PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	SP	**Body Size (mil/mm)**	209 mil
Package Weight – Site 1	B1: 172.8700 mg B2: 160.0368 mg B3: 169.2389 mg	**Package Weight – Site 2**	B1:166.0000 mg B2:161.0140 mg
Package Weight – Site 3	B1: 159.0300 mg B2: 158.3682 mg		

SUMMARY

The 20L-SSOP 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-133A**X**I, CY2308S**X**C-1HT) meet the Directive 2002/95/EC (RoHS) requirement.

ASSEMBLY Site 1: Orient Semiconductor Electronics Taiwan (OSET) Package Qualification Report #s 030604, 043102, 042702, 053005, 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.

Pure Sn Lead Finish

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-SP20-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.
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.

NiPdAu Lead Finish

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-SP20-Orient Semiconductor Electronics (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

B1. MATERIAL COMPOSITION
Pure Tin Lead Finish (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
Lead frame	Base Material	Copper	7440-50-8	36.1500	95.9904%	209,117	20.9117%
		Nickel	7440-02-0	1.1300	3.0005%	6,537	0.6537%
		Magnesium	7439-95-4	0.0800	0.2124%	463	0.0463%
		Silicon	7440-21-3	0.3000	0.7966%	1,735	0.1735%
Lead Finish	External Plating	Sn	7440-31-5	3.3200	100.0000%	19,205	1.9205%
Die Attach	Adhesive	Epoxy resin	Proprietary	0.0600	14.2857%	347	0.0347%
		Metal	Proprietary	0.0200	4.7619%	116	0.0116%
		Silver	7440-22-4	0.3400	80.9524%	1,967	0.1967%
Die	Circuit	Si	7440-21-3	12.9700	100.0000%	75,027	7.5027%
Wire	Interconnect	Au	7440-57-5	0.6800	100.0000%	3,934	0.3934%
Mold Compound	Encapsulation	Epoxy resin1	Proprietary	2.9500	2.5038%	17,065	1.7065%
		Epoxy resin2	Proprietary	2.3600	2.0031%	13,652	1.3652%
		Phenol resin	Proprietary	2.9500	2.5038%	17,065	1.7065%
		Aromatic phosphate	Proprietary	1.7700	1.5023%	10,239	1.0239%
		Silica	60676-86-0	106.3700	90.2818%	615,318	61.5318%
		Carbon black	1333-86-4	0.2400	0.2037%	1,388	0.1388%
		Others	Proprietary	1.1800	1.0015%	6,826	0.6826%

Package Weight (mg): 172.8700 **% 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" 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.

B2. MATERIAL COMPOSITION
NiPdAu Lead Finish (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
Lead frame	Base Material	Cu	7440-50-8	36.2400	97.2700%	226,448	22.6448%
		Fe	7439-89-6	0.8700	2.3300%	5,436	0.5436%
		P	7723-14-0	0.0600	0.1500%	375	0.0375%
		Zn	7440-66-6	0.0400	0.1000%	250	0.0250%
		Pb	7439-92-1	0.0100	0.0200%	62	0.0062%
		Polyimide	----------	0.0400	0.0900%	250	0.0250%
		NBR	9003-18-3	0.0100	0.0200%	62	0.0062%
		Bismaleimide	79922-55-7	0.0100	0.0200%	62	0.0062%
		Phenol resin	28453-20-5	0.0100	0.0100%	62	0.0062%
Lead Finish	External Plating	Ni	7440-02-0	0.3800	89.6649%	2,374	0.2374%
		Pd	7440-05-3	0.0400	9.4384%	250	0.0250%
		Au	7440-57-5	0.0038	0.8966%	24	0.0024%
Die Attach	Adhesive	Acrylic resin	----------	0.0200	6.1920%	125	0.0125%
		Polybutadiene derivative	----------	0.0200	6.1920%	125	0.0125%
		Butadiene copolymer	----------	0.0100	3.0960%	62	0.0062%
		Epoxy resin	----------	0.0100	3.0960%	62	0.0062%
		Acrylate	----------	0.0100	3.0960%	62	0.0062%
		Peroxide	----------	0.0030	0.9288%	19	0.0019%
		Additive	----------	0.0100	3.0960%	62	0.0062%
		Silver	7440-22-4	0.2400	74.3034%	1,500	0.1500%
Die	Circuit	Silicon	7440-21-3	7.3800	100.0000%	46,114	4.6114%
Wire	Interconnect	Gold	7440-57-5	0.3700	100.0000%	2,312	0.2312%
Mold Compound	Encapsulation	Silica Fused	60676-86-0	103.8500	90.8972%	648,913	64.8913%
		Epoxy Resin(1)	158117-90-9	4.0000	3.5011%	24,994	2.4994%
		Epoxy Resin(2)	85954-11-6	2.2900	2.0044%	14,309	1.4309%
		Phenol Resin	26834-02-6	4.0000	3.5011%	24,994	2.4994%
		Carbon black	1333-86-4	0.1100	0.0963%	687	0.0687%

Package Weight (mg): 160.0368 **% 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" 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.

B3. MATERIAL COMPOSITION
Copper Wire and NiPdAu Lead Finish (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
Lead frame	Base Material	Cu	7440-50-8	33.4811	97.2656%	197,833	19.7833%
		Fe	7439-89-6	0.8169	2.3731%	4,827	0.4827%
		P	7723-14-0	0.0287	0.0833%	170	0.0170%
		Zn	7440-66-6	0.0435	0.1264%	257	0.0257%
		Pb	7439-92-1	0.0035	0.0102%	21	0.0021%
		Polyimide	----------	0.0313	0.0909%	185	0.0185%
		NBR	9003-18-3	0.0069	0.0200%	41	0.0041%
		Bismaleimide	79922-55-7	0.0070	0.0203%	41	0.0041%
		Phenol resin	28453-20-5	0.0035	0.0102%	21	0.0021%
Lead Finish	External Plating	Ni	7440-02-0	0.3080	90.4092%	1,820	0.1820%
		Pd	7440-05-3	0.0278	8.1612%	164	0.0164%
		Au	7440-57-5	0.0049	1.4296%	29	0.0029%
Die Attach	Adhesive	Silver	7440-22-4	0.0672	74.0000%	397	0.0397%
		Epoxy resin A	9003-36-5	0.0036	4.0000%	21	0.0021%
		Epoxy resin B	----------	0.0055	6.0000%	32	0.0032%
		Dilute A	----------	0.0036	4.0000%	21	0.0021%
		Dilute B	----------	0.0055	6.0000%	32	0.0032%
		Hardener	----------	0.0045	5.0000%	27	0.0027%
		Dicyandiamide	461-58-5	0.0005	0.5000%	3	0.0003%
		Organic peroxide	----------	0.0005	0.5000%	3	0.0003%
Die	Circuit	Silicon	7440-21-3	1.9757	100.0000%	11,674	1.1674%
Wire	Interconnect	Copper	7440-50-8	0.1849	100.0000%	1,093	0.1093%
Mold Compound	Encapsulation	Epoxy Resin A	----------	6.6112	5.0000%	39,064	3.9064%
		Epoxy , Cresol Novolac	29690-82-2	6.6112	5.0000%	39,064	3.9064%
		Phenol resin	----------	6.6112	5.0000%	39,064	3.9064%
		Silica , Crystalline, Quarts	14808-60-7	0.6509	0.4923%	3,846	0.3846%
		Silica Fused	60676-86-0	101.0326	76.4100%	596,983	59.6983%
		Carbon black	1333-86-4	0.3967	0.3000%	2,344	0.2344%
		Metal Hydroxide	----------	10.3105	7.7977%	60,923	6.0923%

Package Weight (mg): 169.2389 **% 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" 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.

ASSEMBLY Site 2: Amkor Technology Philippines
Package Qualification Report # 040606, 072108 (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.

Pure Sn Lead Finish

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-SP20-Amkor Philippines
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" 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.

NiPdAu Lead Finish

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-SP20-Amkor Philippines
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

B1. MATERIAL COMPOSITION (Note 3)
Pure Sn Lead finish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Lead frame	Base Material	Cu	7440-50-8	46.8400	95.4360%	282,169	28.2200%
		Fe	7439-89-6	1.1300	2.3024%	6,807	0.6800%
		P	7723-14-0	0.0100	0.0204%	60	0.0100%
		Zn	1314-13-2	0.0600	0.1222%	361	0.0400%
		Ag	7440-22-4	1.0400	2.1190%	6,265	0.6300%
Lead Finish	External Plating	Sn	7440-31-5	2.6600	100.0000%	16,024	1.6000%
Die Attach	Adhesive	Resin	----------	0.5800	21.0145%	3,494	0.3500%
		Ag	7440-22-4	1.9400	70.2899%	11,687	1.1700%
		Metal oxide	----------	0.0800	2.8986%	482	0.0500%
		Amine	----------	0.0800	2.8986%	482	0.0500%
		Gamma Butyrolactone	----------	0.0800	2.8986%	482	0.0500%
Die	Circuit	Si	7440-21-3	13.3400	100.0000%	80,361	8.0400%
Wire	Interconnect	Au	7440-57-5	0.4000	100.0000%	2,410	0.2400%
Mold Compound	Encapsulation	Multi-aromatic Resin	Trade secret	7.3300	7.4980%	44,157	4.4200%
		SiO_2	60676-86-0	84.0700	85.9963%	506,446	50.6400%
		Carbon Black	1333-86-4	0.4900	0.5012%	2,952	0.3000%
		Epoxy, Cresol Novolac	29690-82-2	1.9600	2.0049%	11,807	1.1800%
		Phenol Resin	Trade secret	3.9100	3.9996%	23,554	2.3600%

Package Weight (mg): 166.0000 **% 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" 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.

B2. MATERIAL COMPOSITION (Note 3)
NiPdAu Lead finish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Lead frame	Base Material	Cu	7440-50-8	46.0000	97.4989%	285,689	28.5689%
		Fe	7439-89-6	1.1100	2.3527%	6,894	0.6894%
		P	7723-14-0	0.0100	0.0212%	62	0.0062%
		Zn	7440-66-6	0.0600	0.1272%	373	0.0373%
Frame Plating		Ni	7440-02-0	0.8600	97.2851%	5,341	0.5341%
		Pd	7440-05-3	0.0200	2.2624%	124	0.0124%
		Au	7440-57-5	0.0040	0.4525%	25	0.0025%
Lead Finish	External Plating	Ni	7440-02-0	0.3600	97.2973%	2,236	0.2236%
		Pd	7440-05-3	0.0080	2.1622%	50	0.0050%
		Au	7440-57-5	0.0020	0.5405%	12	0.0012%
Die Attach	Adhesive	Resin	Trade Secret	0.4000	21.0526%	2,484	0.2484%
		Ag	7440-22-4	1.3200	69.4737%	8,198	0.8198%
		Metal Oxide	Trade Secret	0.0600	3.1579%	373	0.0373%
		Amine	Trade Secret	0.0600	3.1579%	373	0.0373%
		Gamma Butyrolactone	Trade Secret	0.0600	3.1579%	373	0.0373%
Die	Circuit	Silicon	7440-21-3	5.4700	100.0000%	33,972	3.3972%
Wire	Interconnect	Au	7440-57-5	0.4000	99.9900%	2,484	0.2484%
Mold Compound	Encapsulation	Multi-aromatic Resin	Trade Secret	7.9000	7.5374%	49,064	4.9064%
		SiO2 Filler	60676-86-0	90.1000	85.9651%	559,579	55.9579%
		Carbon Black	1333-86-4	0.5200	0.4961%	3,230	0.3230%
		Epoxy Cresol Novolac	Trade Secret	2.0900	1.9941%	12,980	1.2980%
		Phenol Resin	Trade Secret	4.2000	4.0073%	26,085	2.6085%

Package Weight (mg): 161.0140 **% 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.
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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: Cypress Manufacturing Limited (CML)
Package Qualification Report #s 063711, 121405 (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-SP20- 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” 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)

B1. Using Gold Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Lead frame	Base Material	Cu	7440-50-8	42.4100	96.1896%	266,679	26.6679%
		Si	7440-21-3	0.2900	0.6577%	1,824	0.1824%
		Mg	7439-95-4	0.0700	0.1588%	440	0.0440%
		Ni	7440-02-0	1.3200	2.9939%	8,300	0.8300%
Lead Finish	External Plating	Ni	7440-02-0	0.8900	95.6989%	5,596	0.5596%
		Pd	7440-05-3	0.0200	2.1505%	126	0.0126%
		Au	7440-57-5	0.0200	2.1505%	126	0.0126%
Die Attach	Adhesive	Ag	7440-22-4	0.1920	80.0000%	1,207	0.1207%
		Proprietary Bismeleide	----------	0.0216	9.0000%	136	0.0136%
		Proprietary Polymer	----------	0.0120	5.0000%	75	0.0075%
		Methacrylate	----------	0.0048	2.0000%	30	0.0030%
		Acrylate Ester	----------	0.0048	2.0000%	30	0.0030%
		Organic Peroxide	----------	0.0048	2.0000%	30	0.0030%
Die	Circuit	Si	7440-21-3	3.6700	100.0000%	23,077	2.3077%
Wire	Interconnect	Au	7440-57-5	1.2400	100.0000%	7,797	0.7797%
Mold Compound	Encapsulation	SiO2	60676-86-0	96.8900	89.0042%	609,256	60.9256%
		Phenol Resin	Proprietary	5.4400	4.9972%	34,207	3.4207%
		Epoxy Resin	Proprietary	6.5300	5.9985%	41,061	4.1061%
		Package Weight (mg):		**159.0300**		**% 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. Using Copper Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Lead frame	Base Material	Cu	7440-50-8	42.4100	96.1896%	267,794	26.7794%
		Si	7440-21-3	0.2900	0.6577%	1,831	0.1831%
		Mg	7439-95-4	0.0700	0.1588%	442	0.0442%
		Ni	7440-02-0	1.3200	2.9939%	8,335	0.8335%
Lead Finish	External Plating	Ni	7440-02-0	0.8900	95.6989%	5,620	0.5620%
		Pd	7440-05-3	0.0200	2.1505%	126	0.0126%
		Au	7440-57-5	0.0200	2.1505%	126	0.0126%
Die Attach	Adhesive	Ag	7440-22-4	0.1920	80.0000%	1,212	0.1212%
		Proprietary Bismeleide	----------	0.0216	9.0000%	136	0.0136%
		Proprietary Polymer	----------	0.0120	5.0000%	76	0.0076%
		Methacrylate	----------	0.0048	2.0000%	30	0.0030%
		Acrylate Ester	----------	0.0048	2.0000%	30	0.0030%
		Organic Peroxide	----------	0.0048	2.0000%	30	0.0030%
Die	Circuit	Si	7440-21-3	3.6700	100.0000%	23,174	2.3174%
Wire	Interconnect	Cu	7440-50-8	0.5782	100.0000%	3,651	0.3651%
Mold Compound	Encapsulation	SiO2	60676-86-0	96.8900	89.0044%	611,804	61.1804%
		Phenol Resin	Proprietary	5.4400	4.9972%	34,350	3.4350%
		Epoxy Resin	Proprietary	6.5300	5.9985%	41,233	4.1233%
		Package Weight (mg):		**158.3682**		**% 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	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-COVT-R
	Carrier tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-CART-R
Tube	End Pin	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-ENDP-R
	End Plug	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-EPLG-R
HIC	Humidity Indicator	<10.0	< 5.0	< 4.0	< 1.0	< 100.0	< 100.0	CoA-HIC-R
Others	Shielding bag	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	CoA-SBAG-R

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Document History Page

Document Title: 20L - SSOP PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-04102

Rev.	ECN No.	Orig. of Change	Description of Change
**	388679	EML	New document
*A	417225	YXP	Edited Summary section – edited package weight for assembly site 1, and added package weight for assembly site 2. Added "(PMDD)" on title page. Edited Note 3 on footer section. Added Note 4 on footer section. Added qual report # 043102 for assembly site 1. Revised section I-B of assembly site 1 to reflect updated package weight. Added PMDD data for assembly site 2.
*B	432489	MRB	Added referencing to the automotive qualification report number 042702 for assembly site 1.
*C	602516	MRB	1. Updated Cypress Logo 2. Added package weight on Site 3 3. Added on the material composition the percent weight per homogeneous material and weight of substance per package on assembly site 1 and 2. 4. Added PMDD for assembly site 3 5. Deleted assembly site 1 and 2 on the declaration of Packaging/Indirect. 6. Update Lead, CrIV, PBB and PBDE on the Declaration of Packaging/Indirect Materials.
*D	2602510	MAHA DCON	1.Added the following for assembly site 1: a. Package weight for NiPdAu lead finish b. Table A for NiPdAu lead finish c. Reference QTP 053005 d. Material composition table for NiPdAu lead finish 2. Changed CoA-SP28-R to CoA-SP20-R for assembly site 3. Changed CML to WEB in distribution list.

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Rev.	ECN No.	Orig. of Change	Description of Change
*E	2819624	MAHA	Corrected the CAS number of Magnesium and Silica on Table B1 of assembly site 1. Corrected the spelling of Proprietary in Proprietary Polymer on the material composition table of assembly site 3. Added the CAS number of SiO2 on the material composition table of assembly site 3. Corrected the CAS number of Magnesium on the material composition table of assembly site 3.
*F	2915244	SMYU	1.Added the following for assembly site 2: a. Package weight for NiPdAu lead finish b. Table A for NiPdAu lead finish c. Reference QTP 074606 d. Material composition table for NiPdAu lead finish
*G	3067069	MAHA	Added percent signs to the percent weight per homogeneous material and weight of substance per package values on the following: 1. Table B1 of assembly site 1 2. Assembly site 3 Added percent signs to the percent weight per homogeneous material values on Assembly site 2.
*H	3440953	MAHA	Expressed the weight by mg, package weight, % weight of substance per Homogeneous material, and % weight of substance per package in four decimal places; and recalculated the PPM values for all assembly sites.
*I	3562734	UDR	Added B3 under Site 1 with reference QTP # 120410 for SSOP 20L Copper Wire Qualification.
*J	3645620	COPI	Added PMDD B2 for Assembly Site 3. CML-RA Copper wire qualification under QTP # 121405.
*K	4032303	YUM	Added assembly site name in the Assembly heading. Changed Assembly Code to Assembly Site Name.

Distribution: WEB

Posting: None

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