

**PACKAGE MATERIAL DECLARATION DATASHEET**

<b>Cypress Package Code</b>	ZSA	<b>Body Size (mil/mm)</b>	6 X 8 mm
<b>Package Weight – Site 1</b>	B1: 88.9905 mg	<b>Package Weight – Site 2</b>	
<b>Package Weight – Site 3</b>		<b>Package Weight – Site 4</b>	

**SUMMARY**

The 24-BGA stacked die package is compliant to RoHS. Cypress (Legacy Spansion Part) ordering part numbers containing an “H” (e.g. S70FS01GSAGBH1020) meet the Directive of 2002/95/ EC (Rohs) requirement.

**ASSEMBLY Site 1: Cypress Bangkok (SB)  
Package Qualification Report # 155005 (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	Material analysis report
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](http://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

## 24- BGA (6 x 8 mm) Stack Die with 5x5 Ball Matrix Pb-Free Package

### B. MATERIAL COMPOSITION (Note 3) Using Copper-Palladium wire material

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	Copper	7440-50-8	1.1182	4.8537%	12578	1.2578%
		Gold	7440-57-5	0.0183	0.0794%	206	0.0206%
		Nickel	7440-02-0	0.1538	0.6676%	1730	0.1730%
		Cured thermosetting resin	Trade Secret	13.3021	57.7398%	149630	14.9630%
		Filament Fiber Glass	65997-17-3	8.4456	36.6594%	95001	9.5001%
Solder Ball	External Plating	Tin	7440-31-5	3.8341	96.4990%	43128	4.3128%
		Silver	7440-22-4	0.1192	3.0001%	1341	0.1341%
		Copper	7440-50-8	0.0199	0.5009%	224	0.0224%
Die Attach	Adhesive	Epoxy Resin	Trade Secret	0.2579	15.0006%	2901	0.2901%
		Phenol Resin	Trade Secret	0.2579	15.0006%	2901	0.2901%
		SiO2 Filler	Trade Secret	0.0860	4.9998%	967	0.0967%
		Acrylic Copolymer	Trade Secret	1.1175	64.9989%	12570	1.2570%
Die	Circuit	Silicon	7440-21-3	18.8125	100.0000%	211615	21.1615%
Wire	Interconnect	Copper	7440-50-8	0.1036	98.1061%	1165	0.1165%
		Palladium	7440-05-3	0.0019	1.7992%	21	0.0021%
		Gold	7440-57-5	0.0001	0.0947%	1	0.0001%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	35.0636	85.0002%	394417	39.4417%
		Carbon Black	1333-86-4	0.1031	0.2499%	1160	0.1160%
		Epoxy resin	Trade Secret	5.7133	13.8500%	64267	6.4267%
		Phosphoric organic catalyst	Trade Secret	0.1237	0.2999%	1391	0.1391%
		Metal Oxides	Trade Secret	0.2475	0.6000%	2784	0.2784%

**Package Weight (mg):** **88.8998**

**% 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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## Document History Page

Document Title: 24 - BGA (6X8MM) Stack Die with 5x5 Ball Matrix PB-FREE PACKAGE MATERIAL  
DECLARATION DATASHEET  
Document Number: 002-16014

Rev.	ECN No.	Orig. of Change	Description of Change
**	5400331	CHAL	New document

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