Freescale Semiconductor Inc

PART INFORMATION	
Mfg Item Number	PCF52274CLU120
Mfg Item Name	LQFP 176 24*24*1.4_FCIR

SUPPLIER	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2014-07-11
Response Document ID	002SA1.4
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	No
Plating Indicator	e3
EU RoHS Exemption(s)	

MANUFACTURING	
Mfg Item Number	PCF52274CLU120
Mfg Item Name	LQFP 176 24*24*1.4_FCIR
Version	ALL
Weight	1.859600
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%
Lead Frame Plating	0.0096						g					
Lead Frame Plating		Lead/Lead Compounds	Lead	7439-92-1		0.00000192	g	200	0.02		1	0.0001
Lead Frame Plating		Metals	Tin, metal	7440-31-5		0.00959808	g	999800	99.98		5161	0.5161
Non-Conductive Epoxy/Adhesive	0.0005						g					
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.000035	g	70000	7		18	0.0018
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.000015	g	30000	3		8	0.0008
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.00025	g	500000	50		134	0.0134
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Di-ester resin	-		0.00015	g	300000	30		80	0.008
Non-Conductive Epoxy/Adhesive		Solvents, additives, and other materials	Proprietary Material-Functionalized Ester	-		0.00005	g	100000	10		26	0.0026
Bonding Wire	0.0073						g					
Bonding Wire		Metals	Gold, metal	7440-57-5		0.0073	g	1000000	100		3925	0.3925
Silicon Semiconductor Die	0.0072						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.000144	g	20000	2		77	0.0077
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.007056	g	980000	98		3794	0.3794
Copper Lead Frame	0.3689						g					
Copper Lead Frame		Metals	Chromium, metal	7440-47-3		0.00101411	g	2749	0.2749		545	0.0545
Copper Lead Frame		Metals	Copper, metal	7440-50-8		0.36283307	g	983554	98.3554		195113	19.5113
Copper Lead Frame		Metals	Silver, metal	7440-22-4		0.00368826	g	9998	0.9998		1983	0.1983
Copper Lead Frame		Metals	Tin, metal	7440-31-5		0.00092188	g	2499	0.2499		495	0.0495
Copper Lead Frame		Metals	Zinc, metal	7440-66-6		0.00044268	g	1200	0.12		238	0.0238
Die Encapsulant	1.4349						g					
Die Encapsulant		Plastics/polymers	Other Epoxy resins	-		0.100443	g	70000	7		54013	5.4013
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.014349	g	10000	1		7716	0.7716
Die Encapsulant		Plastics/polymers	Other phenolic resins	-		0.071745	g	50000	5		38580	3.858
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		1.248363	g	870000	87		671325	67.1325
Organic Substrate	0.0312						g					
Organic Substrate		Metals	Aluminum Oxides (Al2O3)	1344-28-1		0.000781	g	25032	2.5032		419	0.0419
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.00039886	g	12784	1.2784		214	0.0214
Organic Substrate		Metals	Boron oxide	1303-86-2		0.00039387	g	12624	1.2624		211	0.0211
Organic Substrate		Solvents, additives, and other materials	Calcium monoxide	1305-78-8		0.00079385	g	25444	2.5444		426	0.0426
Organic Substrate		Metals	Chromium, metal	7440-47-3		0.00000683	g	219	0.0219		3	0.0003
Organic Substrate		Metals	Copper, metal	7440-50-8		0.01132206	g	362886	36.2886		6088	0.6088
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00017016	g	5454	0.5454		91	0.0091
Organic Substrate		Solvents, additives, and other materials	Bentonite	1302-78-9		0.0000741	g	2375	0.2375		39	0.0039
Organic Substrate		Metals	Talc	14807-96-6		0.00039886	g	12784	1.2784		214	0.0214
Organic Substrate		Metals	Magnesium-oxide	1309-48-4		0.00079385	g	25444	2.5444		426	0.0426
Organic Substrate		Metals	Nickel bis(sulphamidate)	13770-89-3		0.00077947	g	24983	2.4983		419	0.0419
Organic Substrate		Glass	Silicon dioxide	7631-86-9		0.00336286	g	107784	10.7784		1808	0.1808
Organic Substrate		Glass	Silica, crystalline - quartz (SiO2)	14808-60-7		0.00039886	g	12784	1.2784		214	0.0214
Organic Substrate		Metals	Zinc, metal	7440-66-6		0.00004661	g	1494	0.1494		25	0.0025
Organic Substrate		Solvents, additives, and other materials	Other Aromatic carbonyl compounds	-		0.00019213	g	6158	0.6158		103	0.0103
Organic Substrate		Metals	Copper Phthalocyanine Green	1328-53-6		0.00001351	g	433	0.0433		7	0.0007
Organic Substrate		Plastics/polymers	4,4'-(1-methylethylidene)bisphenol, (chloromethyl)oxirane, 4,4'-(1-methylethlidene)bis(2,6-dibromoph	26265-08-7		0.00937878	g	300602	30.0602		5043	0.5043
Organic Substrate		Solvents, additives, and other materials	Tallow bis(2-hydroxyethyl)amine	61791-44-4		0.00003373	g	1081	0.1081		18	0.0018
Organic Substrate		Plastics/polymers	Other brominated epoxy resins	-		0.00186061	g	59635	5.9635		1000	0.1

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 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/PCF52274CLU120_IPC1752_v11.xml

http://www.freescale.com/mcds/PCF52274CLU120_IPC1752A.xml