

**PART INFORMATION**

Mfg Item Number	MC7447AVU600NB
Mfg Item Name	FCCBGA 360 25SQ*2.8P1.27

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2017-06-06
Response Document ID	8422K10889D018A1.55
Contact Name	Freescale Semiconductor Inc
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**DECLARATION**

EU RoHS	Yes
Pb Free	No
HalogenFree	Yes
Plating Indicator	e2
EU RoHS Exemption(s)	15

**MANUFACTURING**

Mfg Item Number	MC7447AVU600NB
Mfg Item Name	FCCBGA 360 25SQ*2.8P1.27
Version	ALL
Weight	3.118400
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	1
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	4 - Item(s) does not contain RoHS restricted substances per the definition above except for selected exemptions
Supplier Acceptance	Accepted
Signature	Daniel Binyon
Exemption List Version	2012/51/EU
Exemptions in this part	15:Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages
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%
Underfill	0.0484										
Underfill		Solvents, additives, and other materials	Methylhexahydrophthalic anhydride	25550-51-0		0.00731155	g	151065	15.1065	2344	0.2344
Underfill		Plastics/polymers	1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	17557-23-2		0.00289564	g	55695	5.5695	864	0.0864
Underfill		Plastics/polymers	1,6-Bis(2,3-epoxypropoxy) naphthalene	27810-48-6		0.00289564	g	55695	5.5695	864	0.0864
Underfill		Plastics/polymers	Elastomer Modified Diglycidyl Ether	68809-14-8		0.00289564	g	55695	5.5695	864	0.0864
Underfill		Glass	Silica, crystalline - quartz (SiO2)	14808-60-7		0.03159459	g	652781	65.2781	10131	1.0131
Underfill		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.00140694	g	29069	2.9069	451	0.0451
Ceramic Substrate	2.1807										
Ceramic Substrate		Metals	Aluminum Oxides (Al2O3)	1344-28-1		0.05713434	g	26200	2.62	18321	1.8321
Ceramic Substrate		Metals	Barium	7440-39-3		0.4292501	g	197150	19.715	137867	13.7867
Ceramic Substrate		Metals	Boron oxide	1303-86-2		0.07534319	g	34550	3.455	24160	2.416
Ceramic Substrate		Solvents, additives, and other materials	Calcium monoxide	1305-78-8		0.04165137	g	19100	1.91	13356	1.3356
Ceramic Substrate		Metals	Chromium, metal	7440-47-3		0.00719631	g	3300	0.33	2307	0.2307
Ceramic Substrate		Metals	Copper, metal	7440-50-8		0.24282095	g	111350	11.135	77867	7.7867
Ceramic Substrate		Metals	Gold, metal	7440-57-5		0.00173366	g	795	0.0795	555	0.0555
Ceramic Substrate		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.00118848	g	545	0.0545	381	0.0381
Ceramic Substrate		Lead/Lead Compounds	Lead	7439-92-1		0.00001308	g	6	0.0006	4	0.0004
Ceramic Substrate		Metals	Magnesium, metal	7439-95-4		0.00163553	g	750	0.075	524	0.0524
Ceramic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.01188482	g	5450	0.545	3811	0.3811
Ceramic Substrate		Metals	Palladium, metal	7440-05-3		0.00014175	g	65	0.0065	45	0.0045
Ceramic Substrate		Glass	Silicon dioxide	7631-86-9		1.25665887	g	576264	57.6264	403005	40.3005
Ceramic Substrate		Metals	Silver, metal	7440-22-4		0.00038162	g	175	0.0175	122	0.0122
Ceramic Substrate		Metals	Strontium Oxide	1314-11-0		0.00457947	g	2100	0.21	1468	0.1468
Ceramic Substrate		Metals	Tin, metal	7440-31-5		0.01232096	g	5650	0.565	3951	0.3951
Ceramic Substrate		Metals	Zirconium oxide	1314-23-4		0.03609059	g	16550	1.655	11573	1.1573
Capacitor, 0306	0.0816										
Capacitor, 0306		Metals	Copper, metal	7440-50-8		0.0112608	g	138000	13.8	3611	0.3611
Capacitor, 0306		Nickel (external applications only)	Nickel	7440-02-0		0.015912	g	195000	19.5	5102	0.5102
Capacitor, 0306		Metals	Tin, metal	7440-31-5		0.0016088	g	13000	1.3	340	0.034
Capacitor, 0306		Metals	Barium titanate	12047-27-7		0.0533664	g	654000	65.4	17113	1.7113
Capacitor Solder Paste	0.0451										
Capacitor Solder Paste		Metals	Copper, metal	7440-50-8		0.0002255	g	5000	0.5	72	0.0072
Capacitor Solder Paste		Lead/Lead Compounds	Lead	7439-92-1		0.00000374	g	83	0.0083	1	0.0001
Capacitor Solder Paste		Metals	Silver, metal	7440-22-4		0.001353	g	30000	3	433	0.0433
Capacitor Solder Paste		Metals	Tin, metal	7440-31-5		0.04351776	g	964917	96.4917	13955	1.3955
Solder Balls - Pb Free, Sn/Ag	0.6123										
Solder Balls - Pb Free, Sn/Ag		Metals	Aluminum, metal	7429-90-5		0.00001959	g	32	0.0032	6	0.0006
Solder Balls - Pb Free, Sn/Ag		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.00007654	g	125	0.0125	24	0.0024
Solder Balls - Pb Free, Sn/Ag		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.00004592	g	75	0.0075	14	0.0014
Solder Balls - Pb Free, Sn/Ag		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.00011511	g	188	0.0188	36	0.0036
Solder Balls - Pb Free, Sn/Ag		Cadmium/Cadmium Compounds	Cadmium	7440-43-9		0.00000796	g	13	0.0013	2	0.0002
Solder Balls - Pb Free, Sn/Ag		Metals	Copper, metal	7440-50-8		0.00003857	g	63	0.0063	12	0.0012
Solder Balls - Pb Free, Sn/Ag		Metals	Gold, metal	7440-57-5		0.00003857	g	63	0.0063	12	0.0012
Solder Balls - Pb Free, Sn/Ag		Metals	Indium, metal	7440-74-6		0.00003857	g	63	0.0063	12	0.0012
Solder Balls - Pb Free, Sn/Ag		Solvents, additives, and other materials	Sulfur	7704-34-9		0.00000429	g	7	0.0007	1	0.0001
Solder Balls - Pb Free, Sn/Ag		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.00003857	g	63	0.0063	12	0.0012
Solder Balls - Pb Free, Sn/Ag		Metals	Iron, metal	7439-89-6		0.00007654	g	125	0.0125	24	0.0024
Solder Balls - Pb Free, Sn/Ag		Lead/Lead Compounds	Lead	7439-92-1		0.00019165	g	313	0.0313	61	0.0061
Solder Balls - Pb Free, Sn/Ag		Nickel (external applications only)	Nickel	7440-02-0		0.00001959	g	32	0.0032	6	0.0006
Solder Balls - Pb Free, Sn/Ag		Metals	Silver, metal	7440-22-4		0.02143172	g	35002	3.5002	6872	0.6872
Solder Balls - Pb Free, Sn/Ag		Metals	Tin, metal	7440-31-5		0.59014518	g	963817	96.3817	189246	18.9246
Solder Balls - Pb Free, Sn/Ag		Metals	Zinc, metal	7440-66-6		0.00001163	g	19	0.0019	3	0.0003
High Pb Bumped Semiconductor D	0.1503				15						
High Pb Bumped Semiconductor D		Lead/Lead Compounds	Lead	7439-92-1		0.0141548	g	94177	9.4177	4539	0.4539
High Pb Bumped Semiconductor D		Nickel (external applications only)	Nickel	7440-02-0		0.000124	g	825	0.0825	39	0.0039
High Pb Bumped Semiconductor D		Metals	Tin, metal	7440-31-5		0.00074489	g	4956	0.4956	238	0.0238
High Pb Bumped Semiconductor D		Metals	Titanium, metal	7440-32-6		0.00000631	g	42	0.0042	2	0.0002
High Pb Bumped Semiconductor D		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.0013527	g	9000	0.9	433	0.0433
High Pb Bumped Semiconductor D		Glass	Silicon, doped	-		0.1339173	g	891000	89.1	42944	4.2944

## LINKS

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

IPC1752 XML LINKS

[http://www.freescale.com/mcdfs/MC7447AVU600NB\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MC7447AVU600NB_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MC7447AVU600NB\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MC7447AVU600NB_IPC1752A.xml)