




Semiconductor Device Type: (AGX) 005 CSP SAC			Pattern (Graphic)			Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)			JEDEC 97 Product Marking and/or Pkg. Labeling e1															
																								
Basic Substance	CAS Number	Contained in Sub-Component	% Total Weight	mg/part	ppm	0.11 (mg) Total	Backside Coating	% of Total Weight	7.35															
Silica	Proprietary	Backside Coating	4.153	0.060	41,528	<table border="1"> <tr><td>Silica</td><td>Proprietary</td><td>56.5</td></tr> <tr><td>Epoxy Resin</td><td>Proprietary</td><td>21.1</td></tr> <tr><td>Acrylic Resin</td><td>Proprietary</td><td>21.1</td></tr> <tr><td>Carbon Black</td><td>Proprietary</td><td>1.3</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Silica	Proprietary	56.5	Epoxy Resin	Proprietary	21.1	Acrylic Resin	Proprietary	21.1	Carbon Black	Proprietary	1.3	Total		100.00			
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Total		100.00																						
Epoxy Resin	Proprietary	Backside Coating	1.551	0.022	15,509																			
Acrylic Resin	Proprietary	Backside Coating	1.551	0.022	15,509																			
Carbon Black	Proprietary	Backside Coating	0.096	0.001	956																			
Organosilicate polymer	Trade Secret	PBO Layer	1.230	0.018	12,300																			
Copper	7440-50-8	Under Bump Metal	0.212	0.003	2,120	0.02 (mg) Total	PBO Layer	% of Total Weight	1.23															
Aluminum	7429-90-5	Under Bump Metal	0.077	0.001	774	<table border="1"> <tr><td>Organosilicate polymer</td><td>Trade Secret</td><td>100.00</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Organosilicate polymer	Trade Secret	100.00	Total		100.00												
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Nickel	7440-02-0	Under Bump Metal	0.042	0.001	421																			
Vanadium	7440-62-2	Under Bump Metal	0.028	0.000	284	0.01 (mg) Total	Under Bump Metal	% of Total Weight	0.36															
Silicon	7440-21-3	Chip (Die)	76.390	1.100	763,900	<table border="1"> <tr><td>Copper</td><td>7440-50-8</td><td>58.90</td></tr> <tr><td>Aluminum</td><td>7429-90-5</td><td>21.50</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>11.70</td></tr> <tr><td>Vanadium</td><td>7440-62-2</td><td>7.90</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Copper	7440-50-8	58.90	Aluminum	7429-90-5	21.50	Nickel	7440-02-0	11.70	Vanadium	7440-62-2	7.90	Total		100.00			
Copper	7440-50-8	58.90																						
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Nickel	7440-02-0	11.70																						
Vanadium	7440-62-2	7.90																						
Total		100.00																						
Aluminum	7429-60-5	Redistribution Layer	0.152	0.002	1,522																			
Titanium	7440-32-6	Redistribution Layer	0.068	0.001	678																			
Tin	7440-31-5	Solder Ball	14.233	0.205	142,333																			
Silver	7440-22-4	Solder Ball	0.145	0.002	1,445																			
Copper	7440-50-8	Solder Ball	0.072	0.001	723	1.10 (mg) Total	Chip (Die)	% of Total Weight	76.39															
0.00144 g Total Mass			TOTALS:	100.000	1.440	1,000,000	<table border="1"> <tr><td>Doped Silicon</td><td>7440-21-3</td><td>100</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Doped Silicon	7440-21-3	100	Total		100.00											
Doped Silicon	7440-21-3	100																						
Total		100.00																						
						0.00 (mg) Total	Redistribution Layer	% of Total Weight	0.22															
						<table border="1"> <tr><td>Aluminum</td><td>7429-60-5</td><td>69.20</td></tr> <tr><td>Titanium</td><td>7440-32-6</td><td>30.80</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Aluminum	7429-60-5	69.20	Titanium	7440-32-6	30.80	Total		100.00									
Aluminum	7429-60-5	69.20																						
Titanium	7440-32-6	30.80																						
Total		100.00																						
						0.21 (mg) Total	Solder Ball	% of Total Weight	14.45															
						<table border="1"> <tr><td>Tin</td><td>7440-31-5</td><td>98.50</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.00</td></tr> <tr><td>Copper</td><td>7440-50-8</td><td>0.50</td></tr> <tr><td>Total</td><td></td><td>100.00</td></tr> </table>	Tin	7440-31-5	98.50	Silver	7440-22-4	1.00	Copper	7440-50-8	0.50	Total		100.00						
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Total		100.00																						

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)

Compliance with the above EU Directives has been verified via internal design controls, supplier declarations, and /or analytical test data.

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.

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/offering/industries/chemicals/plastics/>

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.

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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>