

PART INFORMATION	
Mfg Item Number	MCF51MM128VMB
Mfg Item Name	MAPBGA 81 10*10*0.8P1.0
SUPPLIER	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2015-07-31
Response Document ID	5332K11093D028A1.20
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
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Authorized Representative	Daniel Binyon
Representative Title	EPP Customer Response
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URL for Additional Information	www.freescale.com
DECLARATION	
EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e1
EU RoHS Exemption(s)	
MANUFACTURING	
Mfg Item Number	MCF51MM128VMB
Mfg Item Name	MAPBGA 81 10*10*0.8P1.0
Version	ALL
Weight	0.243100
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	6(a) : Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight 6(b) : Lead as an alloying element in aluminium containing up to 0.4% lead by weight 6(c) : Copper alloy containing up to 4% lead by weight 7(a) : Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead) 7(b) : Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications 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 7(c)-II : Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher 7(c)-III : Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC 7(c)-IV : Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors 15 : Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages

MATERIAL COMPOSITION

Homogeneous Material	Weight	SubstanceClass	Substance	CAS	Exemption	SubstanceWeight	UoM	SubPart PPM	SubPart%		ARTICLEPPM	ARTICLE%
Non-Conductive Epoxy/Adhesive	0.001						g					
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.000075	g	75000	7.5		308	0.0308
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0002	g	200000	20		822	0.0822
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.000075	g	75000	7.5		308	0.0308
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0002	g	200000	20		822	0.0822
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00045	g	450000	45		1851	0.1851
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	7440-50-8		0.00010664	g	5078	0.5078		438	0.0438
Solder Balls - Lead Free		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.00000084	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		Nickel (external applications only)	Nickel	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		779	0.0779
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.02069171	g	985320	98.532		85116	8.5116
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
Silicon Semiconductor Die	0.02						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.0004	g	20000	2		1645	0.1645
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.0196	g	980000	98		80625	8.0625
Die Encapsulant, Halogen-free	0.1353						g					
Die Encapsulant, Halogen-free		Metals	Other aluminum compounds	-		0.004059	g	30000	3		16696	1.6696
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.001353	g	10000	1		5565	0.5565
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.004059	g	30000	3		16696	1.6696
Die Encapsulant, Halogen-free		Plastics/polymers	Other phenolic resins	-		0.004059	g	30000	3		16696	1.6696
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0		0.115005	g	850000	85		473096	47.3096
Die Encapsulant, Halogen-free		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.006765	g	50000	5		27828	2.7828
Organic Substrate	0.0639						g					
Organic Substrate		Solvents, additives, and other materials	Acrylonitrile/Butadiene copolymer, carboxyl terminated (2674)	68891-46-3		0.00050737	g	7940	0.794		2087	0.2087
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.00620392	g	97088	9.7088		25520	2.552
Organic Substrate		Metals	Copper, metal	7440-50-8		0.01496512	g	234196	23.4196		61559	6.1559
Organic Substrate		Plastics/polymers	4,4'-dihydroxy-3,3',5,5'-tetramethylbiphenyl diglycidyl ether	85954-11-6		0.00419388	g	65632	6.5632		17251	1.7251
Organic Substrate		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.01754798	g	274616	27.4616		72184	7.2184
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00015834	g	2478	0.2478		651	0.0651
Organic Substrate		Solvents, additives, and other materials	Silicon	7440-21-3		0.00006064	g	949	0.0949		249	0.0249
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00060903	g	9531	0.9531		2505	0.2505
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.01666812	g	260847	26.0847		68564	6.8564
Organic Substrate		Plastics/polymers	Other acrylic resins	-		0.0029856	g	46723	4.6723		12281	1.2281
Bonding Wire, PdCu	0.0019						g					
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.0018639	g	981000	98.1		7667	0.7667
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	
Freescal website	http://www.freescal.com
GENERAL ENVIRONMENTAL COMPLIANCE LINKS	
RoHS signed letter	http://www.freescal.com/files/abstract/corporate/ehs_epp/ENV_ROHS_Freescal_Response.pdf
China RoHS	http://www.freescal.com/chinarohs
REACH signed letter	http://www.freescal.com/files/abstract/corporate/ehs_epp/ENV_REACH_Freescal_Response.pdf
ELV signed letter	http://www.freescal.com/files/abstract/corporate/ehs_epp/ENV_ELV_Freescal_Reponse.pdf
Conflict Minerals statement	http://www.freescal.com/files/abstract/corporate/ehs_epp/ENV_CONFLICT_METAL_Freescal_Response.pdf
FREESCALE ENVIRONMENTAL INFORMATION	
EPP website	http://www.freescal.com/epp
FAQ	http://www.freescal.com/webapp/sps/site/overview.jsp?code=ENVIRON_FAQ
Technical Service Request	https://www.freescal.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.freescal.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf

IPC1752 XML LINKS

http://www.freescale.com/mcds/MCF51MM128VMB_IPC1752_v11.xml

http://www.freescale.com/mcds/MCF51MM128VMB_IPC1752A.xml