

**PART INFORMATION**

Mfg Item Number	MC908QC16CDSE
Mfg Item Name	TSSOP 20 4.4*6.5*1.P.65

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2015-10-30
Response Document ID	6118K50005S181A1.33
Contact Name	Freescale Semiconductor Inc
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**DECLARATION**

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e3
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	MC908QC16CDSE
Mfg Item Name	TSSOP 20 4.4*6.5*1.P.65
Version	ALL
Weight	0.081400
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	<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%
Die Encapsulant	0.03695						g				
Die Encapsulant		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.00037024	g	10020	1.002	4548	0.4548
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.00011107	g	3006	0.3006	1364	0.1364
Die Encapsulant		Solvents, additives, and other materials	Other organic phosphorous compounds	-		0.00037024	g	10020	1.002	4548	0.4548
Die Encapsulant		Plastics/polymers	Proprietary Material-Other phenolic resins	-		0.0018512	g	50100	5.01	22742	2.2742
Die Encapsulant		Plastics/polymers	Proprietary Material-Other polymers	-		0.00277679	g	75150	7.515	34112	3.4112
Die Encapsulant		Glass	Silica, vitreous	60876-86-0		0.03147046	g	851704	85.1704	386614	38.6614
Lead Frame Plating	0.0028						g				
Lead Frame Plating		Lead/Lead Compounds	Lead	7439-92-1		0.00000556	g	200	0.02	6	0.0006
Lead Frame Plating		Metals	Tin, metal	7440-31-5		0.00279944	g	999800	99.98	34391	3.4391
Silicon Semiconductor Die	0.00365						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000073	g	20000	2	896	0.0896
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.003577	g	980000	98	43943	4.3943
Copper Lead Frame	0.0364						g				
Copper Lead Frame		Metals	Copper, metal	7440-50-8		0.03423646	g	940562	94.0562	420609	42.0609
Copper Lead Frame		Solvents, additives, and other materials	Silicon	7440-21-3		0.0002639	g	7250	0.725	3242	0.3242
Copper Lead Frame		Metals	Iron, metal	7439-89-6		0.0000455	g	1250	0.125	558	0.0558
Copper Lead Frame		Lead/Lead Compounds	Lead	7439-92-1		0.00001139	g	313	0.0313	139	0.0139
Copper Lead Frame		Metals	Magnesium, metal	7439-95-4		0.0000637	g	1750	0.175	782	0.0782
Copper Lead Frame		Metals	Manganese, metal	7439-96-5		0.00002275	g	625	0.0625	279	0.0279
Copper Lead Frame		Nickel (external applications only)	Nickel	7440-02-0		0.0011648	g	32000	3.2	14309	1.4309
Copper Lead Frame		Metals	Silver, metal	7440-22-4		0.000364	g	10000	1	4471	0.4471
Copper Lead Frame		Metals	Zinc, metal	7440-66-6		0.0002275	g	6250	0.625	2794	0.2794
Bonding Wire	0.0004						g				
Bonding Wire		Metals	Gold, metal	7440-57-5		0.0004	g	1000000	100	4914	0.4914
Epoxy Die Attach	0.0012						g				
Epoxy Die Attach		Metals	Cupric oxide	1317-38-0		0.00003141	g	26178	2.6178	385	0.0385
Epoxy Die Attach		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.00005026	g	41885	4.1885	617	0.0617
Epoxy Die Attach		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.00005026	g	41885	4.1885	617	0.0617
Epoxy Die Attach		Metals	Silver, metal	7440-22-4		0.00096755	g	806282	80.6282	11886	1.1886
Epoxy Die Attach		Solvents, additives, and other materials	O,O'-Bis(2-aminopropyl)polypropylene glycol	9046-10-0		0.00005026	g	41885	4.1885	617	0.0617
Epoxy Die Attach		Plastics/polymers	Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin	68475-94-5		0.00005026	g	41885	4.1885	617	0.0617

## 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](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](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](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](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](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](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](http://www.freescale.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf)

IPC1752 XML LINKS

[http://www.freescale.com/mcdfs/MC908QC16CDSE\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MC908QC16CDSE_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MC908QC16CDSE\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MC908QC16CDSE_IPC1752A.xml)