

**PART INFORMATION**

Mfg Item Number	SPC5642AF2MVZ3
Mfg Item Name	PBGA 324 23*23*1.25P1.0

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2018-06-27
Response Document ID	5241A1.19
Contact Name	Freescale Semiconductor Inc
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URL for Additional Information	www.freescale.com

**DECLARATION**

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e2
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	SPC5642AF2MVZ3
Mfg Item Name	PBGA 324 23*23*1.25P1.0
Version	ALL
Weight	1.713750
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	3
Peak Processing Temperature	260 C
Max Time at Peak Temperature	40 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	1 - Item(s) do not contain RoHS restricted substances per the definition above
Supplier Acceptance	Accepted
Signature	Daniel Binyon
Exemption List Version	2012/51/EU
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%
Epoxy Die Attach	0.0145	Solvents, additives, and other materials	1,3,5-Triazine-2,4-diamine, 6-[2-(2-methyl-1H-imidazol-1-yl)ethyl]	38668-46-1		0.00012254	g	8451	0.8451	71	0.0071
Epoxy Die Attach		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.0016789	g	129579	12.9579	1096	0.1096
Epoxy Die Attach		Plastics/polymers	4,4'-Dihydroxydiphenyl	92-88-6		0.00012254	g	8451	0.8451	71	0.0071
Epoxy Die Attach		Metals	Silver, metal	7440-22-4		0.01237602	g	853519	85.3519	7221	0.7221
Solder Balls - Pb Free, SnAg	0.2675	Metals	Silver, metal	7440-22-4		0.0093625	g	35000	3.5	5463	0.5463
Solder Balls - Pb Free, SnAg		Metals	Tin, metal	7440-31-5		0.2581375	g	965000	96.5	150627	15.0627
Die Encapsulant	0.7571	Plastics/polymers	Other Epoxy resins	-		0.045426	g	60000	6	26506	2.6506
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.007571	g	10000	1	4417	0.4417
Die Encapsulant		Solvents, additives, and other materials	Other inorganic compounds	-		0.015142	g	20000	2	8835	0.8835
Die Encapsulant		Plastics/polymers	Other phenolic resins	-		0.037955	g	50000	5	22088	2.2088
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		0.851106	g	860000	86	379947	37.9947
Bonding Wire	0.0159	Metals	Gold, metal	7440-57-5		0.0159	g	1000000	100	9277	0.9277
Organic Substrate	0.592	Metals	Barium sulfate	7727-43-7		0.01296592	g	21985	2.1985	7559	0.7559
Organic Substrate		Metals	Copper, metal	7440-50-8		0.39746597	g	671380	67.138	231922	23.1922
Organic Substrate		Plastics/polymers	2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)bisoxirane	1675-54-3		0.00134502	g	2272	0.2272	784	0.0784
Organic Substrate		Plastics/polymers	Poly[o-cresyl glycidyl ether]-co-formaldehyde	20690-82-2		0.03845987	g	64966	6.4966	22441	2.2441
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00082051	g	1386	0.1386	478	0.0478
Organic Substrate		Solvents, additives, and other materials	1-cyanoguanidine	461-58-5		0.00017582	g	297	0.0297	102	0.0102
Organic Substrate		Solvents, additives, and other materials	1,1'-(methylene)di-p-phenylene(bismaleimide)	13676-54-5		0.01153808	g	19490	1.949	6732	0.6732
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00485795	g	8206	0.8206	2834	0.2834
Organic Substrate		Plastics/polymers	4,4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane concentrate	25068-38-6		0.03845987	g	64966	6.4966	22441	2.2441
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.06153662	g	103947	10.3947	35907	3.5907
Organic Substrate		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances	-		0.00397469	g	6714	0.6714	2319	0.2319
Organic Substrate		Metals	Copper phthalocyanine	147-14-8		0.00010538	g	178	0.0178	61	0.0061
Organic Substrate		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.0203133	g	34313	3.4313	11853	1.1853
Silicon Semiconductor Die	0.06675						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.001335	g	20000	2	778	0.0778
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.065415	g	980000	98	38170	3.817

## LINKS

MCD LINK	
NXP website	<a href="http://www.nxp.com">http://www.nxp.com</a>
GENERAL ENVIRONMENTAL COMPLIANCE LINKS	
RoHS signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-ROHS-DECLARATION.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-ROHS-DECLARATION.pdf</a>
China RoHS	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/china-rohs:ENV_CHINA_ROHS_STRATEGY">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/china-rohs:ENV_CHINA_ROHS_STRATEGY</a>
REACH signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-REACH-STATEMENT.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-REACH-STATEMENT.pdf</a>
ELV signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-ELV-STATEMENT.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-ELV-STATEMENT.pdf</a>
Conflict Minerals statement	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-STATEMENT-CONFLICT-MINERALS.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-STATEMENT-CONFLICT-MINERALS.pdf</a>
NXP ENVIRONMENTAL INFORMATION	
Environmental Compliance website	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization:ABUENVPRFPRDX">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization:ABUENVPRFPRDX</a>
FAQ	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/eco-product-faqs:ENVIRON_FAQ">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/eco-product-faqs:ENVIRON_FAQ</a>
Technical Service Request	<a href="http://www.nxp.com/support/sales-and-support:SUPPORTHOME">http://www.nxp.com/support/sales-and-support:SUPPORTHOME</a>
LINKS TO BLANK IPC1752 FORMS	
Blank IPC1752 v1.1 Form	<a href="http://www.NXP.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf">http://www.NXP.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf</a>

IPC1752 XML LINKS

[http://www.freescale.com/mcdfs/SPC5642AF2MVZ3\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/SPC5642AF2MVZ3_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/SPC5642AF2MVZ3\\_IPC1752A.xml](http://www.freescale.com/mcdfs/SPC5642AF2MVZ3_IPC1752A.xml)