



Semiconductor Device Type: JQC 064 LFBGA 9x9x1.72mm SAC305				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 e1																																																															
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	175.69 (mg) Total		Mold Compound	% of Total Weight	56.04																																																															
Silica(Amorphous) A	60676-86-0	Mold Compound	42.198	132.291	421,981	<table border="1"> <tr><td>Silica(Amorphous) A</td><td>60676-86-0</td><td>75.30</td></tr> <tr><td>Silica(Amorphous) B</td><td>7631-86-9</td><td>10.04</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>8.09</td></tr> <tr><td>Phenol Resin</td><td>9003-35-4</td><td>3.01</td></tr> <tr><td>Aluminium and its compounds</td><td>1332-58-7</td><td>3.01</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.55</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>		Silica(Amorphous) A	60676-86-0	75.30	Silica(Amorphous) B	7631-86-9	10.04	Epoxy Resin	Trade Secret	8.09	Phenol Resin	9003-35-4	3.01	Aluminium and its compounds	1332-58-7	3.01	Carbon Black	1333-86-4	0.55	Total			100.00	<table border="1"> <tr><td colspan="3">Aluminium and its compounds</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.55</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>		Aluminium and its compounds			Carbon Black	1333-86-4	0.55	Total			100.00	56.04																															
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Silica(Amorphous) B	7631-86-9	Mold Compound	5.626	17.639	56,264																																																																				
Epoxy Resin	Trade Secret	Mold Compound	4.534	14.213	45,336																																																																				
Phenol Resin	9003-35-4	Mold Compound	1.687	5.288	16,868																																																																				
Aluminium and its compounds	1332-58-7	Mold Compound	1.687	5.288	16,868																																																																				
Carbon Black	1333-86-4	Mold Compound	0.308	0.966	3,082																																																																				
Copper	7440-50-8	Lead Frame	10.993	34.462	109,926	<table border="1"> <tr><td colspan="3">Lead Frame</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>		Lead Frame			Total			100.00	<table border="1"> <tr><td colspan="3">95.99 (mg) Total</td></tr> <tr><td colspan="3">Lead Frame</td><td>% of Total Weight</td></tr> <tr><td colspan="3">30.62</td></tr> </table>		95.99 (mg) Total			Lead Frame			% of Total Weight	30.62			30.62																																														
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Glass fibers	6597-17-3	Lead Frame	6.553	20.543	65,527																																																																				
Phenol, polymer	9003-36-5	Lead Frame	6.553	20.543	65,527	<table border="1"> <tr><td colspan="3">Copper</td><td>7440-50-8</td><td>35.90</td></tr> <tr><td colspan="3">Glass fibers</td><td>6597-17-3</td><td>21.40</td></tr> <tr><td colspan="3">Phenol, polymer</td><td>9003-36-5</td><td>21.40</td></tr> <tr><td colspan="3">Silica, chemically prepared</td><td>7631-86-9</td><td>8.00</td></tr> <tr><td colspan="3">Nickel</td><td>7440-02-0</td><td>3.90</td></tr> <tr><td colspan="3">Barite</td><td>7727-43-7</td><td>2.50</td></tr> <tr><td colspan="3">Magnesium silicate</td><td>14807-96-6</td><td>2.00</td></tr> <tr><td colspan="3">Araldite GY 250</td><td>25068-38-6</td><td>2.00</td></tr> <tr><td colspan="3">(2-Methoxymethylethoxy)propanol</td><td>34590-94-8</td><td>1.80</td></tr> <tr><td colspan="3">Bisphenol A</td><td>80-05-7</td><td>1.50</td></tr> <tr><td colspan="3">Aluminium-hydroxide-oxide</td><td>24623-77-6</td><td>0.50</td></tr> <tr><td colspan="3">Gold</td><td>7440-57-5</td><td>0.10</td></tr> <tr><td colspan="3">Total</td><td colspan="2">100.00</td></tr> </table>		Copper			7440-50-8	35.90	Glass fibers			6597-17-3	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-Methoxymethylethoxy)propanol			34590-94-8	1.80	Bisphenol A			80-05-7	1.50	Aluminium-hydroxide-oxide			24623-77-6	0.50	Gold			7440-57-5	0.10	Total			100.00		0.75
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Silica, chemically prepared	7631-86-9	Lead Frame	2.450	7.679	24,496																																																																				
Nickel	7440-02-0	Lead Frame	1.194	3.744	11,942																																																																				
Barite	7727-43-7	Lead Frame	0.766	2.400	7,655																																																																				
Magnesium silicate	14807-96-6	Lead Frame	0.612	1.920	6,124																																																																				
Araldite GY 250	25068-38-6	Lead Frame	0.612	1.920	6,124																																																																				
(2-Methoxymethylethoxy)propanol	34590-94-8	Lead Frame	0.245	0.768	2,450																																																																				
Bisphenol A	80-05-7	Lead Frame	0.459	1.440	4,593																																																																				
Aluminium-hydroxide-oxide	24623-77-6	Lead Frame	0.153	0.480	1,531																																																																				
Gold	7440-57-5	Lead Frame	0.031	0.096	306																																																																				
Silicon	7440-21-3	Die Attach	0.525	1.646	5,250	<table border="1"> <tr><td colspan="3">Die Attach</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">0.75</td></tr> </table>		Die Attach			Total			% of Total Weight	0.75			0.75																																																							
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Silver	7440-22-4	Die Attach	0.180	0.564	1,800																																																																				
Epoxy Resin	Trade secret	Die Attach	0.045	0.141	450	<table border="1"> <tr><td colspan="3">Die Attach</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">0.75</td></tr> </table>		Die Attach			Total			% of Total Weight	0.75			0.75																																																							
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Silicon	7440-21-3	Chip (Die)	5.190	16.271	51,900																																																																				
Copper (Cu)	7440-50-8	Wire Bond	0.175	0.549	1,751																																																																				
Palladium	7440-05-3	Wire Bond	0.005	0.015	49	<table border="1"> <tr><td colspan="3">Wire Bond</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">0.75</td></tr> </table>		Wire Bond			Total			% of Total Weight	0.75			0.75																																																							
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Tin	7440-31-5	Plating on external leads (pins)	6.967	21.842	69,673																																																																				
Silver	7440-22-4	Plating on external leads (pins)	0.217	0.679	2,166																																																																				
Copper	7440-50-8	Plating on external leads (pins)	0.036	0.113	361	<table border="1"> <tr><td colspan="3">Chip (Die)</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">5.19</td></tr> </table>		Chip (Die)			Total			% of Total Weight	5.19			5.19																																																							
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0.3135 g Total Mass						<table border="1"> <tr><td colspan="3">Chip (Die)</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">5.19</td></tr> </table>		Chip (Die)			Total			% of Total Weight	5.19			5.19																																																							
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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.						<table border="1"> <tr><td colspan="3">Wire Bond</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">0.18</td></tr> </table>		Wire Bond			Total			% of Total Weight	0.18			0.18																																																							
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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/						<table border="1"> <tr><td colspan="3">Wire Bond</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">0.18</td></tr> </table>		Wire Bond			Total			% of Total Weight	0.18			0.18																																																							
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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.						<table border="1"> <tr><td colspan="3">Chip (Die)</td></tr> <tr><td colspan="3">Total</td><td>% of Total Weight</td></tr> <tr><td colspan="3">7.22</td></tr> </table>		Chip (Die)			Total			% of Total Weight	7.22			7.22																																																							
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