

PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	LH	Body Size (mil/mm)	5X6X0.8mm
Package Weight – Site 1	72.2028 mg	Package Weight – Site 2	69.9850 mg
*** Package Weight – Site 3	71.5215 mg		

SUMMARY

The 8L DFN Pb-Free package is qualified at two assembly sites. Packages from different assembly sites may have different material composition. Cypress Ordering Part Numbers containing an "X" (e.g. CY7C1328G-133AXI, CY2308SXC-1HT) meet the Directive 2002/95/EC (RoHS) requirement.

ASSEMBLY Site 1: Amkor Technology Philippines (P3/P4)
Package Qualification Report #s 093102 (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-LH08- Amkor Philippines (P3/P4)
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 Naphthalenes	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" or a natural impurity. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor PMDD's are calculated using MSDS, Material Analysis Reports and Cypress Assembly site 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
Lead Frame	Base Material	Cu	7440-50-8	35.1410	97.4435%	486,699	48.6699%
		Fe	7439-89-6	0.8470	2.3487%	11,731	1.1731%
		Zn	7440-66-6	0.0450	0.1248%	623	0.0623%
		P	7723-14-0	0.0300	0.0832%	415	0.0415%
Lead Finish	External Plating	Ni	7440-02-0	0.0678	79.9528%	939	0.0939%
		Pd	7440-05-3	0.0140	16.5094%	194	0.0194%
		Au-Ag	7440-57-5 7440-22-4	0.0030	3.5377%	42	0.0042%
Die Attach	Adhesive	Ag	7440-22-4	1.1250	80.0142%	15,581	1.5581%
		Acrylates	Proprietary	0.1830	13.0156%	2,535	0.2535%
		Bismaleimide	Proprietary	0.0420	2.9872%	582	0.0582%
		Ester	Proprietary	0.0420	2.9872%	582	0.0582%
		Polymer	Proprietary	0.0140	0.9957%	194	0.0194%
Die	Circuit	Si	7440-21-3	7.8620	100.0000%	108,888	10.8888%
Wire	Interconnect	Au	7440-57-5	0.0930	98.9362%	1,288	0.1288%
		Pd	7440-05-3	0.0010	1.0638%	14	0.0014%
Mold Compound	Encapsulation	Solid Epoxy Resin	Proprietary	3.070	11.5011%	42,519	4.2519%
		SiO ₂	60676-86-0	23.6230	88.4989%	327,174	32.7174%

Package Weight (mg): **72.2028**

% 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
	Dessicant	< 10.0	< 2.0	< 2.0	< 1.0	< 3.0	< 3.0	CoA-DESS-R
	Bubble Pack	< 2.0	< 2.0	< 2.0	< 2.0	< 100.0	< 90.0	CoA-BUBP-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: Advanced Semiconductor Engineering Taiwan (ASET)
Package Qualification Report #s 114903 (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-LH08-ASET
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 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" or a natural impurity. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor PMDD's are calculated using MSDS, Material Analysis Reports and Cypress Assembly site 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
Lead Frame	Base material	Copper	7440-50-8	36.7794	97.3000	525,533	52.5533
		Iron	7439-89-6	0.9261	2.4500	13,233	1.3233
		Zinc	7440-66-6	0.0605	0.1600	864	0.0864
		Phosphorus	7723-14-0	0.0340	0.0900	486	0.0486
Lead Finish	External Plating	Nickel	7440-02-0	0.4880	94.3880	6,973	0.6973
		Palladium	7440-05-3	0.0228	4.4120	326	0.0326
		Gold	7440-57-5	0.0062	1.2000	89	0.0089
Die Attach	Adhesive	Epoxy Resin	64425-84-4	0.1488	12.0000	2,126	0.2126
		Phenol Resin	-----	0.1488	12.0000	2,126	0.2126
		SiO2 Filler	-----	0.0620	5.0000	886	0.0886
		Acrylic Copolymer	-----	0.8804	71.0000	12,580	1.2580
Die	Circuit	Silicon	7440-21-3	4.8480	100.0000	69,272	6.9272
Wire	Interconnect	Copper	7440-50-8	0.0400	100.0000	570	0.0570
Mold Compound	Encapsulation	Epoxy Resin A	-----	1.1493	4.5000	16,422	1.6422
		Epoxy Resin B	-----	0.7662	3.0000	10,948	1.0948
		Phenol Resin	-----	1.6856	6.6000	24,086	2.4086
		Carbon Black	1333-86-4	0.1277	0.5000	1,825	0.1825
		Silica Fused	60676-86-0	21.8112	85.4000	311,655	31.1655
Package Weight (mg):				69.9850	% 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
	Dessicant	< 10.0	< 2.0	< 2.0	< 1.0	< 3.0	< 3.0	CoA-DESS-R
	Bubble Pack	< 2.0	< 2.0	< 2.0	< 2.0	< 100.0	< 90.0	CoA-BUBP-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: UTAC (UTL Bangkok)**
Package Qualification Report #s 140503 (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-LH08- UTL Bangkok
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 Naphthalenes	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.

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
Lead Frame	Base material	Cu	7440-50-8	30.2700	99.2800	426309	42.6900
		Cr	7440-47-3	0.0760	0.2500	1073	0.1100
		Sn	7440-31-5	0.0760	0.2500	1073	0.1100
		Zn	7440-66-6	0.0670	0.2200	944	0.0900
Internal Plating	Wire plating	Ag	7440-22-4	0.6215	100.00	8761	0.8800
Lead Finish	External Plating	SN	7440-22-4	2.2970	100	32,379	2.0419
Die Attach	Adhesive	Ag	7440-22-4	1.0260	81.5000	14464	1.7700
		Octahydro-4,7methano1H-indenediyl	42594-17-2	0.0760	6.0000	1065	0.1100
		Exo-1,7,7 trimethylbicyclo	7534-94-3	0.0760	6.0000	1065	0.1100
		Isobornyl acrylate	5888-33-5	0.0760	6.0000	1065	0.1100
		Bis (alpha.alpha Dimett	80-43-3	0.0060	0.5000	89	0.0100
Die	Circuit	Silicon	7440-21-3	3.7467	100.00	34028	5.2844
Wire	Interconnect	Copper	7440-50-8	0.0400	98.2500	12506	0.0564
		Pd	7440-05-3	0.0200	1.7500	223	0.0200
Mold Compound	Encapsulation	Silica Fused	60676-86-0	30.2370	90.5000	425339	42.6473
		Epoxy Resin	Trade Secret	1.3904	4.7000	19600	1.9600
		Phenol Resin	Trade Secret	1.3904	4.7000	19600	1.9600
		Carbon Black	1333-86-4	0.0295	0.1000	417	0.0400
Package Weight (mg):				71.5215	% 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
	Dessicant	< 10.0	< 2.0	< 2.0	< 1.0	< 3.0	< 3.0	CoA-DESS-R
	Bubble Pack	< 2.0	< 2.0	< 2.0	< 2.0	< 100.0	< 90.0	CoA-BUBP-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: 8L DFN PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-63438

Rev.	ECN No.	Orig. of Change	Description of Change
**	3002189	MAHA/ JVP	New document
*A	3321914	MAHA	Expressed the data for substance weight, % weight per homogeneous material, and % weight per package in four decimal places. Deleted the information for tubes from Table II. DECLARATION OF PACKAGING INDIRECT MATERIALS.
*B	3488869	VFR	Added PMDD for Site 2 – ASE (G) Copper wire qual. Reference QTP # 114903.
*C	3657884	JARG	Updated the material composition table on Assembly Site 1 to reflect 4 decimal places on values.
*D	4055135	YUM	Added assembly site name in the assembly heading in site 1 and 2. Changed assembly code to assembly site name in the in site 1 and 2.
*E	4365867	MLA	Added assembly site 3, UTAC, Thailand.

Distribution: WEB

Posting: None

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