PART INFORMATION	
Mfg Item Number	MC13224VR2
Mfg Item Name	LGA 145 9.5SQ*1.1P0.5

SUPPLIER	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2011-07-02
Response Document ID	6428K11248D003A1.10
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
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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	e4
EU RoHS Exemption(s)	

MANUFACTURING	
Mfg Item Number	MC13224VR2
Mfg Item Name	LGA 145 9.5SQ*1.1P0.5
Version	ALL
Weight	0.221450
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	2002/95/EC
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 2002/95/EC 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
Exemptions in this part	
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

SubPart	Weight	SubstanceClass	Substance	CAS	Exemption	SubstanceWeight	UoM	SubPart PPM	SubPart%		REACHPPM	REACH%
Non-Conductive Epoxy/Adhesive	0.0008						g					
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.00006	g	75000	7.5		270	0.027
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.00016	g	200000	20		722	0.0722
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.00006	g	75000	7.5		270	0.027
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.00016	g	200000	20		722	0.0722
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00036	g	450000	45		1625	0.1625
Solder Paste	0.001						g					
Solder Paste		Metals	Aluminum, metal and alloys	7429-90-5		0	g	31	0.0031		0	0
Solder Paste		Metals	Antimony, metal and alloys	7440-36-0		0.00005	g	49838	4.9838		225	0.0225
Solder Paste		Metals	Arsenic metal and alloys	7440-38-2		0	g	187	0.0187		0	0
Solder Paste		Metals	Bismuth metal and alloys	7440-69-9		0.000001	g	623	0.0623		4	0.0004
Solder Paste		Metals	Cadmium, metal and alloys	7440-43-9		0	g	12	0.0012		0	0
Solder Paste		Metals	Copper, metal and alloys	7440-50-8		0	g	498	0.0498		0	0
Solder Paste		Metals	Gold, metal and alloys	7440-57-5		0	g	311	0.0311		0	0
Solder Paste		Metals	Iron, metal and alloys	7439-89-6		0	g	125	0.0125		0	0
Solder Paste		Metals	Lead, metallic lead and lead alloys	7439-92-1		0.000001	g	748	0.0748		4	0.0004
Solder Paste		Metals	Nickel, metal and alloys	7440-02-0		0	g	62	0.0062		0	0
Solder Paste		Metals	Silver, metal and alloys	7440-22-4		0.000001	g	623	0.0623		4	0.0004
Solder Paste		Metals	Tin, metal and alloys	7440-31-5		0.000947	g	946923	94.6923		4276	0.4276
Solder Paste		Metals	Zinc, metal and alloys	7440-66-6		0	g	19	0.0019		0	0
Die Encapsulant	0.1176						g					
Die Encapsulant		Metals	Aluminum, metal and alloys	7429-90-5		0.00572	g	48638	4.8638		25829	2.5829
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.000343	g	2918	0.2918		1548	0.1548
Die Encapsulant		Metals	Magnesium, metal and alloys	7439-95-4		0.001144	g	9728	0.9728		5165	0.5165
Die Encapsulant		Solvents, additives, and other materials	Other organic phosphorous compounds	-		0.001144	g	9728	0.9728		5165	0.5165
Die Encapsulant		Solvents, additives, and other materials	Other organic Silicon Compounds	-		0.001144	g	9728	0.9728		5165	0.5165
Die Encapsulant		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.003432	g	29183	2.9183		15497	1.5497
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		0.097237	g	826848	82.6848		439117	43.9117
Die Encapsulant		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.001716	g	14591	1.4591		7748	0.7748
Die Encapsulant		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances	-		0.00572	g	48638	4.8638		25829	2.5829
Capacitor, 0201	0.0003						g					
Capacitor, 0201		Metals	Boron oxide	1303-86-2		0.000011	g	35311	3.5311		49	0.0049
Capacitor, 0201		Metals	Manganese dioxide	1313-13-9		0.000025	g	81674	8.1674		112	0.0112
Capacitor, 0201		Metals	Nickel, metal and alloys	7440-02-0		0.000009	g	31650	3.165		40	0.004
Capacitor, 0201		Metals	Palladium, metal and alloys	7440-05-3		0.000009	g	31148	3.1148		40	0.004
Capacitor, 0201		Metals	Silver, metal and alloys	7440-22-4		0.000021	g	71590	7.159		94	0.0094
Capacitor, 0201		Metals	Tin, metal and alloys	7440-31-5		0.000004	g	13564	1.3564		18	0.0018
Capacitor, 0201		Metals	Barium titanate	12047-27-7		0.000221	g	735063	73.5063		997	0.0997
Capacitor, 0201	0.0003						g					
Capacitor, 0201		Metals	Gold, metal and alloys	7440-57-5		0.000002	g	7000	0.7		9	0.0009
Capacitor, 0201		Metals	Nickel, metal and alloys	7440-02-0		0.000007	g	23000	2.3		31	0.0031
Capacitor, 0201		Metals	Palladium, metal and alloys	7440-05-3		0.000008	g	27000	2.7		36	0.0036
Capacitor, 0201		Metals	Silver, metal and alloys	7440-22-4		0.00008	g	266000	26.6		361	0.0361
Capacitor, 0201		Metals	Tin, metal and alloys	7440-31-5		0.000017	g	57000	5.7		76	0.0076
Capacitor, 0201		Metals	Titanium (IV) Oxide	13463-67-7		0.000185	g	618000	61.8		835	0.0835
Capacitor, 0201		Metals	Platinum, metal and alloys	7440-06-4		0.000001	g	2000	0.2		4	0.0004
Bonding Wire	0.0017						g					
Bonding Wire		Metals	Gold, metal and alloys	7440-57-5		0.0017	g	1000000	100		7676	0.7676
Capacitor, 0201	0.0003						g					
Capacitor, 0201		Solvents, additives, and other materials	Calcium-zirconate	12013-47-7		0.000199	g	664333	66.4333		898	0.0898
Capacitor, 0201		Metals	Copper, metal and alloys	7440-50-8		0.00007	g	232333	23.2333		316	0.0316
Capacitor, 0201		Metals	Nickel, metal and alloys	7440-02-0		0.000014	g	46667	4.6667		63	0.0063
Capacitor, 0201		Metals	Tin, metal and alloys	7440-31-5		0.000017	g	56667	5.6667		76	0.0076
Substrate	0.09						g					
Substrate		Metals	Barium sulfate	7727-43-7		0.001767	g	19636	1.9636		7979	0.7979
Substrate		Metals	Copper, metal and alloys	7440-50-8		0.037662	g	418463	41.8463		170074	17.0074
Substrate		Plastics/polymers	Epikote 862	28064-14-4		0.006457	g	71746	7.1746		29157	2.9157
Substrate		Metals	Gold, metal and alloys	7440-57-5		0.000273	g	3029	0.3029		1232	0.1232
Substrate		Metals	Nickel, metal and alloys	7440-02-0		0.001587	g	17628	1.7628		7166	0.7166
Substrate		Solvents, additives, and other materials	Dipropylene glycol monomethyl ether	34590-94-8		0.005083	g	56473	5.6473		22953	2.2953
Substrate		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.00349	g	38782	3.8782		15759	1.5759
Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.021378	g	237538	23.7538		96539	9.6539
Substrate		Glass	Silicon dioxide	7631-86-9		0.001832	g	20360	2.036		8272	0.8272
Substrate		Metals	Aluminum Hydroxide	21645-51-2		0.010471	g	116345	11.6345		47284	4.7284
Silicon Semiconductor Die	0.00315						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000063	g	20000	2		284	0.0284
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.003087	g	980000	98		13939	1.3939
Silicon Semiconductor Die	0.00315						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000063	g	20000	2		284	0.0284
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.003087	g	980000	98		13939	1.3939
Silicon Semiconductor Die	0.00315						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000063	g	20000	2		284	0.0284
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.003087	g	980000	98		13939	1.3939

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
China RoHS	http://www.freescale.com/chinarohs
REACH signed letter	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
Conflict Minerals statement	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
Technical Service Request	https://www.freescale.com/webapp/servicerequest.create_SR.framework?defaultCategory=Hardware Product Support&defaultTopic=Environmentally Preferred Prod
LINKS TO BLANK IPC1752 FORMS	
Blank IPC1752 v0.9 Form	http://www.freescale.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v0.9_MCD_Template.pdf
Blank IPC1752 v1.1 Form	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/MC13224VR2_IPC1752_v09.xml

http://www.freescale.com/mcds/MC13224VR2_IPC1752_v11.xml

http://www.freescale.com/mcds/MC13224VR2_IPC1752A.xml