



 MICROCHIP			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 e1															
Semiconductor Device Type: JHC 081 LBGA 10x10x1.47mm SAC 305																								
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	181.99 (mg) Total	Mold Compound	% of Total Weight	55.57															
Silica Fused	60676-86-0	Mold Compound	49.052	160.644	490,516	<table><tr><td>Silica Fused</td><td>60676-86-0</td><td>88.27</td></tr><tr><td>Epoxy Resin</td><td>Trade Secret</td><td>5.71</td></tr><tr><td>Phenol Resin</td><td>Trade Secret</td><td>5.71</td></tr><tr><td>Carbon Black</td><td>1333-86-4</td><td>0.31</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	Silica Fused	60676-86-0	88.27	Epoxy Resin	Trade Secret	5.71	Phenol Resin	Trade Secret	5.71	Carbon Black	1333-86-4	0.31	Total		100.00			
Silica Fused	60676-86-0	88.27																						
Epoxy Resin	Trade Secret	5.71																						
Phenol Resin	Trade Secret	5.71																						
Carbon Black	1333-86-4	0.31																						
Total		100.00																						
Epoxy Resin	Trade Secret	Mold Compound	3.173	10.392	31,730																			
Phenol Resin	Trade Secret	Mold Compound	3.173	10.392	31,730																			
Carbon Black	1333-86-4	Mold Compound	0.172	0.564	1,723																			
Fiber glass	65997-17-3	Lead Frame	14.348	46.990	143,480																			
Copper	7440-50-8	Lead Frame	11.916	39.024	119,156	<table><tr><td>Fiber glass</td><td>65997-17-3</td><td>49.73</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>41.30</td></tr><tr><td>Epoxy Resin</td><td>Proprietary</td><td>6.24</td></tr><tr><td>Nickel</td><td>7440-02-0</td><td>2.29</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	Fiber glass	65997-17-3	49.73	Copper	7440-50-8	41.30	Epoxy Resin	Proprietary	6.24	Nickel	7440-02-0	2.29	Total		100.00			
Fiber glass	65997-17-3	49.73																						
Copper	7440-50-8	41.30																						
Epoxy Resin	Proprietary	6.24																						
Nickel	7440-02-0	2.29																						
Total		100.00																						
Epoxy Resin	Proprietary	Lead Frame	1.801	5.899	18,012																			
Nickel	7440-02-0	Lead Frame	0.662	2.168	6,620																			
Silver	7440-22-4	Die Attach	1.652	5.410	16,520																			
Silicon	7440-21-3	Die Attach	0.566	1.855	5,664																			
Epoxy Resin	Trade secret	Die Attach	0.142	0.464	1,416	<table><tr><td>Silver</td><td>7440-22-4</td><td>70.00</td></tr><tr><td>Silicon</td><td>7440-21-3</td><td>24.00</td></tr><tr><td>Epoxy Resin</td><td>Trade secret</td><td>6.00</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	Silver	7440-22-4	70.00	Silicon	7440-21-3	24.00	Epoxy Resin	Trade secret	6.00	Total		100.00						
Silver	7440-22-4	70.00																						
Silicon	7440-21-3	24.00																						
Epoxy Resin	Trade secret	6.00																						
Total		100.00																						
Silicon	7440-21-3	Chip (Die)	4.960	16.244	49,600																			
Gold	7440-57-5	Wire Bond	0.120	0.393	1,200																			
Tin	7440-31-5	Plating on external leads (pins) (SAC305)	7.855	25.725	78,551																			
Silver	7440-22-4	Plating on external leads (pins) (SAC305)	0.244	0.800	2,442																			
Copper	7440-50-8	Plating on external leads (pins) (SAC305)	0.041	0.133	407	<table><tr><td>Doped Silicon</td><td>7440-21-3</td><td>100.00</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	Doped Silicon	7440-21-3	100.00	Total		100.00												
Doped Silicon	7440-21-3	100.00																						
Total		100.00																						
TOTALS: 100.000 327.500 1,000,000																								
0.3275 g Total Mass																								
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)																								
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://iq.ul.com/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.																								
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.																								
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.																								
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.																								
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																								

327.50	100.00
--------	--------