0.7881%
		Treated fume silica	67762-90-7	1.4484	2.0928%	2125	0.2125%
		Substituted silane	Trade Secret	1.0489	1.5155%	1539	0.1539%
		Elastomeric polymer	Trade Secret	0.9182	1.3267%	1347	0.1347%
		Epoxy resin	Trade Secret	0.8757	1.2653%	1284	0.1284%
Die	Circuit	Si	7440-21-3	69.9700	100.0000%	102632	10.2632%
Wire	Interconnect	Copper (Cu)	7440-50-8	1.5668	97.5001%	2298	0.2298%
		Palladium (Pd)	5/3/7440	0.0402	2.4999%	59	0.0059%
Mold Compound	Encapsulation	Silica	60676-86-0	224.1450	89.6756%	328775	32.8775%
		Epoxy resin	Trade Secret	13.8100	5.5251%	20256	2.0256%
		Phenol resin	Trade Secret	11.2460	4.4993%	16496	1.6496%
		Carbon Black	1333-86-4	0.7499	0.3000%	1100	0.1100%

Package Weight (mg): 681.7579

% Total: 100.0000

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

II. DECLARATION OF PACKAGING / INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	-----	-----	CoA-TRAY-R
Others	Shielding bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-SBAG –R
	Moisture Barrier bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-MBBG-R
	Protective Band	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PROB-R
	Shipping and Inner Box	< 10.0	< 4.0	< 4.0	< 5.0	-----	-----	CoA-ABOX-R

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

ASSEMBLY Site 2 – Package Qualification Report #s 083601 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS. Listed in the table below are materials that are neither contained nor intentionally added to this product.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BW165-AT
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
Azo colorants	0	0	As per MSDS
Ozone Depleting Substances	0	0	As per MSDS
Polychlorinated Biphenyls (PCBs)	0	0	As per MSDS
Polychlorinated Napthalenes	0	0	As per MSDS
Radioactive Substances	0	0	As per MSDS
Shortchain Chlorinated Paraffins	0	0	As per MSDS
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	As per MSDS
Tributyl Tin Oxide (TBTO)	0	0	As per MSDS
Formaldehyde	0	0	As per MSDS

Note 1: Qualification reports are available at www.cypress.com. Access them by doing a Search on the Report #.

Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered “non-existent in the product”. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B. MATERIAL COMPOSITION (Note 3)

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Substrate	Base Material	Au, metal & alloy	7440-57-5	0.91	0.28	1,547	0.16
		Ni, metal & alloy	7440-02-0	4.20	1.28	7,141	0.71
		Cu, metal & alloy	7440-50-8	192.30	58.41	326,994	32.69
		Solder Mask	-----	27.46	8.34	46,687	4.67
		Epoxy Resin	-----	1.53	0.46	2,601	0.26
		BT Resin	-----	65.64	19.94	111,599	11.16
		Glass Fiber	-----	37.21	11.30	63,263	6.33
Solder Ball	External Plating	Sn	7440-31-5	77.00	98.50	130,909	13.09
		Ag	7440-22-4	0.78	1.00	1,329	0.13
		Cu	7440-50-8	0.39	0.50	665	0.07
Die Attach	Adhesive	Filler	Trade Secret	14.22	48.00	24,185	2.42
		BMI Hybrid Resin	Trade Secret	14.82	50.00	25,192	2.52
		Hardener	Trade Secret	0.30	1.00	504	0.05
		Others	Trade Secret	0.30	1.00	504	0.05
Die	Circuit	Si	7440-21-3	80.40	100.00	136,694	13.67
Wire	Interconnect	Au	7440-57-5	5.66	99.99	9,622	0.96
Mold Compound	Encapsulation	Silica Fused	60676-86-0	39.04	60.00	66,368	6.64
		Solid Epoxy Resin	-----	6.51	10.00	11,061	1.11
		Phenolic Resin	-----	6.51	10.00	11,061	1.11
		Carbon Black	1333-86-4	0.65	1.00	1,106	0.11
		Crystalline Silica	14808-60-7	3.25	5.00	5,531	0.55
		Metal Hydro Oxide	-----	9.11	14.00	15,486	1.55

Package Weight (mg): **588**

% Total: **100**

II. DECLARATION OF PACKAGING / INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	-----	-----	CoA-TRAY-R
Others	Shielding bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-SBAG –R
	Moisture Barrier bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-MBBG-R
	Protective Band	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PROB-R
	Shipping and Inner Box	< 10.0	< 4.0	< 4.0	< 5.0	-----	-----	CoA-ABOX-R

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Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered “non-existent in the product”. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

ASSEMBLY Site 3 – Package Qualification Report #s 093701 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS. Listed in the table below are materials that are neither contained nor intentionally added to this product.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BW165-AT
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
Azo colorants	0	0	As per MSDS
Ozone Depleting Substances	0	0	As per MSDS
Polychlorinated Biphenyls (PCBs)	0	0	As per MSDS
Polychlorinated Napthalenes	0	0	As per MSDS
Radioactive Substances	0	0	As per MSDS
Shortchain Chlorinated Paraffins	0	0	As per MSDS
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	As per MSDS
Tributyl Tin Oxide (TBTO)	0	0	As per MSDS
Formaldehyde	0	0	As per MSDS

Note 1: Qualification reports are available at www.cypress.com. Access them by doing a Search on the Report #.

Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered “non-existent in the product”. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B. MATERIAL COMPOSITION (Note 3)

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	Au, metal & alloy	7440-57-5	0.91	0.28	1,551	0.16
		Ni, metal & alloy	7440-02-0	4.20	1.28	7,160	0.72
		Cu, metal & alloy	7440-50-8	192.30	58.41	327,819	32.78
		Solder Mask	-----	27.46	8.34	46,812	4.68
		Epoxy Resin	-----	1.53	0.46	2,608	0.26
		BT Resin	-----	65.64	19.94	111,898	11.19
		Glass Fiber	-----	37.21	11.30	63,433	6.34
Solder Ball	External Plating	Sn	7440-31-5	73.15	95.50	124,706	12.47
		Ag	7440-22-4	3.06	4.00	5,223	0.52
		Cu	7440-50-8	0.39	0.50	653	0.07
Die Attach	Adhesive	Filler	Trade Secret	14.22	48.00	24,249	2.43
		BMI Hybrid Resin	Trade Secret	14.82	50.00	25,260	2.53
		Hardener	Trade Secret	0.30	1.00	505	0.05
		Others	Trade Secret	0.30	1.00	505	0.05
Die	Circuit	Si	7440-21-3	80.40	100.00	137,060	13.71
Wire	Interconnect	Au	7440-57-5	5.66	99.99	9,648	0.97
Mold Compound	Encapsulation	Silica Fused	60676-86-0	39.04	60.00	66,546	6.66
		Solid Epoxy Resin	-----	6.51	10.00	11,091	1.11
		Phenolic Resin	-----	6.51	10.00	11,091	1.11
		Carbon Black	1333-86-4	0.65	1.00	1,109	0.11
		Crystalline Silica	14808-60-7	3.25	5.00	5,545	0.56
		Metal Hydro Oxide	-----	9.11	14.00	15,527	1.55

Package Weight (mg): **587**

% Total: **100**

II. DECLARATION OF PACKAGING / INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	-----	-----	CoA-TRAY-R
Others	Shielding bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-SBAG -R
	Moisture Barrier bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-MBBG-R
	Protective Band	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PROB-R
	Shipping and Inner Box	< 10.0	< 4.0	< 4.0	< 5.0	-----	-----	CoA-ABOX-R

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Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered "non-existent in the product". In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites information

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

ASSEMBLY Site 4 – Package Qualification Report #s 103308, 111603 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS are listed in section 1A. Materials from this list may be contained or intentionally added to this product, as it is not considered Pb-Free or RoHS compliant.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BW165-RA
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
Azo colorants	0	0	
Ozone Depleting Substances	0	0	
Polychlorinated Biphenyls (PCBs)	0	0	
Polychlorinated Napthalenes	0	0	
Radioactive Substances	0	0	
Shortchain Chlorinated Paraffins	0	0	
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	
Tributyl Tin Oxide (TBTO)	0	0	
Formaldehyde	0	0	

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B1. MATERIAL COMPOSITION (Note 3)

Using GR9810 Mold Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Substrate	Base Material	Cured Resin	Proprietary	69.66	28.00	108,477	10.85%
		Glass Fabrics	Proprietary	54.74	22.00	85,232	8.52%
		Copper Foil	Proprietary	74.64	30.00	116,225	11.62%
		Diethylene Glycol Monoethyl Ether Acetate	Proprietary	12.44	5.00	19,371	1.94%
		Acetophenone Derivative	Proprietary	12.44	5.00	19,371	1.94%
		Silica Crystalline	14808-60-7	12.44	5.00	19,371	1.94%
		Solvent naptha	Proprietary	12.44	5.00	19,371	1.94%
Solder Ball	External Plating	Sn	7440-31-5	79.16	95.50	123,262	12.33%
		Ag	7440-22-4	3.30	4.00	5,139	0.51%
		Cu	7440-50-8	0.04	0.50	64	0.01%
Die Attach	Adhesive	Silver	7440-22-4	5.05	75.00	7,856	0.79%
		Bismaleimide Resin	Proprietary	1.18	17.50	1,833	0.18%
		Synthetic Resin	Proprietary	0.34	5.00	524	0.05%
		Additive	Proprietary	0.17	2.50	262	0.03%
Die	Circuit	Silicon	7440-21-3	21.40	100.00	33,323	3.33%
Wire	Interconnect	Au	7440-57-5	14.76	100.00	22,982	2.30%
Mold Compound	Encapsulation	Silica	60676-86-0	238.53	89.00	371,428	37.14%
		Epoxy Resin	Proprietary	18.76	7.00	29,213	2.92%
		Phenol Resin	Proprietary	8.04	3.00	12,520	1.25%
		Melamine Cyanurate	Proprietary	1.34	0.50	2,088	0.21%
		Carbon Black Pigment	1333-86-4	1.34	0.50	2,088	0.21%
Package Weight (mg):				642	% Total:		100

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B2. MATERIAL COMPOSITION (Note 3)

Using CK7000LA Mold Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Substrate	Base Material	Cured Resin	Proprietary	73.4048	28.0000	113,806	11.3806%
		Glass Fabrics	Proprietary	57.6752	22.0000	89,419	8.9419%
		Copper Foil	Proprietary	78.6480	30.0000	121,935	12.1935%
		Diethylene Glycol Monoethyl Ether Acetate	Proprietary	13.1080	5.0000	20,323	2.0323%
		Acetophenone Derivative	Proprietary	13.1080	5.0000	20,323	2.0323%
		Silica Crystalline	14808-60-7	13.1080	5.0000	20,323	2.0323%
		Solvent naptha	Proprietary	13.1080	5.0000	20,323	2.0323%
Solder Ball	External Plating	Sn	7440-31-5	79.1588	95.9500	122,726	12.2726%
		Ag	7440-22-4	3.3000	4.0000	5,116	0.5116%
		Cu	7440-50-8	0.0413	0.0500	64	0.0064%
Die Attach	Adhesive	Silver	7440-22-4	3.4317	75.0000	5,320	0.5320%
		Bismaleimide Resin	Proprietary	0.8007	17.5000	1,241	0.1241%
		Synthetic Resin	Proprietary	0.2288	5.0000	355	0.0355%
		Additive	Proprietary	0.1144	2.5000	177	0.0177%
Die	Circuit	Silicon	7440-21-3	21.4000	100.0000	33,178	3.3178%
Wire	Interconnect	Au	7440-57-5	8.0068	100.0000	12,414	1.2414%
Mold Compound	Encapsulation	Silica	60676-86-0	230.3986	86.5000	357,207	35.7207%
		Non-Brominated Flame Retardant	Proprietary	13.3178	5.0000	20,648	2.0648%
		Epoxy Resin	Proprietary	13.3178	5.0000	20,648	2.0648%
		Phenol Resin	Proprietary	6.6589	2.5000	10,324	1.0324%
		Mixed Siloxanes	Proprietary	1.3318	0.5000	2,065	0.2065%
		Carbon Black Pigment	1333-86-4	1.3318	0.5000	2,065	0.2065%

Package Weight (mg): 644.9992

% Total: 100.0000%

II. DECLARATION OF PACKAGING INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-COVT-R
	Carrier tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-TRAY-R
Others	Moisture Barrier bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-MBBG-R
	Shielding bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-R
	Protective Band	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PROB-R
	Shipping and inner/ pizza box	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-ABOX-R

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

ASSEMBLY Site 5 – Package Qualification Report # 120610 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS are listed in section 1A. Materials from this list may be contained or intentionally added to this product, as it is not considered Pb-Free or RoHS compliant.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BW165-RA
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
Azo colorants	0	0	
Ozone Depleting Substances	0	0	
Polychlorinated Biphenyls (PCBs)	0	0	
Polychlorinated Naphthalenes	0	0	
Radioactive Substances	0	0	
Shortchain Chlorinated Paraffins	0	0	
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	
Tributyl Tin Oxide (TBTO)	0	0	
Formaldehyde	0	0	

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B. MATERIAL COMPOSITION (Note 3)

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Substrate	Base Material	Cured Resin	Proprietary	69.6600	27.9984%	109,816	10.9816%
		Glass Fabrics	Proprietary	54.7400	22.0016%	86,295	8.6295%
		Copper Foil	Proprietary	74.6400	30.0000%	117,667	11.7667%
		Diethylene Glycol Monoethyl Ether Acetate	Proprietary	12.4400	5.0000%	19,611	1.9611%
		Acetophenone Derivative	Proprietary	12.4400	5.0000%	19,611	1.9611%
		Silica Crystalline	14808-60-7	12.4400	5.0000%	19,611	1.9611%
		Solvent naptha	Proprietary	12.4400	5.0000%	19,611	1.9611%
Solder Ball	External Plating	Sn	7440-31-5	79.1600	95.9515%	124,793	12.4793%
		Ag	7440-22-4	3.3000	4.0000%	5,202	0.5202%
		Cu	7440-50-8	0.0400	0.0485%	63	0.0063%
Die Attach	Adhesive	Silver	7440-22-4	5.0500	74.9258%	7,961	0.7961%
		Bismaleimide Resin	Proprietary	1.1800	17.5074%	1,860	0.1860%
		Synthetic Resin	Proprietary	0.3400	5.0445%	536	0.0536%
		Additive	Proprietary	0.1700	2.5223%	268	0.0268%
Die	Circuit	Silicon	7440-21-3	21.4000	100.0000%	33,736	3.3736%
Wire	Interconnect	Copper	7440-50-8	6.8829	100.0000%	10,851	1.0851%
Mold Compound	Encapsulation	Silica	60676-86-0	238.5300	89.0004%	376,033	37.6033%
		Epoxy Resin	Proprietary	18.7600	6.9997%	29,574	2.9574%
		Phenol Resin	Proprietary	8.0400	2.9999%	12,675	1.2675%
		Melamine Cyanurate	Proprietary	1.3400	0.5000%	2,112	0.2112%
		Carbon Black Pigment	1333-86-4	1.3400	0.5000%	2,112	0.2112%
Package Weight (mg):				634.3329	% Total:		100

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B2. MATERIAL COMPOSITION (Note 3)

Using Copper Palladium Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Substrate	Base Material	Cured Resin	Proprietary	69.6600	27.9984%	109804	10.9804%
		Glass Fabrics	Proprietary	54.7400	22.0016%	86286	8.6286%
		Copper Foil	Proprietary	74.6400	30.0000%	117654	11.7654%
		Diethylene Glycol Monoethyl Ether Acetate	Proprietary	12.4400	5.0000%	19609	1.9609%
		Acetophenone Derivative	Proprietary	12.4400	5.0000%	19609	1.9609%
		Silica Crystalline	14808-60-7	12.4400	5.0000%	19609	1.9609%
		Solvent naptha	Proprietary	12.4400	5.0000%	19609	1.9609%
Solder Ball	External Plating	Sn	7440-31-5	79.1600	95.9515%	124779	12.4779%
		Ag	7440-22-4	3.3000	4.0000%	5202	0.5202%
		Cu	7440-50-8	0.0400	0.0485%	63	0.0063%
Die Attach	Adhesive	Silver	7440-22-4	5.0500	74.9258%	7960	0.7960%
		Bismaleimide Resin	Proprietary	1.1800	17.5074%	1860	0.1860%
		Synthetic Resin	Proprietary	0.3400	5.0445%	536	0.0536%
		Additive	Proprietary	0.1700	2.5223%	268	0.0268%
Die	Circuit	Silicon	7440-21-3	21.4000	100.0000%	33733	3.3733%
Wire	Interconnect	Copper	7440-50-8	6.8829	98.9999%	10849	1.0849%
		Palladium	7440-05-3	0.0695	1.0001%	110	0.0110%
Mold Compound	Encapsulation	Silica	60676-86-0	238.5300	89.0004%	375992	37.5992%
		Epoxy Resin	Proprietary	18.7600	6.9997%	29571	2.9571%
		Phenol Resin	Proprietary	8.0400	2.9999%	12673	1.2673%
		Melamine Cyanurate	Proprietary	1.3400	0.5000%	2112	0.2112%
		Carbon Black Pigment	1333-86-4	1.3400	0.5000%	2112	0.2112%
Package Weight (mg):				634.4024	% Total:		100.0000

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

II. DECLARATION OF PACKAGING INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-COVT-R
	Carrier tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-TRAY-R
Others	Moisture Barrier bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-MBBG-R
	Shielding bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-R
	Protective Band	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PROB-R
	Shipping and inner/ pizza box	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-ABOX-R

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

Document History Page

Document Title: 165-BGA 15X17MM PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-04909

Rev.	ECN No.	Orig. of Change	Description of Change
**	398232	GFJ	New document
*A	2521696	HLR	Changed Cypress Logo Added % weight of substance per Homogenous Material and % weight of substance per package on the Material Composition table. Completed the RoHS Substances namely; Lead Cadmium, Mercury, Chromium VI, PBB and PBDE on Declaration of Packaging Indirect Materials table. Modified the Package Qualification Number to 050704.
*B	2612288	VFR Dcon	Added Material Declaration for Site 2. Changed the CAS number of Gold on Assembly Site 1. Changed E-CML to WEB in distribution list.
*C	2712140	HLR	Removed Material Name of Substrate for Assembly Site 2.
*D	2768585	VFR	Added Material Declaration for Site 3.
*E	2781275	MAHA	Added package weight for B2 on assembly site 1. Corrected the CAS number of Silver on Table B1 for assembly site 1. Added Table B2. SnAgCu Using Non-Green Substrate for assembly site
*F	3066344	HLR	Added Assembly Site 4.
*G	3298123	HLR	Sunset Due – No Change
*H	3498639	JARG	Added Material Composition for Assembly Site 4 – B2 using CK7000LA Mold Compound.
*I	3546390	COPI	Added Assembly Site 5 – AUTOLINE RA Copper wire qualification. Reference QTP # 120609.
*J	3603781	EBZ	Added package weight B3 for assembly site 1, and reference QTP #120612. Added material composition table B3 using copper palladium wire for assembly site 1. Added package weight B2 for assembly site 5, and reference QTP #120610. Added material composition table B2 using copper palladium wire for assembly site 5.

Distribution: WEB

Posting: None

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