

**PART INFORMATION**

Mfg Item Number	P5040NSE1TMB
Mfg Item Name	FCPBGA 1295 37.5SQ3.55P1

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2014-07-14
Response Document ID	8404K50008S256A1.5
Contact Name	Freescale Semiconductor Inc
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URL for Additional Information	www.freescale.com

**DECLARATION**

EU RoHS	Yes
Pb Free	No
HalogenFree	Yes
Plating Indicator	e1
EU RoHS Exemption(s)	15

**MANUFACTURING**

Mfg Item Number	P5040NSE1TMB
Mfg Item Name	FCPBGA 1295 37.5SQ3.55P1
Version	ALL
Weight	13.973900
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	3
Peak Processing Temperature	245 C
Max Time at Peak Temperature	30 seconds
Number of Processing Cycles	3

RoHS	
RoHS Directive	2011/65/EU
RoHS Definition	RoHS Definition: Quantity limit of 0.1% by mass (1000 PPM) of homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material of Cadmium
RoHS Legal Definition	Please indicate whether any homogeneous material (as defined by the RoHS Directive, EU 2011/65/EU and implemented by the laws of the European Union member states) of the part(s) identified on this form contains lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a RoHS restricted substance) in excess of the applicable quantity limit identified below. If a homogeneous material within the part(s) contains a RoHS restricted substance in excess of an applicable quantity limit, please indicate below which, if any, RoHS exemption you believe may apply. If the part is an assembly with lower level components, the declaration shall encompass all such components. Supplier certifies that it gathered the information it provides in this form using appropriate methods to ensure its accuracy and that such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products with European Union member state laws that implement the RoHS Directive. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s), the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Suppliers liability and the Companys remedies for issues that arise regarding information the Supplier provides in this form. In the absence of such written agreement, the warranty rights and/or remedies of Suppliers Standard Terms and Conditions of Sale applicable to such part(s) shall apply.
RoHS Declaration	4 - Item(s) does not contain RoHS restricted substances per the definition above except for selected exemptions
Supplier Acceptance	Accepted
Signature	Daniel Binyon
Exemption List Version	2012/51/EU
Exemptions in this part	15:Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages
List of Freescale Accepted Exemptions	<p>6(a) : Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight</p> <p>6(b) : Lead as an alloying element in aluminium containing up to 0.4% lead by weight</p> <p>6(c) : Copper alloy containing up to 4% lead by weight</p> <p>7(a) : Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)</p> <p>7(b) : Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications</p> <p>7(c)-I : Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound</p> <p>7(c)-II : Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher</p> <p>7(c)-III : Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC</p> <p>7(c)-IV : Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors</p> <p>15 : Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages</p>

MATERIAL COMPOSITION

Homogeneous Material	Weight	SubstanceClass	Substance	CAS	Exemption	SubstanceWeight	UoM	SubPart PPM	SubPart%	ARTICLEPPM	ARTICLE%
Bonding Agent	0.0115						g				
Bonding Agent		Solvents, additives, and other materials	Siloxanes and silicones, di-Me, vinyl group-terminated	68083-19-2		0.005175	g	450000	45	370	0.037
Bonding Agent		Glass	Silica, crystalline - quartz (SiO2)	14808-60-7		0.0046	g	400000	40	329	0.0329
Bonding Agent		Solvents, additives, and other materials	Dimethylsilylated and trimethylsilylated silica	68988-89-6		0.001725	g	150000	15	123	0.0123
Underfill	0.0657						g				
Underfill		Bismuth/Bismuth Compounds	Bismuth nitrate	10361-44-1		0.0029197	g	4444	0.4444	20	0.002
Underfill		Bismuth/Bismuth Compounds	Bismuth trioxide	1304-76-3		0.0029197	g	4444	0.4444	20	0.002
Underfill		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.00729999	g	111111	11.1111	622	0.0522
Underfill		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.00729999	g	111111	1.1111	52	0.0052
Underfill		Plastics/polymers	4,4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane bisacrylate	25068-38-6		0.0021997	g	444444	4.4444	208	0.0208
Underfill		Glass	Silica, vitreous	60676-86-0		0.04745013	g	722224	72.2224	3395	0.3395
Underfill		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances.	-		0.00180597	g	24444	2.4444	114	0.0114
Underfill		Solvents, additives, and other materials	Proprietary Material-Other aliphatic amine compounds	-		0.00511001	g	77778	7.7778	365	0.0365
Heat Spreader	7.532						g				
Heat Spreader		Metals	Copper, metal	7440-50-8		7.5078462	g	996785	99.6785	537289	53.7289
Heat Spreader		Nickel (external applications only)	Nickel	7440-02-0		0.0241538	g	3215	0.3215	1732	0.1732
Die Encapsulant, Filler	1.8864						g				
Die Encapsulant, Filler		Metals	Aluminum, metal	7429-90-5		1.358208	g	720000	72	97196	9.7196
Die Encapsulant, Filler		Solvents, additives, and other materials	Proprietary Material-Other siloxanes and silicones	-		0.169776	g	90000	9	12149	1.2149
Die Encapsulant, Filler		Metals	Zinc oxide	1314-13-2		0.339562	g	180000	18	24299	2.4299
Die Encapsulant, Filler		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances.	-		0.018864	g	10000	1	1349	0.1349
Solder Balls - Lead Free	1.2821						g				
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8		0.00642204	g	5009	0.5009	459	0.0459
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.03853223	g	30054	3.0054	2757	0.2757
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		1.23714573	g	964937	96.4937	88532	8.8532
Organic Substrate, Halogen-free	2.803				15		g				
Organic Substrate, Halogen-free		Solvents, additives, and other materials	Proprietary Material-Other acrylonitrile compounds	-		0.00782037	g	2790	0.279	559	0.0559
Organic Substrate, Halogen-free		Arsenic/Arsenic Compounds	Arsenic	7440-39-2		0.0022424	g	80	0.008	16	0.0016
Organic Substrate, Halogen-free		Metals	Barium sulfate	7727-43-7		0.0327821	g	11669	1.1669	2340	0.234
Organic Substrate, Halogen-free		Metals	Copper, metal	7440-50-8		1.62859344	g	581018	58.1018	115545	11.5545
Organic Substrate, Halogen-free		Lead/Lead Compounds	Lead	7439-92-1		0.00283664	g	1012	0.1012	202	0.0202
Organic Substrate, Halogen-free		Glass	Fibrous-glass-wool	65997-17-3		0.91962226	g	328085	32.8085	65809	6.5809
Organic Substrate, Halogen-free		Glass	Silicon dioxide	7631-86-9		0.11374854	g	40581	4.0581	8140	0.814
Organic Substrate, Halogen-free		Metals	Silver, metal	7440-22-4		0.00120249	g	429	0.0429	86	0.0086
Organic Substrate, Halogen-free		Metals	Tin, metal	7440-31-5		0.09624381	g	34336	3.4336	6887	0.6887
High Pb Bumped Semiconductor D	0.3932				15		g				
High Pb Bumped Semiconductor D		Lead/Lead Compounds	Lead	7439-92-1		0.0370004	g	94177	9.4177	2649	0.2649
High Pb Bumped Semiconductor D		Nickel (external applications only)	Nickel	7440-02-0		0.0002439	g	825	0.0825	23	0.0023
High Pb Bumped Semiconductor D		Metals	Tin, metal	7440-31-5		0.0019487	g	4956	0.4956	139	0.0139
High Pb Bumped Semiconductor D		Metals	Titanium, metal	7440-32-6		0.00001651	g	42	0.0042	1	0.0001
High Pb Bumped Semiconductor D		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.0035388	g	9000	0.9	253	0.0253
High Pb Bumped Semiconductor D		Glass	Silicon, doped	-		0.3503412	g	891000	89.1	25071	2.5071

## LINKS

### MCD LINK

Freescale website <http://www.freescale.com>

### GENERAL ENVIRONMENTAL COMPLIANCE LINKS

RoHS signed letter [http://www.freescale.com/files/abstract/corporate/ehs\\_epp/ENV\\_ROHS\\_Freescale\\_Response.pdf](http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_ROHS_Freescale_Response.pdf)

China RoHS <http://www.freescale.com/chinarohs>

REACH signed letter [http://www.freescale.com/files/abstract/corporate/ehs\\_epp/ENV\\_REACH\\_Freescale\\_Response.pdf](http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_REACH_Freescale_Response.pdf)

ELV signed letter [http://www.freescale.com/files/abstract/corporate/ehs\\_epp/ENV\\_ELV\\_Freescale\\_Reponse.pdf](http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_ELV_Freescale_Reponse.pdf)

Conflict Minerals statement [http://www.freescale.com/files/abstract/corporate/ehs\\_epp/ENV\\_CONFLICT\\_METAL\\_Freescale\\_Response.pdf](http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_CONFLICT_METAL_Freescale_Response.pdf)

### FREESCALE ENVIRONMENTAL INFORMATION

EPP website <http://www.freescale.com/epp>

FAQ [http://www.freescale.com/webapp/sps/site/overview.jsp?code=ENVIRON\\_FAQ](http://www.freescale.com/webapp/sps/site/overview.jsp?code=ENVIRON_FAQ)

Technical Service Request [https://www.freescale.com/webapp/servicerequest.create\\_SR.framework?defaultCategory=Hardware Product Support&defaultTopic=Environmentally Preferred Prod](https://www.freescale.com/webapp/servicerequest.create_SR.framework?defaultCategory=Hardware+Product+Support&defaultTopic=Environmentally+Preferred+Prod)

### LINKS TO BLANK IPC1752 FORMS

Blank IPC1752 v1.1 Form [http://www.freescale.com/files/abstract/corporate/ehs\\_epp/IPC-1752-2\\_v1.1\\_MCD\\_Template.pdf](http://www.freescale.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf)

IPC1752 XML LINKS

[http://www.freescale.com/mcdfs/P5040NSE1TMB\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/P5040NSE1TMB_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/P5040NSE1TMB\\_IPC1752A.xml](http://www.freescale.com/mcdfs/P5040NSE1TMB_IPC1752A.xml)