

**PART INFORMATION**

Mfg Item Number	MC9328MX21VM
Mfg Item Name	MAPBGA 289 17*17*0.8P0.8

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2017-06-07
Response Document ID	5235K10995D007A1.30
Contact Name	Freescale Semiconductor Inc
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**DECLARATION**

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e1
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	MC9328MX21VM
Mfg Item Name	MAPBGA 289 17*17*0.8P0.8
Version	ALL
Weight	0.552300
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

<b>RoHS</b>	
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%
Solder Balls - Lead Free	0.075						g				
Solder Balls - Lead Free		Metals	Aluminum, metal	7429-90-5		0.0000233	g	31	0.0031	4	0.0004
Solder Balls - Lead Free		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.0000938	g	125	0.0125	16	0.0016
Solder Balls - Lead Free		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.0000555	g	74	0.0074	10	0.001
Solder Balls - Lead Free		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.0001403	g	187	0.0187	25	0.0025
Solder Balls - Lead Free		Cadmium/Cadmium Compounds	Cadmium	7440-43-9		0.0000009	g	12	0.0012	1	0.0001
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8		0.00037455	g	4994	0.4994	678	0.0678
Solder Balls - Lead Free		Metals	Gold, metal	7440-57-5		0.00000465	g	62	0.0062	8	0.0008
Solder Balls - Lead Free		Metals	Iron, metal	7439-89-6		0.0000938	g	125	0.0125	16	0.0016
Solder Balls - Lead Free		Lead/Lead Compounds	Lead	7439-92-1		0.00002813	g	375	0.0375	50	0.005
Solder Balls - Lead Free		Nickel (external applications only)	Nickel	7440-02-0		0.0000233	g	31	0.0031	4	0.0004
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.00239648	g	39953	3.9953	5425	0.5425
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.07154103	g	953881	95.3881	129532	12.9532
Solder Balls - Lead Free		Metals	Zinc, metal	7440-66-6		0.00000143	g	19	0.0019	2	0.0002
Solder Balls - Lead Free		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances.	-		0.00000983	g	131	0.0131	17	0.0017
Non-Conductive Epoxy/Adhesive	0.0015						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.0001125	g	75000	7.5	203	0.0203
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0003	g	200000	20	543	0.0543
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.0001125	g	75000	7.5	203	0.0203
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0003	g	200000	20	543	0.0543
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	80676-86-0		0.000675	g	450000	45	1222	0.1222
Silicon Semiconductor Die	0.0216						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000432	g	20000	2	782	0.0782
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.021168	g	980000	98	38326	3.8326
Die Encapsulant, Halogen-free	0.1904						g				
Die Encapsulant, Halogen-free		Metals	Other aluminum compounds	-		0.005712	g	30000	3	10342	1.0342
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.001904	g	10000	1	3447	0.3447
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.005712	g	30000	3	10342	1.0342
Die Encapsulant, Halogen-free		Plastics/polymers	Other phenolic resins	-		0.005712	g	30000	3	10342	1.0342
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	80676-86-0		0.16184	g	850000	85	293047	2.93047
Die Encapsulant, Halogen-free		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.00952	g	50000	5	17237	1.7237
Organic Substrate	0.2576						g				
Organic Substrate		Solvents, additives, and other materials	Acrylonitrile/Butadiene copolymer, carboxyl terminated (2574)	68891-46-3		0.00108501	g	4212	0.4212	1964	0.1964
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.0106881	g	39087	3.9087	18230	1.823
Organic Substrate		Metals	Copper, metal	7440-50-8		0.1115213	g	433044	43.3044	201977	20.1977
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00067594	g	2624	0.2624	1223	0.1223
Organic Substrate		Solvents, additives, and other materials	Silicon	7440-21-3		0.00013009	g	505	0.0505	235	0.0235
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00287658	g	11168	1.1168	5208	0.5208
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.0458592	g	168200	16.82	78917	7.8917
Organic Substrate		Plastics/polymers	Other acrylic resins	-		0.0127597	g	49533	4.9533	23102	2.3102
Organic Substrate		Plastics/polymers	Proprietary Material-Other Non-halogenated Epoxy resins	-		0.07486552	g	29627	29.627	135552	13.5552
Bonding Wire, PdCu	0.0062						g				
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.00603257	g	972995	97.2995	10922	1.0922
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3		0.00016743	g	27005	2.7005	303	0.0303

## 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/MC9328MX21VM\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MC9328MX21VM_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MC9328MX21VM\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MC9328MX21VM_IPC1752A.xml)