

**PART INFORMATION**

Mfg Item Number	MRF8P23160WHSR3
Mfg Item Name	NI-780HS-4

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2018-06-02
Response Document ID	009PK11239D012A1.22
Contact Name	Freescale Semiconductor Inc
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**DECLARATION**

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e4
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	MRF8P23160WHSR3
Mfg Item Name	NI-780HS-4
Version	ALL
Weight	3.086100
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	
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%
Cap/Cover	0.6914						g				
Cap/Cover		Metals	Aluminum Oxides (Al2O3)	1344-28-1		0.65154909	g	942362	94.2362	211123	21.1123
Cap/Cover		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.01516793	g	21938	2.1938	4914	0.4914
Cap/Cover		Metals	Magnesium-oxide	1309-48-4		0.00676258	g	9781	0.9781	2191	0.2191
Cap/Cover		Glass	Silica, crystalline - quartz (SiO2)	14808-60-7		0.01656802	g	23963	2.3963	5368	0.5368
Cap/Cover		Solvents, additives, and other materials	Proprietary Material-Other miscellaneous substances.	-		0.00135238	g	1956	0.1956	438	0.0438
Bonding Wire, Aluminum	0.0033						g				
Bonding Wire, Aluminum		Metals	Aluminum, metal	7429-90-5		0.0033	g	1000000	100	1069	0.1069
Silicon Semiconductor Die	0.0238						g				
Silicon Semiconductor Die		Metals	Gold, metal	7440-57-5		0.00024276	g	10200	1.02	78	0.0078
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.00047114	g	19796	1.9796	152	0.0152
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.0230861	g	970004	97.0004	7480	0.748
Silicon Semiconductor Die	0.0238						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.000476	g	20000	2	154	0.0154
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.023324	g	980000	98	7557	0.7557
Silicon Semiconductor Die	0.0238						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.000476	g	20000	2	154	0.0154
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.023324	g	980000	98	7557	0.7557
Silicon Semiconductor Die	0.0238						g				
Silicon Semiconductor Die		Metals	Gold, metal	7440-57-5		0.00024276	g	10200	1.02	78	0.0078
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.00047114	g	19796	1.9796	152	0.0152
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.0230861	g	970004	97.0004	7480	0.748
Header Assembly	2.2911						g				
Header Assembly		Metals	Aluminum Oxides (Al2O3)	1344-28-1		0.15277742	g	66683	6.6683	49505	4.9505
Header Assembly		Metals	Cobalt, metal	7440-48-4		0.02681274	g	11703	1.1703	8688	0.8688
Header Assembly		Metals	Copper, metal	7440-50-8		0.9646837	g	421057	42.1057	312607	31.2607
Header Assembly		Metals	Gold, metal	7440-57-5		0.00238045	g	1039	0.1039	771	0.0771
Header Assembly		Metals	Iron, metal	7439-89-6		0.0406212	g	17730	1.773	13162	1.3162
Header Assembly		Metals	Molybdenum, metal	7439-98-7		0.95688021	g	417651	41.7651	31061	3.1061
Header Assembly		Nickel (external applications only)	Nickel	7440-02-0		0.06873529	g	30001	3.0001	22272	2.2272
Header Assembly		Metals	Palladium, metal	7440-05-3		0.00185121	g	808	0.808	599	0.0599
Header Assembly		Glass	Silica, crystalline - quartz (SiO2)	14808-60-7		0.00510228	g	2227	0.2227	1653	0.1653
Header Assembly		Metals	Silver, metal	7440-22-4		0.0238114	g	10393	1.0393	7715	0.7715
Header Assembly		Metals	Tungsten, metal	7440-33-7		0.04392268	g	19171	1.9171	14232	1.4232
Header Assembly		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.0026004	g	1135	0.1135	842	0.0842
Header Assembly		Metals	Titanium (III) oxide (Ti2O3)	1344-54-3		0.00092102	g	402	0.0402	298	0.0298
Capacitor, 0201	0.0051						g				
Capacitor, 0201		Metals	Aluminum Oxides (Al2O3)	1344-28-1		0.00015842	g	31063	3.1063	51	0.0051
Capacitor, 0201		Metals	Copper, metal	7440-50-8		0.00031457	g	61680	6.168	101	0.0101
Capacitor, 0201		Metals	Gold, metal	7440-57-5		0.00032715	g	64148	6.4148	106	0.0106
Capacitor, 0201		Metals	Manganese dioxide	1313-13-9		0.00000516	g	1011	0.1011	1	0.0001
Capacitor, 0201		Nickel (external applications only)	Nickel	7440-02-0		0.00016987	g	33308	3.3308	55	0.0055
Capacitor, 0201		Metals	Tin, metal	7440-31-5		0.00005033	g	9869	0.9869	16	0.0016
Capacitor, 0201		Metals	Barium titanate	12047-27-7		0.0040745	g	798921	79.8921	1320	0.132

## 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/MRF8P23160WHSR3\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MRF8P23160WHSR3_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MRF8P23160WHSR3\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MRF8P23160WHSR3_IPC1752A.xml)