



Semiconductor Device Type: QR (H5X) 016 QSOP 3.90mm(.150in) Matte Tin				Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)			JEDEC 97 Product Marking and/or Pkg. Labeling e3																							
Basic Substance	CAS Number	Contained in Sub-Component	% Total Weight	mg/part	ppm	48.50	(mg) Total	Mold Compound	% of Total Weight	58																							
Silica, vitreous	60676-86-0	Mold Compound	49.300	41.225	493,000	<table border="1"> <tr><td>Silica, vitreous</td><td>60676-86-0</td><td>85.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>6.13</td></tr> <tr><td>Phenolic Resin</td><td>Trade Secret</td><td>6.13</td></tr> <tr><td>Epoxy, Cresol Novolac</td><td>29690-82-2</td><td>2.45</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.30</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Silica, vitreous	60676-86-0	85.00	Epoxy Resin	Trade Secret	6.13	Phenolic Resin	Trade Secret	6.13	Epoxy, Cresol Novolac	29690-82-2	2.45	Carbon Black	1333-86-4	0.30	Total		100.00	<table border="1"> <tr><td>(mg) Total</td><td>48.50</td></tr> </table>	(mg) Total	48.50	<table border="1"> <tr><td>Total</td><td>100.00</td></tr> </table>	Total	100.00	<table border="1"> <tr><td>% of Total Weight</td><td>58</td></tr> </table>	% of Total Weight	58
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Epoxy Resin (No bromine, No diantimony trioxide)	Trade Secret	Mold Compound	3.553	2.971	35,525																												
Phenolic Resin (No Br / CL SbO3, No diantimony trioxide)	Trade Secret	Mold Compound	3.553	2.971	35,525																												
Epoxy, Cresol Novolac	29690-82-2	Mold Compound	1.421	1.188	14,210																												
Carbon Black	1333-86-4	Mold Compound	0.174	0.145	1,740																												
Copper	7440-50-8	Lead Frame	35.893	30.014	358,934	<table border="1"> <tr><td>(mg) Total</td><td>31.42</td></tr> </table>	(mg) Total	31.42	<table border="1"> <tr><td>Lead Frame</td><td>31.42</td></tr> </table>	Lead Frame	31.42	<table border="1"> <tr><td>% of Total Weight</td><td>37.57</td></tr> </table>	% of Total Weight	37.57																			
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Iron	7439-89-6	Lead Frame	0.883	0.738	8,829																												
Silver	7440-22-4	Lead Frame	0.716	0.598	7,157																												
Zinc	7440-66-6	Lead Frame	0.047	0.039	470																												
Phosphorous	7723-14-0	Lead Frame	0.031	0.026	310																												
Silver	7440-22-4	Die Attach	0.222	0.186	2,220		<table border="1"> <tr><td>(mg) Total</td><td>0.25</td></tr> </table>	(mg) Total		0.25	<table border="1"> <tr><td>Die Attach</td><td>0.25</td></tr> </table>		Die Attach	0.25	<table border="1"> <tr><td>% of Total Weight</td><td>0.3</td></tr> </table>	% of Total Weight	0.3																
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Epoxy resin	Trade Secret	Die Attach	0.060	0.050	600																												
Metal oxide	Trade Secret	Die Attach	0.009	0.008	90																												
Gamma-butyrolactone	96-48-0	Die Attach	0.009	0.008	90																												
Silicon	7440-21-3	Chip (Die)	1.760	1.472	17,600																												
Gold	7440-57-5	Wire Bond	0.600	0.502	6,000	<table border="1"> <tr><td>(mg) Total</td><td>1.47</td></tr> </table>		(mg) Total	1.47	<table border="1"> <tr><td>Chip (Die)</td><td>1.47</td></tr> </table>		Chip (Die)	1.47	<table border="1"> <tr><td>% of Total Weight</td><td>1.76</td></tr> </table>		% of Total Weight	1.76																
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Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	1.770	1.480	17,700																												
TOTALS:			100.000	83.620	1,000,000																												
0.0836 g Total Mass																																	
<p>This semiconductor device and its homogenous materials comply with EU Directives: 2002/95/EC (27 January 2003) & Directive 2011/65/EU (08 June 2011) and 2015/863/EU (31 March 2015) and 2002/53/EC (End-of-Life Vehicles (ELV) without exemption (zero)</p> <p>Compliance with the above EU Directives has been verified via internal design controls, supplier declarations, and /or analytical test data.</p> <p>If a chemical substance is absent from the list above, the chemical substance is NOT an intentional ingredient in the semiconductor device and, to the best of Microchip Technology Incorporated's knowledge and belief as of the date of this document, there is no credible reason to believe that the unavoidable impurity concentration of the chemical substance, if any, is not below the threshold of regulatory concern for any regulatory scheme world-wide.</p> <p>Molding compounds used by Microchip meet the UL94 V0 flammability standard for plastics. You can access the UL IQTM family of databases to obtain a test report at http://ul.com/global/eng/pages/offerings/industries/chemicals/plastics/</p> <p>The protective "tubes" in which the specific product is shipped are made from polyvinyl chloride (PVC) plastic. "Window envelopes" used to hold the packing slip on the outer box and certain "reels" may be made from PVC plastic.</p> <p>Microchip Technology Incorporated believes the information in this form concerning substances restricted by RoHS in Microchip Technology Incorporated's semiconductor devices in their original packing materials is true and correct to the best of its knowledge and belief, as of the date listed in this form. Microchip Technology Incorporated cannot guarantee the completeness and accuracy of data in this form because it has been compiled based on the ranges provided in Material Safety Data Sheets provided by raw material suppliers. Supplier information is often protected from disclosure as trade secrets and some information may not have been provided by subcontract assemblers and raw material suppliers. Information is provided only as estimates of the average weight of these parts and the average weight of anticipated significant toxic metals components. These estimates do not include trace levels of dopants, metals, and non-metal materials contained within silicon devices (silicon IC) in the finished parts.</p> <p>Microchip Technology Incorporated does not provide any warranty, express or implied, with respect to the information provided in this declaration. The exclusive, limited product warranties provided by Microchip Technology Incorporated and its subsidiaries are contained in Microchip's standard terms and conditions of sale. These are provided in Microchip's quotations, sales order acknowledgement, and invoices.</p> <p>Microchip disclaims any duty to notify users of updates or changes to Material Content Declarations and shall not be liable for any damages, direct or indirect, consequential or otherwise, suffered by users or third parties as a result of the users' reliance on the information in Material Content Declarations (MCD) or independent third party test reports (SGS) or of this Certificate of Compliance for semiconductor products.</p> <p>Assembled package referenced above is EU REACH compliant based on the latest SVHC candidate list of ECHA which can be found at http://echa.europa.eu/web/guest/candidate-list-table</p>																																	
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