

PART INFORMATION		
Mfg Item Number		MCF5471VR200
Mfg Item Name		PBGA 388 27*27*2.25P1.0
SUPPLIER		
Company Name		Freescale Semiconductor Inc
Company Unique ID		14-141-7928
Response Date		2015-06-20
Response Document ID		5367K00033D024A1.23
Contact Name		Freescale Semiconductor Inc
Contact Title		Product Technical Support
Contact Phone		1-800-521-6274
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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		e1
EU RoHS Exemption(s)		
MANUFACTURING		
Mfg Item Number		MCF5471VR200
Mfg Item Name		PBGA 388 27*27*2.25P1.0
Version		ALL
Weight		3.231500
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%
Die Encapsulant	1.4578						g					
Die Encapsulant		Metals	Aluminum, metal	7429-90-5		0.04504019	g	30896	3.0896		13937	1.3937
Die Encapsulant		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.00000146	g	1	0.0001		0	0
Die Encapsulant		Cadmium/Cadmium Compounds	Cadmium	7440-43-9		0.00000146	g	1	0.0001		0	0
Die Encapsulant		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.04504019	g	30896	3.0896		13937	1.3937
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.0045046	g	3090	0.309		1393	0.1393
Die Encapsulant		Lead/Lead Compounds	Lead	7439-92-1		0.00000146	g	1	0.0001		0	0
Die Encapsulant		Solvents, additives, and other materials	Other organic phosphorous compounds	-		0.0045046	g	3090	0.309		1393	0.1393
Die Encapsulant		Plastics/polymers	Proprietary Material-Other phenolic resins	-		0.08257271	g	56642	5.6642		25552	2.5552
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		1.27613333	g	875383	87.5383		394923	39.4923
Epoxy Die Attach	0.0178						g					
Epoxy Die Attach		Solvents, additives, and other materials	1,3,5-Triazine-2,4-diamine, 6-[2-(2-methyl-1H-imidazol-1-yl)ethyl]	38668-46-1		0.00015043	g	8451	0.8451		46	0.0046
Epoxy Die Attach		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.00230651	g	129579	12.9579		713	0.0713
Epoxy Die Attach		Plastics/polymers	4,4'-Dihydroxydiphenyl	92-88-6		0.00015043	g	8451	0.8451		46	0.0046
Epoxy Die Attach		Metals	Silver, metal	7440-22-4		0.01519263	g	853519	85.3519		4701	0.4701
Organic Substrate, Halogen-free	1.3778						g					
Organic Substrate, Halogen-free		Metals	Barium sulfate	7727-43-7		0.07688146	g	55655	5.5655		23729	2.3729
Organic Substrate, Halogen-free		Metals	Copper, metal	7440-50-8		0.48566761	g	352495	35.2495		150291	15.0291
Organic Substrate, Halogen-free		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.10375936	g	75308	7.5308		32108	3.2108
Organic Substrate, Halogen-free		Metals	Gold, metal	7440-57-5		0.01946931	g	14130	1.413		6024	0.6024
Organic Substrate, Halogen-free		Nickel (external applications only)	Nickel	7440-02-0		0.148542	g	107811	10.7811		45966	4.5966
Organic Substrate, Halogen-free		Solvents, additives, and other materials	Other organic Silicon Compounds	-		0.17370614	g	126075	12.6075		53754	5.3754
Organic Substrate, Halogen-free		Glass	Silicon dioxide	7631-86-9		0.35928339	g	260766	26.0766		111181	11.1181
Organic Substrate, Halogen-free		Solvents, additives, and other materials	Proprietary Material-Other Aromatic carbonyl compounds	-		0.01069173	g	7760	0.776		3308	0.3308
Bonding Wire	0.0178						g					
Bonding Wire		Metals	Gold, metal	7440-57-5		0.0178	g	1000000	100		5508	0.5508
Solder Balls - Lead Free	0.3203						g					
Solder Balls - Lead Free		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.00000224	g	7	0.0007		0	0
Solder Balls - Lead Free		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.00000224	g	7	0.0007		0	0
Solder Balls - Lead Free		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.0000016	g	5	0.0005		0	0
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8		0.0022421	g	7000	0.7		693	0.0693
Solder Balls - Lead Free		Metals	Iron, metal	7439-89-6		0.00000577	g	18	0.0018		1	0.0001
Solder Balls - Lead Free		Lead/Lead Compounds	Lead	7439-92-1		0.00001794	g	56	0.0056		5	0.0005
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.01204328	g	37600	3.76		3726	0.3726
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.30598483	g	955307	95.5307		94688	9.4688
Silicon Semiconductor Die	0.04						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.0008	g	20000	2		247	0.0247
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.0382	g	980000	98		12130	1.213

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/MCF5471VR200_IPC1752_v11.xml

http://www.freescale.com/mcds/MCF5471VR200_IPC1752A.xml