

PART INFORMATION	
Mfg Item Number	MK21FN1M0AVMC12
Mfg Item Name	MAPBGA 121 8*8*1.5 P0.65
SUPPLIER	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2017-06-27
Response Document ID	00ADA1.16
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
Contact Phone	1-800-521-6274
Contact Email	support@freescale.com
Authorized Representative	Daniel Binyon
Representative Title	EPP Customer Response
Representative Phone	512-895-3406
Representative Email	eppanlst@freescale.com
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	MK21FN1M0AVMC12
Mfg Item Name	MAPBGA 121 8*8*1.5 P0.65
Version	ALL
Weight	0.167700
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	SubPart%	ARTICLE EPPM	ARTICLE%
Bonding Wire, PdCu	0.013					g				75193	7.5193
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8	0.01261	g	970000	97		2325	0.2325
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3	0.00039	g	30000	3		387	0.0387
Solder Balls - Lead Free	0.013					g				2325	0.2325
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8	0.000065	g	5000	0.5		74806	7.4806
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4	0.00039	g	30000	3		1935	0.1935
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5	0.012545	g	965000	96.5		1058	0.1058
Epoxy Die Attach	0.0028					g				51	0.0051
Epoxy Die Attach		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5	0.00032458	g	115920	11.592		13651	1.3651
Epoxy Die Attach		Plastics/polymers	Other Epoxy resins	-	0.00017744	g	63370	6.337		20989	2.0989
Epoxy Die Attach		Solvents, additives, and other materials	1-cyanoquadridine	461-58-5	0.00000865	g	3091	0.3091		1259	0.1259
Epoxy Die Attach		Metals	Silver, metal	7440-22-4	0.00228933	g	817619	81.7619		12593	1.2593
Die Encapsulant, Halogen-free	0.0704					g				384067	38.4067
Die Encapsulant, Halogen-free		Plastics/polymers	Other Epoxy resins	-	0.00352	g	50000	5		8629	0.8629
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4	0.0002112	g	3000	0.3		256197	25.6197
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4	0.002112	g	30000	3		2012	0.2012
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0	0.0645568	g	917000	91.7		772	0.0772
Organic Substrate, Halogen-free	0.06					g				899	0.0899
Organic Substrate, Halogen-free		Metals	Barium sulfate	7727-43-7	0.00144714	g	24119	2.4119		5922	0.5922
Organic Substrate, Halogen-free		Metals	Copper, metal	7440-50-8	0.04296438	g	716073	71.6073		74951	7.4951
Organic Substrate, Halogen-free		Plastics/polymers	4,4'-dihydroxy-3,3',5,5'-tetramethylbiphenyl diglycidyl ether	85954-11-6	0.0003744	g	5624	0.5624		3004	0.3004
Organic Substrate, Halogen-free		Metals	Gold, metal	7440-57-5	0.00012954	g	2159	0.2159		56	0.0056
Organic Substrate, Halogen-free		Metals	Talc	14607-96-6	0.0001509	g	2515	0.2515		5334	0.5334
Organic Substrate, Halogen-free		Nickel (external applications only)	Nickel	7440-02-0	0.00099324	g	16654	1.6654		1013	0.1013
Organic Substrate, Halogen-free		Glass	Fibrous-glass-wool	65997-17-3	0.01256934	g	209489	20.9489		49672	4.9672
Organic Substrate, Halogen-free		Glass	Silicon dioxide	7631-86-9	0.00050382	g	8397	0.8397			
Organic Substrate, Halogen-free		Metals	Copper phthalocyanine	147-14-8	0.00000954	g	159	0.0159			
Organic Substrate, Halogen-free		Solvents, additives, and other materials	3-methoxy-3-methyl-1-butyl acetate	103429-90-9	0.00089466	g	14911	1.4911			
Silicon Semiconductor Die	0.0085		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-	g					
Silicon Semiconductor Die			Glass	Silicon, doped	-	0.00833	g	980000	98		

LINKS

MCD LINK	
NXP website	http://www.nxp.com
GENERAL ENVIRONMENTAL COMPLIANCE LINKS	
RoHS signed letter	http://www.nxp.com/files/corporate/doc/support_info/NXP-ROHS-DECLARATION.pdf
China RoHS	http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/china-rohs:ENV_CHINA_ROHS_STRATEGY
REACH signed letter	http://www.nxp.com/files/corporate/doc/support_info/NXP-REACH-STATEMENT.pdf
ELV signed letter	http://www.nxp.com/files/corporate/doc/support_info/NXP-ELV-STATEMENT.pdf
Conflict Minerals statement	http://www.nxp.com/files/corporate/doc/support_info/NXP-STATEMENT-CONFLICT-MINERALS.pdf
NXP ENVIRONMENTAL INFORMATION	
Environmental Compliance website	http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization:ABUENVPRFPRDX
FAQ	http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/eco-product-faqs:ENVIRON_FAQ
Technical Service Request	http://www.nxp.com/support/sales-and-support:SUPPORTHOME
LINKS TO BLANK IPC1752 FORMS	
Blank IPC1752 v1.1 Form	http://www.NXP.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf

IPC1752 XML LINKS

http://www.freescale.com/mcds/MK21FN1M0AVMC12_IPC1752_v11.xml

http://www.freescale.com/mcds/MK21FN1M0AVMC12_IPC1752A.xml