

**PART INFORMATION**

Mfg Item Number	MCF5282CVF66
Mfg Item Name	MAPBGA 256 17*17*1.6P1.0

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2014-08-27
Response Document ID	5246K00022D091M1.4
Contact Name	Freescale Semiconductor Inc
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**DECLARATION**

EU RoHS	No
Pb Free	No
HalogenFree	Yes
Plating Indicator	e0
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	MCF5282CVF66
Mfg Item Name	MAPBGA 256 17*17*1.6P1.0
Version	ALL
Weight	0.804000
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	3
Peak Processing Temperature	220 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	3 - Item(s) does not contain RoHS restricted substances per the definition above except for lead in solders and selected exemptions, if any
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%
Solder Balls - Low Lead	0.1491						g				
Solder Balls - Low Lead		Lead/Lead Compounds	Lead	7439-92-1		0.053676	g	360000	36	66761	6.6761
Solder Balls - Low Lead		Metals	Silver, metal	7440-22-4		0.002982	g	20000	2	3708	0.3708
Solder Balls - Low Lead		Metals	Tin, metal	7440-31-5		0.092442	g	620000	62	114977	11.4977
Non-Conductive Epoxy/Adhesive	0.0105						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.0007875	g	75000	7.5	979	0.0979
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0021	g	200000	20	2611	0.2611
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.0007875	g	75000	7.5	979	0.0979
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0021	g	200000	20	2611	0.2611
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.004725	g	450000	45	5876	0.5876
Silicon Semiconductor Die	0.0933						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.001866	g	20000	2	2320	0.232
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.091434	g	980000	98	113723	11.3723
Die Encapsulant, Halogen-free	0.342						g				
Die Encapsulant, Halogen-free		Metals	Other aluminum compounds	-		0.01026	g	30000	3	12761	1.2761
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.00342	g	10000	1	4253	0.4253
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.01026	g	30000	3	12761	1.2761
Die Encapsulant, Halogen-free		Plastics/polymers	Other phenolic resins	-		0.01026	g	30000	3	12761	1.2761
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0		0.2907	g	850000	85	361584	36.1584
Die Encapsulant, Halogen-free		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.0171	g	50000	5	21268	2.1268
Bonding Wire, PdCu	0.0018						g				
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.0017658	g	981000	98.1	2196	0.2196
Bonding Wire, PdCu		Metals	Gold, metal	7440-57-5		0.0000018	g	1000	0.1	2	0.0002
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3		0.0000324	g	18000	1.8	40	0.004
Organic Substrate	0.2073						g				
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.01408334	g	67937	6.7937	17516	1.7516
Organic Substrate		Metals	Copper, metal	7440-50-8		0.04193009	g	202272	20.2272	52152	5.2152
Organic Substrate		Plastics/polymers	Epikote 862	28064-14-4		0.01763307	g	85065	8.5065	21932	2.1932
Organic Substrate		Plastics/polymers	Formaldehyde, polymer with 2-methylphenol, glycidyl ether	64425-89-4		0.02181915	g	105254	10.5254	27138	2.7138
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00079565	g	3843	0.3843	990	0.099
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00622169	g	30013	3.0013	7738	0.7738
Organic Substrate		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.00962929	g	46451	4.6451	11976	1.1976
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.05997997	g	284515	28.4515	73358	7.3358
Organic Substrate		Glass	Silicon dioxide	7631-96-9		0.00505543	g	24387	2.4387	6287	0.6287
Organic Substrate		Solvents, additives, and other materials	Other Aromatic carbonyl compounds	-		0.00226123	g	10908	1.0908	2812	0.2812
Organic Substrate		Metals	Aluminum Hydroxide	21645-51-2		0.02888829	g	139355	13.9355	35930	3.593

## 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/MCF5282CVF66\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MCF5282CVF66_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MCF5282CVF66\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MCF5282CVF66_IPC1752A.xml)