

PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	SP	Body Size (mil/mm)	300 mil
Package Weight – Site 1	B1: 650.0000 mg B2: 610.0198 mg B3: 648.5799 mg	Package Weight – Site 2	746.9799 mg
Package Weight – Site 3	B1: 650.0000 mg B2: 610.0198 mg B3: 606.5351 mg	Package Weight – Site 4	B1: 634.3493 mg B2: 633.9041 mg

SUMMARY

The 48L-SSOP Pb-Free package is compliant to RoHS. Cypress Ordering Part Number containing an “X” (e.g. CY7C1328G-133AXI, CY2308SXC-1HT) meet the requirements of Directive 2002/95/EC (RoHS).

ASSEMBLY Site 1: Cypress Manufacturing Limited (CML)
Package Qualification Report #s 023606 / 022102 / 063103/125201 (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-SP48-CML
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)

NiPdAu with Standard Molding Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous	PPM	% Weight of Substance per package
Leadframe	Base Material	Cu	7440-95-4	110.0896	94.1500%	169,369	16.9369%
		Si	7440-21-3	1.1693	1.0000%	1,799	0.1799%
		Mg	7739-95-4	0.7600	0.6500%	1,169	0.1169%
		Ni	7440-02-0	3.5079	3.0000%	5,397	0.5397%
		Fe	7439-89-6	0.2339	0.2000%	360	0.0360%
		Zn	7440-66-6	1.1693	1.0000%	1,799	0.1799%
Lead Finish	External Plating	Ni	7440-02-0	0.1875	93.7400%	288	0.0288%
		Pd	7440-05-3	0.0095	4.7500%	15	0.0015%
		Au	7440-57-5	0.0030	1.5200%	5	0.0005%
Die Attach	Adhesive	Ag	7440-22-4	0.3500	77.7800%	538	0.0538%
		Proprietary bismaleimide	Trade Secret	0.0400	8.8800%	61	0.0061%
		Proprietary polymer	Trade Secret	0.0300	6.6700%	46	0.0046%
		Methacrylate	Trade Secret	0.0100	2.2200%	15	0.0015%
		Acrylate ester	Trade Secret	0.0100	2.2200%	15	0.0015%
		Organic peroxide	Trade Secret	0.0100	2.2200%	15	0.0015%
Die	Circuit	Si	7440-21-3	6.2600	100.0000%	9,631	0.9631%
Wire	Interconnect	Au	7440-57-5	2.1700	100.0000%	3,338	0.3338%
Mold Compound	Encapsulation	Solid Epoxy Resin	Trade Secret	41.9192	8.0000%	64,491	6.4491%
		Phenol Resin	Trade Secret	41.9192	8.0000%	64,491	6.4491%
		Antimony Trioxide	1309-64-4	5.2399	1.0000%	8,061	0.8061%
		Carbon Black	1333-86-4	5.2399	1.0000%	8,061	0.8061%
		Fused Silica	60676-86-0	419.1920	80.0000%	644,911	64.4911%
		Crystalline Silica	14808-60-7	10.4798	2.0000%	16,123	1.6123%

Package Weight (mg): **650.0000**

% Total: **100.0000**

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.

B2. MATERIAL COMPOSITION (Note 3)

NiPdAu using Green Molding Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% Weight of Substance per Homogeneous Material	PPM	% Weight of Substance per package
Lead frame	Base Material	Cu	7440-50-8	133.2947	96.2000%	218,509	21.8509%
		Si	7440-21-3	0.9006	0.6500%	1,476	0.1476%
		Mg	7439-95-4	0.2078	0.1500%	341	0.0341%
		Ni	7440-02-0	4.1568	3.0000%	6,814	0.6814%
Lead Finish	External Plating	Ni	7440-02-0	1.3995	96.5200%	2,294	0.2294%
		Pd	7440-05-3	0.0252	1.7400%	41	0.0041%
		Au	7440-57-5	0.0252	1.7400%	41	0.0041%
Die Attach	Adhesive	Ag	7440-22-4	0.2000	80.0000%	328	0.0328%
		Proprietary bismaleimide	Trade Secret	0.0225	9.0000%	37	0.0037%
		Proprietary polymer	Trade Secret	0.0125	5.0000%	20	0.0020%
		Methacrylate	Trade Secret	0.0050	2.0000%	8	0.0008%
		Acrylate ester	Trade Secret	0.0050	2.0000%	8	0.0008%
		Organic peroxide	Trade Secret	0.0050	2.0000%	8	0.0008%
Die	Circuit	Si	7440-21-3	3.3000	100.0000%	5,410	0.5410%
Wire	Interconnect	Au	7440-57-5	2.3700	100.0000%	3,885	0.3885%
Mold Compound	Encapsulation	Silica	60676-86-0	413.0401	89.0000%	677,093	67.7093%
		Phenol Resin	Trade Secret	23.2045	5.0000%	38,039	3.8039%
		Epoxy Resin	Trade Secret	27.8454	6.0000%	45,647	4.5647%

Package Weight (mg): 610.0198

%Total: 100.0000

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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.

B3. MATERIAL COMPOSITION (Note 3)

Using Copper Wire with NiPdAu using Kyocera Molding Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% Weight of Substance per Homogeneous Material	PPM	% Weight of Substance per package
Lead frame	Base Material	Cu	7440-50-8	143.8171	97.4100	221,742	22.1742
		Si	7440-21-3	3.5434	2.4000	5,463	0.5463
		Mg	7439-95-4	0.1033	0.0700	159	0.0159
		Ni	7440-02-0	0.1772	0.1200	273	0.0273
Lead Finish	External Plating	Ni	7440-02-0	1.4911	96.5200	2,299	0.2299
		Pd	7440-05-3	0.0269	1.7400	41	0.0041
		Au	7440-57-5	0.0269	1.7400	41	0.0041
Die Attach	Adhesive	Ag	7440-22-4	0.2131	80.0000	329	0.0329
		Proprietary bismaleimide	Trade Secret	0.0240	9.0000	37	0.0037
		Proprietary polymer	Trade Secret	0.0133	5.0000	21	0.0021
		Methacrylate	Trade Secret	0.0053	2.0000	8	0.0008
		Acrylate ester	Trade Secret	0.0053	2.0000	8	0.0008
		Organic peroxide	Trade Secret	0.0053	2.0000	8	0.0008
Die	Circuit	Si	7440-21-3	3.5163	100.0000	5,422	0.5422
Wire	Interconnect	Cu	7440-50-8	1.1052	100.0000	1,704	0.1704
Mold Compound	Encapsulation	SiO2	60676-86-0	440.1105	89.0000	678,576	67.8576
		Phenol Resin	Trade Secret	24.7253	5.0000	38,122	3.8122
		Epoxy Resin	Trade Secret	28.4341	5.7500	43,841	4.3841
		Carbon Black	1333-86-4	1.2363	0.2500	1,906	0.1906

Package Weight (mg): 648.5799

%Total: 100.0000

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.

II. DECLARATION OF PACKAGING INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tube	Plastic Tube	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-PLTB-R
	End Plug	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-EPLG-R
Tape and Reel	Carrier Tape	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CART-R
Others	Moisture Barrier Bag	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-MBBG-R
	Dessicant	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-DESS-R
	HIC	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-HIC-R
	Bubble Pack	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	CoA-BUBB-R
	Carton Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CRTN-R
	Inner Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-LBL-R
	Shielding Bag	<5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-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: Amkor Technology Philippines (P1/P2)
Package Qualification Report #s 071101 (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-SP48- Amkor Philippines (P1/P2)
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	PPM	% Weight of Substance per package
Leadframe	Base Material	Cu	7440-95-4	224.7444	95.6400%	300,871	30.0871%
		Ni	7440-02-0	7.0027	2.9800%	9,375	0.9375%
		Si	7440-21-3	1.5274	0.6500%	2,045	0.2045%
		Mg	7739-95-4	0.3525	0.1500%	472	0.0472%
		Ag	7440-22-4	1.3629	0.5800%	1,825	0.1825%
Lead Finish	External Plating	Sn	7440-31-5	12.0300	100.0000%	16,105	1.6105%
Die Attach	Adhesive	Resin	Trade Secret	1.3818	21.0000%	1,850	0.1850%
		Ag	7440-22-0	4.6060	70.0000%	6,166	0.6166%
		Metal Oxide	Trade Secret	0.1974	3.0000%	264	0.0264%
		Amine	Trade Secret	0.1974	3.0000%	264	0.0264%
		Gamma Butyrolactone	96-48-0	0.1974	3.0000%	264	0.0264%
Die	Circuit	Si	7440-21-3	23.0600	100.0000%	30,871	3.0871%
Wire	Interconnect	Au	7440-57-5	1.1200	100.0000%	1,499	0.1499%
Mold Compound	Encapsulation	Multi-aromatic Resin	Trade Secret	35.1900	7.5000%	47,110	4.7110%
		SiO2 Filler	60676-86-0	403.5120	86.0000%	540,191	54.0191%
		Carbon Black	1333-86-4	2.3460	0.5000%	3,141	0.3141%
		Epoxy Cresol Novolac	29690-82-2	9.3840	2.0000%	12,563	1.2563%
		Phenol Resin	Trade Secret	18.7680	4.0000%	25,125	2.5125%

Package Weight (mg): 746.9799

% 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)
Tube	Plastic Tube	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-PLTB-R
	End Plug	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-EPLG-R
Tape and Reel	Carrier Tape	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CART-R
Others	Moisture Barrier Bag	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-MBBG-R
	Dessicant	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-DESS-R
	HIC	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-HIC-R
	Bubble Pack	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	CoA-BUBB-R
	Carton Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CRTN-R
	Inner Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-LBL-R
	Shielding Bag	<5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-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 3: Jiangsu Changjiang Electronics Technology (JCET)
Package Qualification Report #s 104810/ 104802, 143702 (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-SP48- JCET
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)

NiPdAu with Standard Molding Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous	PPM	% Weight of Substance per package
Leadframe	Base Material	Cu	7440-95-4	110.0896	94.1500%	169,369	16.9369%
		Si	7440-21-3	1.1693	1.0000%	1,799	0.1799%
		Mg	7739-95-4	0.7600	0.6500%	1,169	0.1169%
		Ni	7440-02-0	3.5079	3.0000%	5,397	0.5397%
		Fe	7439-89-6	0.2339	0.2000%	360	0.0360%
		Zn	7440-66-6	1.1693	1.0000%	1,799	0.1799%
Lead Finish	External Plating	Ni	7440-02-0	0.1875	93.7400%	288	0.0288%
		Pd	7440-05-3	0.0095	4.7500%	15	0.0015%
		Au	7440-57-5	0.0030	1.5200%	5	0.0005%
Die Attach	Adhesive	Ag	7440-22-4	0.3500	77.7800%	538	0.0538%
		Proprietary bismaleimide	Trade Secret	0.0400	8.8800%	61	0.0061%
		Proprietary polymer	Trade Secret	0.0300	6.6700%	46	0.0046%
		Methacrylate	Trade Secret	0.0100	2.2200%	15	0.0015%
		Acrylate ester	Trade Secret	0.0100	2.2200%	15	0.0015%
		Organic peroxide	Trade Secret	0.0100	2.2200%	15	0.0015%
Die	Circuit	Si	7440-21-3	6.2600	100.0000%	9,631	0.9631%
Wire	Interconnect	Au	7440-57-5	2.1700	100.0000%	3,338	0.3338%
Mold Compound	Encapsulation	Solid Epoxy Resin	Trade Secret	41.9192	8.0000%	64,491	6.4491%
		Phenol Resin	Trade Secret	41.9192	8.0000%	64,491	6.4491%
		Antimony Trioxide	1309-64-4	5.2399	1.0000%	8,061	0.8061%
		Carbon Black	1333-86-4	5.2399	1.0000%	8,061	0.8061%
		Fused Silica	60676-86-0	419.1920	80.0000%	644,911	64.4911%
		Crystalline Silica	14808-60-7	10.4798	2.0000%	16,123	1.6123%

Package Weight (mg): 650.0000

% Total: 100.0000

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.

B2. MATERIAL COMPOSITION (Note 3)

NiPdAu using Green Molding Compound

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% Weight of Substance per Homogeneous Material	PPM	% Weight of Substance per package
Lead frame	Base Material	Cu	7440-50-8	133.2947	96.2000%	218,509	21.8509%
		Si	7440-21-3	0.9006	0.6500%	1,476	0.1476%
		Mg	7439-95-4	0.2078	0.1500%	341	0.0341%
		Ni	7440-02-0	4.1568	3.0000%	6,814	0.6814%
Lead Finish	External Plating	Ni	7440-02-0	1.3995	96.5200%	2,294	0.2294%
		Pd	7440-05-3	0.0252	1.7400%	41	0.0041%
		Au	7440-57-5	0.0252	1.7400%	41	0.0041%
Die Attach	Adhesive	Ag	7440-22-4	0.2000	80.0000%	328	0.0328%
		Proprietary bismaleimide	Trade Secret	0.0225	9.0000%	37	0.0037%
		Proprietary polymer	Trade Secret	0.0125	5.0000%	20	0.0020%
		Methacrylate	Trade Secret	0.0050	2.0000%	8	0.0008%
		Acrylate ester	Trade Secret	0.0050	2.0000%	8	0.0008%
		Organic peroxide	Trade Secret	0.0050	2.0000%	8	0.0008%
Die	Circuit	Si	7440-21-3	3.3000	100.0000%	5,410	0.5410%
Wire	Interconnect	Au	7440-57-5	2.3700	100.0000%	3,885	0.3885%
Mold Compound	Encapsulation	Silica	60676-86-0	413.0401	89.0000%	677,093	67.7093%
		Phenol Resin	Trade Secret	23.2045	5.0000%	38,039	3.8039%
		Epoxy Resin	Trade Secret	27.8454	6.0000%	45,647	4.5647%

Package Weight(mg): **610.0198**

%Total: **100.0000**

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

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

B3. MATERIAL COMPOSITION (Note 3)

Using Copper Palladium Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous	PPM	% Weight of Substance per package
Leadframe	Base Material	Nickel	7440-02-0	3.0800	0.0220	5,078	0.5078%
		Silicon	7440-21-3	0.6300	0.0045	1,039	0.1039%
		Magnesium	7439-95-4	0.2100	0.0015	346	0.0346%
		Silver	7440-22-4	3.2200	0.0230	5,309	0.5309%
		Copper	7440-50-8	132.8600	0.9490	219,048	21.9048%
Lead Finish	External Plating	Tin	7440-31-5	1.8850	1.0000	3,108	0.3108%
Die Attach	Adhesive	Silver	7440-22-4	0.2000	0.8000	330	0.0330%
		Proprietary Bismaleimide	Trade Secret	0.0225	0.0900	37	0.0037%
		Proprietary Polymer	Trade Secret	0.0125	0.0500	21	0.0021%
		Methacrylate	Trade Secret	0.0050	0.0200	8	0.0008%
		Acrylate Ester	Trade Secret	0.0050	0.0200	8	0.0008%
		Organic Peroxide	Trade Secret	0.0050	0.0200	8	0.0008%
Die	Circuit	Silicon	7440-21-3	3.3000	1.0000	5,441	0.5441%
Wire	Interconnect	Copper	7440-50-8	1.0808	0.9825	1,782	0.1782%
		Palladium	7440-05-3	0.0193	0.0175	32	0.0032%
Mold Compound	Encapsulation	Epoxy Resin A	Trade Secret	13.8000	0.0300	22,752	2.2752%
		Epoxy Resin B	Trade Secret	13.8000	0.0300	22,752	2.2752%
		Phenol Resin	Trade Secret	23.0000	0.0500	37,920	3.7920%
		Silica(Amorphous)	60676-86-0	408.0200	0.8870	672,706	67.2706%
		Carbon Black	1333-86-4	1.3800	0.0030	2,275	0.2275%

Package Weight (mg): **606.5351**

% 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)
Tube	Plastic Tube	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-PLTB-R
	End Plug	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-EPLG-R
Tape and Reel	Carrier Tape	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CART-R
Others	Moisture Barrier Bag	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-MBBG-R
	Dessicant	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-DESS-R
	HIC	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-HIC-R
	Bubble Pack	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	CoA-BUBB-R
	Carton Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CRTN-R
	Inner Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-LBL-R
	Shielding Bag	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-SBAG-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 4: Orient Semiconductor Electronics Taiwan (OSET)
Package Qualification Report #s 053502, 120410 (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-SP48-OSET
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

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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 Gold wire material

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous	PPM	% Weight of Substance per package
Leadframe	Base Material	Cu	7440-50-8	124.2759	97.2665%	195,911	19.5911%
		Fe	7439-89-6	2.9717	2.3258%	4,685	0.4685%
		P	7723-14-0	0.1938	0.1517%	306	0.0306%
		Zn	7440-66-6	0.1292	0.1011%	204	0.0204%
		Pb	7439-92-1	0.0194	0.0152%	31	0.0031%
		Polyimide	Trade Secret	0.1209	0.0946%	191	0.0191%
		NBR	9003-18-3	0.0202	0.0158%	32	0.0032%
		Bismaleimide	79922-55-7	0.0202	0.0158%	32	0.0032%
Lead Finish	External Plating	Phenol resin	28453-20-5	0.0173	0.0135%	27	0.0027%
		Ni	7440-02-0	1.2920	90.0903%	2,037	0.2037%
		Pd	7440-05-3	0.1292	9.0088%	204	0.0204%
Die Attach	Adhesive	Au	7440-57-5	0.0129	0.9009%	20	0.0020%
		Acrylic resin	Trade Secret	0.0263	8.5000%	41	0.0041%
		Polybutadiene derivative	Trade Secret	0.0170	5.5000%	27	0.0027%
		Butadiene copolymer	Trade Secret	0.0062	2.0000%	10	0.0010%
		Epoxy resin	Trade Secret	0.0170	5.5000%	27	0.0027%
		Acrylate	Trade Secret	0.0077	2.5000%	12	0.0012%
		Peroxide	Trade Secret	0.0031	1.0000%	5	0.0005%
		Additive	Trade Secret	0.0062	2.0000%	10	0.0010%
Die	Circuit	Silver	7440-22-4	0.2255	73.0000%	355	0.0355%
Wire	Interconnect	Si	7440-21-3	12.7009	100.0000%	20,022	2.0022%
Mold Compound	Encapsulation	Au	7440-57-5	0.8342	100.0000%	1,315	0.1315%
		Epoxy Resin(1)	Trade Secret	12.2826	2.5000%	19,362	1.9362%
		Epoxy Resin(2)	Trade Secret	12.2826	2.5000%	19,362	1.9362%
		Phenol Resin	Trade Secret	24.5651	5.0000%	38,725	3.8725%
		Carbon black	1333-86-4	0.9826	0.2000%	1,549	0.1549%
		Silica	60676-86-0	431.3635	87.8000%	680,010	68.0010%
Others	Trade Secret	9.8261	2.0000%	15,490	1.5490%		

Package Weight (mg): 634.3493

% 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.

B2. MATERIAL COMPOSITION (Note 3)

Using Copper wire material

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous	PPM	% Weight of Substance per package
Leadframe	Base Material	Cu	7440-50-8	124.2759	97.2665%	196,048	19.6048%
		Fe	7439-89-6	2.9717	2.3258%	4,688	0.4688%
		P	7723-14-0	0.1938	0.1517%	306	0.0306%
		Zn	7440-66-6	0.1292	0.1011%	204	0.0204%
		Pb	7439-92-1	0.0194	0.0152%	31	0.0031%
		Polyimide	Trade Secret	0.1209	0.0946%	191	0.0191%
		NBR	9003-18-3	0.0202	0.0158%	32	0.0032%
		Bismaleimide	79922-55-7	0.0202	0.0158%	32	0.0032%
Lead Finish	External Plating	Phenol resin	28453-20-5	0.0173	0.0135%	27	0.0027%
		Ni	7440-02-0	1.2920	90.0903%	2,038	0.2038%
Die Attach	Adhesive	Pd	7440-05-3	0.1292	9.0088%	204	0.0204%
		Au	7440-57-5	0.0129	0.9009%	20	0.0020%
		Silver	7440-22-4	0.2287	74.0000%	361	0.0361%
		Epoxy resin A	9003-36-5	0.0124	4.0000%	19	0.0019%
		Epoxy resin B	Trade Secret	0.0185	6.0000%	29	0.0029%
		Diluent A	Trade Secret	0.0124	4.0000%	19	0.0019%
		Diluent B	Trade Secret	0.0185	6.0000%	29	0.0029%
		Phenolic Hardener	Trade Secret	0.0155	5.0000%	24	0.0024%
Die	Circuit	Dicyandiamide	461-58-5	0.0015	0.5000%	2	0.0002%
		Organic peroxide	Trade Secret	0.0015	0.5000%	2	0.0002%
Wire	Interconnect	Si	7440-21-3	12.7009	100.0000%	20,036	2.0036%
Mold Compound	Encapsulation	Copper	7440-50-8	0.3890	100.0000%	614	0.0614%
		Silica Fused	60676-86-0	363.5639	74.0000%	573,531	57.3531%
		Epoxy, Cresol Novolac	29690-82-2	19.6521	4.0000%	31,002	3.1002%
		Phenol resin	Trade Secret	29.4782	6.0000%	46,503	4.6503%
		Metal Hydroxide	Trade Secret	19.6521	4.0000%	31,002	3.1002%
		Carbon Black	1333-86-4	29.4782	6.0000%	46,503	4.6503%
		Epoxy resin A	Trade Secret	24.5651	5.0000%	38,752	3.8752%
		Silica Fused	7631-86-9	2.4565	0.5000%	3,875	0.3875%
		Silica, crystalline	14808-60-7	2.4565	0.5000%	3,875	0.3875%

Package Weight (mg): 633.9041

% 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)
Tube	Plastic Tube	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-PLTB-R
	End Plug	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-EPLG-R
Tape and Reel	Carrier Tape	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CART-R
Others	Moisture Barrier Bag	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-MBBG-R
	Dessicant	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-DESS-R
	HIC	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-HIC-R
	Bubble Pack	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	CoA-BUBB-R
	Carton Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-CRTN-R
	Inner Label	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	CoA-LBL-R
	Shielding Bag	<5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-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: 48L-SSOP PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-03011

Rev.	ECN No.	Orig. of Change	Description of Change
**	385294	EML	New document
*A	1521764	MRB	<ol style="list-style-type: none"> Updated Cypress Logo Added on the material composition the percent weight per homogeneous material and weight of substance Updated and added Lead, Cr+VI, PBB and PBDE on the Declaration of Packaging/Indirect Materials. Added note 4: the package were based on Engineering calculation and performed on a package family basis.
*B	2147487	MAHA DCon	Added the following: <ol style="list-style-type: none"> CoA-SP48-R1 B2: 610 mg QTP Reference 063103 B2. NiPdAu using Green Molding Compound Changed the following in Table B1: <ol style="list-style-type: none"> CAS number of Antimony trioxide CAS number of Fused Silica CAS number of Crystalline Silica CAS number of Carbon black Replaced CML with WEB in distribution list.
*C	2702846	HLR	Changed the % weight of substance of NiPdAu.
*D	2771951	MAHA	Added data for assembly site 2.
*E	2902139	MAHA	Revised the lead frame data on Table B2 for assembly site 1. Recalculated PPM and % Weight of Substance per package data on Table B2 for assembly site 1.
*F	3055777	MAHA	Added the CAS number of Sn on assembly site 2.
*G	3218994	REYD	Added Assembly Site 3 – JCET.
*H	3289531	MAHA	Added Assembly Site 4.
*I	3616106	HLR	Updated the material composition of Assembly Sites 1 to 3 to reflect 4 decimal places on values.
*J	3645909	UDR	Added B2 on Site 4 with reference QTP # 120410.
*K	4075211	YUM	Added Assembly Site Name in the Assembly heading in site 1, 2, 3 and 4. Changed Assembly code to Assembly Site Name in site 1, 2, 3 and 4.

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Document Number: 001-03011

Rev.	ECN No.	Orig. of Change	Description of Change
*L	4081278	UDR/YUM	Added B3 on Package Weight – Site 1. Added QTP # 125201 on Assembly Site 1. Added B3 on Assembly Site 1 Material Composition.
*M	4498384	REYD	Added B3 in Package Weight and QTP# 143702 under Site 3. Updated Material Composition Table under Assembly Site 3-B3.
*N	4800162	HLR	Sunset Due – No Change.
*O	5320102	HLR MQJ	Changed Cypress Logo. Changed the substances with “----- “ and Proprietary to “Trade Secret”. Removed Distribution: WEB and Posting: None in the document history page.

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