PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	ZW	**Body Size (mil/mm)**	400 mils
Package Weight – Site 1	B1 : 376.4401 mg B2 : 496.4000 mg B3 : 376.2535 mg B4 : 495.8663 mg	**Package Weight – Site 2**	N/A

SUMMARY

The 32L-TSOPII 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: Orient Semiconductor Electronics (OSET)
Package Qualification Report #s 043102, 093602, 060901, 094001, 120406 (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-ZW32-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

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.
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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 Pure Sn Leadfinish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Copper	7440-50-8	88.4338	91.0000%	234,921	23.4921%
		Iron	7439-89-6	2.5267	2.6000%	6,712	0.6712%
		Silicon	7440-21-3	1.1662	1.2000%	3,098	0.3098%
		Phosphorous	7723-14-0	0.0972	0.1000%	258	0.0258%
		Zirconium	7440-67-7	0.1944	0.2000%	516	0.0516%
		Magnesium	7439-95-4	0.2915	0.3000%	774	0.0774%
		Silver	7440-22-4	0.3887	0.4000%	1,033	0.1033%
		Nickel	7440-02-0	4.0816	4.2000%	10,843	1.0843%
Lead Finish	External Plating	Tin	7440-31-5	4.0000	100.0000%	10,626	1.0626%
Die Attach	Adhesive	Epoxy resin	----------	0.0500	15.1500%	133	0.0133%
		Metal	----------	0.0200	6.0600%	53	0.0053%
		Silver	7440-22-4	0.2600	78.7900%	691	0.0691%
Die	Circuit	Si	7440-21-3	9.8600	100.0000%	26,193	2.6193%
Wire	Interconnect	Au	7440-57-5	0.3500	100.0000%	930	0.0930%
Mold Compound	Encapsulation	Epoxy resin1	----------	7.9416	3.0000%	21,097	2.1097%
		Epoxy resin2	----------	3.9708	1.5000%	10,548	1.0548%
		Phenol resin1	----------	3.9708	1.5000%	10,548	1.0548%
		Phenol resin2	----------	3.9708	1.5000%	10,548	1.0548%
		Carbon black	1333-86-4	0.5294	0.2000%	1,406	0.1406%
		Silica	7631-86-9	239.0422	90.3000%	635,007	63.5007%
		Others	----------	5.2944	2.0000%	14,064	1.4064%

Package Weight (mg): 376.4401 **% 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 NiPdAu Leadfinish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Copper	7440-50-8	105.9991	96.9800%	213,536	21.3536%
		Nickel	7440-02-0	3.3009	3.0200%	6,650	0.6650%
Lead Finish	External Plating	Nickel	7440-02-0	0.0971	97.1100%	196	0.0196%
		Palladium	7440-05-3	0.0019	1.9300%	4	0.0004%
		Gold	7440-57-5	0.0010	0.9600%	2	0.0002%
Die Attach	Adhesive	Acrylic Resin	Trade Secret	0.0856	14.2700%	172	0.0172%
		Polybutadiene derivative	Trade Secret	0.0327	5.4500%	66	0.0066%
		Butadiene copolymer	Trade Secret	0.0059	0.9900%	12	0.0012%
		Epoxy Resin	Trade Secret	0.0119	1.9800%	24	0.0024%
		Acrylate	Trade Secret	0.0238	3.9600%	48	0.0048%
		Peroxide	Trade Secret	0.0030	0.5000%	6	0.0006%
		Additive	Trade Secret	0.0089	1.4900%	18	0.0018%
		Silver (Metal powder)	7440-22-4	0.4282	71.3600%	863	0.0863%
Die	Circuit	Si	7440-21-3	9.5000	100.0000%	19,138	1.9138%
Wire	Interconnect	Gold	7440-57-5	1.0000	100.0000%	2,015	0.2015%
Mold Compound	Encapsulation	Epoxy resin	Trade Secret	16.9155	4.5000%	34,076	3.4076%
		Phenol resin	Trade Secret	14.9984	3.9900%	30,214	3.0214%
		Aromatic Phosphate	Trade Secret	4.8867	1.3000%	9,844	0.9844%
		Carbon Black	1333-86-4	0.7894	0.2100%	1,590	0.1590%
		Silica	60676-86-0	338.3100	90.0000%	681,527	68.1527%

Package Weight (mg): 496.4000 **% 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.

B3. MATERIAL COMPOSITION (Note 3)
Using Copper wire w/ Pure Sn Lead finish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Copper	7440-50-8	88.4338	91.0000%	235,038	23.5038%
		Iron	7439-89-6	2.5267	2.6000%	6,715	0.6715%
		Silicon	7440-21-3	1.1662	1.2000%	3,100	0.3100%
		Phosphorous	7723-14-0	0.0972	0.1000%	258	0.0258%
		Zirconium	7440-67-7	0.1944	0.2000%	517	0.0517%
		Magnesium	7439-95-4	0.2915	0.3000%	775	0.0775%
		Silver	7440-22-4	0.3887	0.4000%	1,033	0.1033%
		Nickel	7440-02-0	4.0816	4.2000%	10,848	1.0848%
Lead Finish	External Plating	Tin	7440-31-5	4.0000	100.0000%	10,631	1.0631%
Die Attach	Adhesive	Silver	7440-22-4	0.2442	74.0000%	649	0.0649%
		Epoxy resin A	9003-36-5	0.0132	4.0000%	35	0.0035%
		Epoxy resin B	----------	0.0198	6.0000%	53	0.0053%
		Dilueut A	----------	0.0132	4.0000%	35	0.0035%
		Dilueut B	----------	0.0198	6.0000%	53	0.0053%
		Phenolic Hardener	----------	0.0165	5.0000%	44	0.0044%
		Dicyandiamide	461-58-5	0.0017	0.5000%	4	0.0004%
		Organic peroxide	----------	0.0017	0.5000%	4	0.0004%
Die	Circuit	Si	7440-21-3	9.8600	100.0000%	26,206	2.6206%
Wire	Interconnect	Copper	7440-50-8	0.1632	100.0000%	434	0.0434%
Mold Compound	Encapsulation	Epoxy resin A	----------	13.2360	5.0000%	35,178	3.5178%
		Epoxy,Cresol Novolac	29690-82-2	13.2360	5.0000%	35,178	3.5178%
		Phenol resin	----------	13.2360	5.0000%	35,178	3.5178%
		Metal Hydroxide	----------	13.2360	5.0000%	35,178	3.5178%
		Carbon Black	1333-86-4	0.7942	0.3000%	2,111	0.2111%
		Silica Fused	60676-86-0	183.7157	69.4000%	488,277	48.8277%
		Silica Fused	7631-86-9	26.4720	10.0000%	70,357	7.0357%
		Silica,crystalline	14808-60-7	0.7942	0.3000%	2,111	0.2111%

Package Weight (mg): 376.2535 **% 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.

B4. MATERIAL COMPOSITION (Note 3)
Using Copper wire w/ NiPdAu Lead finish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Copper	7440-50-8	105.9991	96.9800%	213,766	21.3766%
		Nickel	7440-02-0	3.3009	3.0200%	6,657	0.6657%
Lead Finish	External Plating	Nickel	7440-02-0	0.0971	97.1100%	196	0.0196%
		Palladium	7440-05-3	0.0019	1.9300%	4	0.0004%
		Gold	7440-57-5	0.0010	0.9600%	2	0.0002%
Die Attach	Adhesive	Silver	7440-22-4	0.4440	74.0000%	895	0.0895%
		Epoxy resin A	9003-36-5	0.0240	4.0000%	48	0.0048%
		Epoxy resin B	----------	0.0360	6.0000%	73	0.0073%
		Dilueut A	----------	0.0240	4.0000%	48	0.0048%
		Dilueut B	----------	0.0360	6.0000%	73	0.0073%
		Phenolic Hardener	----------	0.0300	5.0000%	61	0.0061%
		Dicyandiamide	461-58-5	0.0030	0.5000%	6	0.0006%
		Organic peroxide	----------	0.0030	0.5000%	6	0.0006%
Die	Circuit	Si	7440-21-3	9.5000	100.0000%	19,159	1.9159%
Wire	Interconnect	Copper	7440-50-8	0.4663	100.0000%	940	0.0940%
Mold Compound	Encapsulation	Epoxy resin A	----------	18.7950	5.0000%	37,903	3.7903%
		Epoxy,Cresol Novolac	29690-82-2	18.7950	5.0000%	37,903	3.7903%
		Phenol resin	----------	18.7950	5.0000%	37,903	3.7903%
		Metal Hydroxide	----------	18.7950	5.0000%	37,903	3.7903%
		Carbon Black	1333-86-4	1.1277	0.3000%	2,274	0.2274%
		Silica Fused	60676-86-0	260.8746	69.4000%	526,099	52.6099%
		Silica Fused	7631-86-9	37.5900	10.0000%	75,807	7.5807%
		Silica,crystalline	14808-60-7	1.1277	0.3000%	2,274	0.2274%

Package Weight (mg): 495.8663 **% 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
	Desiccant	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-DESS-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: 32L-TSOP II PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-04256

Rev.	ECN No.	Orig. of Change	Description of Change
**	388679	EML	New document
*A	436522	VFR	Added PMDD for OSET's NiPdAu lead finish
*B	2612843	MAHA	Updated Cypress logo. Added Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data. Added % weight of substance per Homogeneous material. Updated and added Lead, Cr+VI, PBB and PBDE on the Declaration of Packaging/Indirect Materials table. Changed CML to WEB in distribution list.
*C	2812934	NKZ	Added reference QTP 093602 in Assembly 1.
*D	3005418	NKZ	Added reference QTP 094001 in Assembly 2.
*E	3210380	HLR	Deleted Tube information on Declaration of Packaging Materials for Assembly Site 1 and 2.
*F	3588997	HLR	Updated the material composition table to reflect 4 decimal places on values. Removed Assembly Site 2 to combine OSET's material composition for Pure Sn and NiPdAu Lead finish to one Assembly Location only (Assembly Site 1 – B1 and B2).
*G	3645742	UDR	Added B3 and B4 on Site 1 with reference QTP # 120406.
*H	4032311	YUM	Added Assembly site name in the Assembly heading. Changed Assembly code to Assembly Site Name.

Distribution: WEB

Posting: None

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