

<b>PART INFORMATION</b>	
Mfg Item Number	MC9S08MM128CMB
Mfg Item Name	MAPBGA 81 10*10*0.8P1.0
<b>SUPPLIER</b>	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2015-06-18
Response Document ID	5332K11093D022A1.14
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
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Representative Title	EPP Customer Response
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URL for Additional Information	www.freescale.com
<b>DECLARATION</b>	
EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e1
EU RoHS Exemption(s)	
<b>MANUFACTURING</b>	
Mfg Item Number	MC9S08MM128CMB
Mfg Item Name	MAPBGA 81 10*10*0.8P1.0
Version	ALL
Weight	0.244100
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	<p>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.</p>
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
<p>List of Freescale Accepted Exemptions</p> <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. piezoelectric 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%	ARTICLE EPPM	ARTICLE%
Die Encapsulant	0.1353		Metals	Aluminum, metal	7429-90-5	0.00418023	g	30896	3.0896	17125	1.7125
Die Encapsulant		Plastics/polymers	Proprietary Material-Other Epoxy resins		0.00418023	g	30896	3.0896		17125	1.7125
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-96-4		0.00041808	g	3090	0.309	1712	0.1712
Die Encapsulant		Solvents, additives, and other materials	Other organic phosphorous compounds	-		0.00041808	g	3090	0.309	1712	0.1712
Die Encapsulant		Plastics/polymers	Proprietary Material-Other phenolic resins	-		0.00763666	g	56642	5.6642	31395	3.1395
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		0.11843972	g	875386	87.5386	485230	48.523
Non-Conductive Epoxy/Adhesive	0.001						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.000075	g	75000	7.5	307	0.0307
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0002	g	200000	20	819	0.0819
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.000075	g	75000	7.5	307	0.0307
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0002	g	200000	20	819	0.0819
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00045	g	450000	45	1843	0.1843
Non-Conductive Epoxy/Adhesive	0.001						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.000075	g	75000	7.5	307	0.0307
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0002	g	200000	20	819	0.0819
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.000075	g	75000	7.5	307	0.0307
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0002	g	200000	20	819	0.0819
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00045	g	450000	45	1843	0.1843
Solder Balls - Lead Free	0.021						g				
Solder Balls - Lead Free		Metals	Aluminum, metal	7429-90-5		0.00000011	g	5	0.0005	0	0
Solder Balls - Lead Free		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.0000017	g	81	0.0081	6	0.0006
Solder Balls - Lead Free		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.0000008	g	38	0.0038	3	0.0003
Solder Balls - Lead Free		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.00000082	g	39	0.0039	3	0.0003
Solder Balls - Lead Free		Metals	Copper, metal	7440-59-8		0.00010664	g	5078	0.5078	436	0.0436
Solder Balls - Lead Free		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.00000064	g	40	0.004	3	0.0003
Solder Balls - Lead Free		Metals	Iron, metal	7439-89-6		0.00000071	g	34	0.0034	2	0.0002
Solder Balls - Lead Free		Lead/Lead Compounds	Lead	7439-92-1		0.0000047	g	224	0.0224	19	0.0019
Solder Balls - Lead Free		Metals	Nickel (external applications only)	7440-02-0		0.00000082	g	39	0.0039	3	0.0003
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.00018961	g	9029	0.9029	776	0.0776
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.02069171	g	985320	98.532	84767	8.4767
Solder Balls - Lead Free		Metals	Zinc, metal	7440-66-6		0.00000013	g	6	0.0006	0	0
Solder Balls - Lead Free		Metals	Germanium	7440-56-4		0.00000141	g	67	0.0067	5	0.0005
Organic Substrate	0.0639		Solvents, additives, and other materials	Acrylonitrile/Butadiene copolymer, carboxyl terminated (95/4)	68891-46-3	0.0000379	g	7884	0.7884	2063	0.2063
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.00467505	g	73162	7.3162	19162	1.9152
Organic Substrate		Metals	Copper, metal	7440-50-8		0.01496774	g	234237	23.4237	61318	6.1318
Organic Substrate		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.00203298	g	316322	31.6322	62806	8.2806
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00017157	g	2685	0.2685	702	0.0702
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00073025	g	11428	1.1428	2991	0.2991
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.01665381	g	260623	26.0623	68225	6.8225
Organic Substrate		Plastics/polymers	Other acrylic resins	-		0.00592436	g	92713	9.2713	24270	2.427
Organic Substrate		Solvents, additives, and other materials	Proprietary Material-Methoxysilane	-		0.00006045	g	946	0.0946	247	0.0247
Silicon Semiconductor Die	0.02		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		g				
Silicon Semiconductor Die						0.0004	g	20000	2	1638	0.1638
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.0196	g	980000	98	80294	8.0294
Bonding Wire, PdCu	0.0019						g				
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.0018639	g	981000	98.1	7635	0.7635
Bonding Wire, PdCu		Metals	Gold, metal	7440-57-5		0.0000019	g	1000	0.1	7	0.0007
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3		0.0000342	g	18000	1.8	140	0.014

**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/mcds/MC9S08MM128CMB\\_IPC1752\\_v11.xml](http://www.freescale.com/mcds/MC9S08MM128CMB_IPC1752_v11.xml)

[http://www.freescale.com/mcds/MC9S08MM128CMB\\_IPC1752A.xml](http://www.freescale.com/mcds/MC9S08MM128CMB_IPC1752A.xml)