

**PART INFORMATION**

Mfg Item Number	MCIMX31LDVMN5DR2
Mfg Item Name	MAPBGA 473 19*19*.8P.8

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2015-07-31
Response Document ID	5365K11221D007A1.24
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	MCIMX31LDVMN5DR2
Mfg Item Name	MAPBGA 473 19*19*.8P.8
Version	ALL
Weight	0.919400
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%
Non-Conductive Epoxy/Adhesive	0.0038						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.000285	g	75000	7.5	309	0.0309
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.00076	g	200000	20	826	0.0826
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.000285	g	75000	7.5	309	0.0309
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.00076	g	200000	20	826	0.0826
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00171	g	450000	45	1859	0.1859
Solder Balls - Lead Free	0.122						g				
Solder Balls - Lead Free		Metals	Aluminum, metal	7429-90-5		0.0000061	g	5	0.0005	0	0
Solder Balls - Lead Free		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.0000088	g	81	0.0081	10	0.01
Solder Balls - Lead Free		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.0000464	g	38	0.0038	5	0.0005
Solder Balls - Lead Free		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.0000476	g	39	0.0039	5	0.0005
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8		0.00061952	g	6078	0.5078	673	0.0673
Solder Balls - Lead Free		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.0000488	g	40	0.004	5	0.0005
Solder Balls - Lead Free		Metals	Iron, metal	7439-89-6		0.00000415	g	34	0.0034	4	0.0004
Solder Balls - Lead Free		Lead/Lead Compounds	Lead	7439-92-1		0.00002733	g	224	0.0224	29	0.0029
Solder Balls - Lead Free		Nickel (external applications only)	Nickel	7440-02-0		0.00000476	g	39	0.0039	5	0.0005
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.00110154	g	9029	0.9029	1198	0.1198
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.12020903	g	985320	98.532	130747	13.0747
Solder Balls - Lead Free		Metals	Zinc, metal	7440-66-6		0.00000073	g	6	0.0006	0	0
Solder Balls - Lead Free		Metals	Germanium	7440-56-4		0.00000817	g	67	0.0067	8	0.0008
Silicon Semiconductor Die	0.0239						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000478	g	20000	2	519	0.0519
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.023422	g	980000	98	25475	2.5475
Die Encapsulant, Halogen-free	0.5163						g				
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Acrylonitrile/Butadiene copolymer, carboxyl terminated (2974)	88891-46-3		0.00025815	g	500	0.05	280	0.028
Die Encapsulant, Halogen-free		Metals	Proprietary Material-Other aluminum compounds	-		0.005163	g	10000	1	5615	0.5615
Die Encapsulant, Halogen-free		Plastics/polymers	Other Epoxy resins	-		0.0129075	g	25000	2.5	14039	1.4039
Die Encapsulant, Halogen-free		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.0129075	g	25000	2.5	14039	1.4039
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon, Black	1333-86-4		0.0028515	g	5000	0.5	2807	0.2807
Die Encapsulant, Halogen-free		Plastics/polymers	Proprietary Material-Other phenolic resins	-		0.020652	g	40000	4	22462	2.2462
Die Encapsulant, Halogen-free		Glass	Silica dioxide	7631-86-9		0.10326	g	200000	20	112312	11.2312
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0		0.35857035	g	694500	69.45	390027	39.0027
Bonding Wire, PdCu	0.0086						g				
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.00849678	g	987998	98.7998	9241	0.9241
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3		0.00010322	g	12002	1.2002	112	0.0112
Organic Substrate	0.2448						g				
Organic Substrate		Solvents, additives, and other materials	Other aromatic amines and their salts	-		0.00005043	g	206	0.0206	54	0.0054
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.00170038	g	6946	0.6946	1849	0.1849
Organic Substrate		Metals	Copper, metal	7440-50-8		0.11445869	g	467560	46.756	12492	12.492
Organic Substrate		Plastics/polymers	Other Epoxy resins	-		0.01371198	g	56013	5.6013	14914	1.4914
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00402525	g	16443	1.6443	4378	0.4378
Organic Substrate		Metals	Talc	14807-96-6		0.00085631	g	3498	0.3498	931	0.0931
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.0141396	g	128325	12.8325	34167	3.4167
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.00904174	g	248945	24.8945	62284	6.2284
Organic Substrate		Glass	Silica dioxide	7631-86-9		0.00999763	g	40840	4.084	10874	1.0874
Organic Substrate		Solvents, additives, and other materials	Other Aromatic carbonyl compounds	-		0.00031873	g	1302	0.1302	346	0.0346
Organic Substrate		Metals	Copper phthalocyanine	147-14-8		0.00001493	g	61	0.0061	16	0.0016
Organic Substrate		Solvents, additives, and other materials	Quinacridone pigment	1047-16-1		0.00001493	g	61	0.0061	16	0.0016
Organic Substrate		Solvents, additives, and other materials	3-methoxy-3-methyl-1-butyl acetate	103429-90-9		0.0018644	g	7616	0.7616	2027	0.2027
Organic Substrate		Plastics/polymers	Epoxy Resin	116254-47-2		0.00541571	g	22123	2.2123	5890	0.589
Organic Substrate		Solvents, additives, and other materials	1,2,4-Trimethylbenzene	95-63-6		0.00001493	g	61	0.0061	16	0.0016

## 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/MCIMX31LDVMN5DR2\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MCIMX31LDVMN5DR2_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MCIMX31LDVMN5DR2\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MCIMX31LDVMN5DR2_IPC1752A.xml)