



Semiconductor Device Type: SYX 100 WFBGA 8x8x0.8mm SAC				Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)			J-STD-609A Product Marking and/or Pkg. Labeling e8																																										
Basic Substance	CAS Number	Contained in Sub-Component	% Total Weight	mg/part	ppm	41.67 (mg) Total			40.65																																											
Silica(Amorphous) A	60676-86-0	Mold Compound	28.609	29.325	286,095	<table border="1"> <tr> <td>Silica(Amorphous) A</td> <td>60676-86-0</td> <td>70.38</td> </tr> <tr> <td>Silica(Amorphous) B</td> <td>7631-86-9</td> <td>10.82</td> </tr> <tr> <td>Epoxy Resin</td> <td>Trade Secret</td> <td>9.41</td> </tr> <tr> <td>Phenol Resin</td> <td>9003-35-4</td> <td>4.27</td> </tr> <tr> <td>Aluminium and its compounds</td> <td>Trade Secret</td> <td>4.27</td> </tr> <tr> <td>Carbon Black</td> <td>1333-86-4</td> <td>0.85</td> </tr> <tr> <td colspan="2">Total</td> <td>100.00</td> </tr> </table>	Silica(Amorphous) A	60676-86-0	70.38	Silica(Amorphous) B	7631-86-9	10.82	Epoxy Resin	Trade Secret	9.41	Phenol Resin	9003-35-4	4.27	Aluminium and its compounds	Trade Secret	4.27	Carbon Black	1333-86-4	0.85	Total		100.00	<table border="1"> <tr> <td>Mold Compound</td> <td></td> <td></td> </tr> <tr> <td>% of Total Weight</td> <td></td> <td></td> </tr> </table>	Mold Compound			% of Total Weight																				
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Silica(Amorphous) B	7631-86-9	Mold Compound	4.398	4.508	43,983																																															
Epoxy Resin	Trade Secret	Mold Compound	3.825	3.921	38,252																																															
Phenol Resin	9003-35-4	Mold Compound	1.736	1.779	17,358																																															
Aluminium and its compounds	Trade Secret	Mold Compound	1.736	1.779	17,358																																															
Carbon Black	1333-86-4	Mold Compound	0.346	0.354	3,455																																															
Copper	7440-50-8	Lead Frame	12.350	12.658	123,496																																															
Glass fibers	65997-17-3	Lead Frame	7.362	7.546	73,616																																															
TOTALS: 100.000 102.500 1,000,000						35.26 (mg) Total			34.40																																											
Phenol, polymer	9003-36-5	Lead Frame	7.362	7.546	73,616	<table border="1"> <tr> <td>Copper</td> <td>7440-50-8</td> <td>35.90</td> </tr> <tr> <td>Glass fibers</td> <td>65997-17-3</td> <td>21.40</td> </tr> <tr> <td>Phenol, polymer</td> <td>9003-36-5</td> <td>21.40</td> </tr> <tr> <td>Silica, chemically prepared</td> <td>7631-86-9</td> <td>8.00</td> </tr> <tr> <td>Nickel</td> <td>7440-02-0</td> <td>3.90</td> </tr> <tr> <td>Barite</td> <td>7727-43-7</td> <td>2.50</td> </tr> <tr> <td>Magnesium silicate</td> <td>14807-96-6</td> <td>2.00</td> </tr> <tr> <td>Araldite GY 250</td> <td>25068-38-6</td> <td>2.00</td> </tr> <tr> <td>(2-Methoxymethyl)ethoxy)propanol</td> <td>34590-94-8</td> <td>0.80</td> </tr> <tr> <td>Misc. system</td> <td></td> <td>1.50</td> </tr> <tr> <td>Aluminium-hydroxide-oxide</td> <td>24623-77-6</td> <td>0.50</td> </tr> <tr> <td>Gold</td> <td>7440-57-5</td> <td>0.10</td> </tr> <tr> <td colspan="2">Total</td> <td>100.00</td> </tr> </table>	Copper	7440-50-8	35.90	Glass fibers	65997-17-3	21.40	Phenol, polymer	9003-36-5	21.40	Silica, chemically prepared	7631-86-9	8.00	Nickel	7440-02-0	3.90	Barite	7727-43-7	2.50	Magnesium silicate	14807-96-6	2.00	Araldite GY 250	25068-38-6	2.00	(2-Methoxymethyl)ethoxy)propanol	34590-94-8	0.80	Misc. system		1.50	Aluminium-hydroxide-oxide	24623-77-6	0.50	Gold	7440-57-5	0.10	Total		100.00	<table border="1"> <tr> <td>Lead Frame</td> <td></td> <td></td> </tr> <tr> <td>% of Total Weight</td> <td></td> <td></td> </tr> </table>	Lead Frame			% of Total Weight		
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Silica, chemically prepared	7631-86-9	Lead Frame	2.752	2.821	27,520																																															
Nickel	7440-02-0	Lead Frame	1.342	1.375	13,416																																															
Barite	7727-43-7	Lead Frame	0.860	0.882	8,600																																															
Magnesium silicate	14807-96-6	Lead Frame	0.688	0.705	6,880																																															
Araldite GY 250	25068-38-6	Lead Frame	0.688	0.705	6,880																																															
(2-Methoxymethyl)ethoxy)propanol	34590-94-8	Lead Frame	0.275	0.282	2,752																																															
Misc. system		Lead Frame	0.516	0.529	5,160																																															
Aluminium-hydroxide-oxide	24623-77-6	Lead Frame	0.172	0.176	1,720																																															
Gold	7440-57-5	Lead Frame	0.034	0.035	344																																															
(Metha)Acrylic Copolymer	Trade Secret	Die Attach	0.680	0.697	6,800																																															
Epoxy Resin	Trade Secret	Die Attach	0.140	0.144	1,400																																															
Phenol Resin	Trade Secret	Die Attach	0.140	0.144	1,400																																															
SiO2 Filler	Trade Secret	Die Attach	0.040	0.041	400																																															
Silicon	7440-21-3	Chip (Die)	7.500	7.688	75,000																																															
Copper	7440-50-8	Wire Bond Copper palladium coated (CuPdAu)	0.196	0.201	1,960																																															
Palladium	7440-05-3	Wire Bond Copper palladium coated (CuPdAu)	0.004	0.004	40																																															
Tin	7440-31-5	Plating on external leads (pins) (SAC105)	16.006	16.406	160,063																																															
Silver	7440-22-4	Plating on external leads (pins) (SAC105)	0.163	0.167	1,625																																															
Copper	7440-50-8	Plating on external leads (pins) (SAC105)	0.081	0.083	813																																															
TOTALS: 100.000 102.500 1,000,000						1.03 (mg) Total			1.00																																											
0.1025 g Total Mass						7.69 (mg) Total			7.50																																											
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<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 2000/53/EC and 2016/774/EU (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>						0.21 (mg) Total			0.20																																											
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