



Semiconductor Device Type: 004 UDFN 1.0x1.0 NiPdAu			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 e4																								
Basic Substance	CAS Number	Contained In Sub-Component	% Total Weight	mg/part	ppm	5.06 (mg) Total	Mold Compound	% of Total Weight	58.86																								
Silica, fused	60676-86-0	Mold Compound	52.974	4.556	529,740	<table border="1"> <tr><td>Silica, fused</td><td>60676-86-0</td><td>90.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>4.85</td></tr> <tr><td>Phenolic Resin</td><td>Trade Secret</td><td>4.85</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.30</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td></tr> </table>	Silica, fused	60676-86-0	90.00	Epoxy Resin	Trade Secret	4.85	Phenolic Resin	Trade Secret	4.85	Carbon Black	1333-86-4	0.30	<b>Total</b>			<b>100.00</b>											
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Epoxy Resin	Trade Secret	Mold Compound	2.855	0.246	28,547																												
Phenolic Resin	Trade Secret	Mold Compound	2.855	0.246	28,547																												
Carbon Black	1333-86-4	Mold Compound	0.177	0.015	1,766																												
Copper	7440-50-8	Lead Frame	37.262	3.205	372,620	<table border="1"> <tr><td colspan="3"><b>3.29 (mg) Total</b></td><td><b>Lead Frame</b></td><td><b>% of Total Weight</b></td><td><b>38.24</b></td></tr> <tr><td>Copper</td><td>7440-50-8</td><td>97.44</td></tr> <tr><td>Iron</td><td>7439-89-6</td><td>2.35</td></tr> <tr><td>Zinc</td><td>7440-66-6</td><td>0.13</td></tr> <tr><td>Phosphorous</td><td>7723-14-0</td><td>0.08</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td><td></td><td></td></tr> </table>	<b>3.29 (mg) Total</b>			<b>Lead Frame</b>	<b>% of Total Weight</b>	<b>38.24</b>	Copper	7440-50-8	97.44	Iron	7439-89-6	2.35	Zinc	7440-66-6	0.13	Phosphorous	7723-14-0	0.08	<b>Total</b>			<b>100.00</b>					
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Iron	7439-89-6	Lead Frame	0.899	0.077	8,986																												
Zinc	7440-66-6	Lead Frame	0.048	0.004	478																												
Phosphorous	7723-14-0	Lead Frame	0.032	0.003	315																												
Silver	7440-22-4	Die Attach	0.177	0.015	1,771	<table border="1"> <tr><td colspan="3"><b>0.02 (mg) Total</b></td><td><b>Die Attach</b></td><td><b>% of Total Weight</b></td><td><b>0.24</b></td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>73.80</td></tr> <tr><td>Epoxy Resin</td><td>9003-36-5</td><td>26.20</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td><td></td><td></td></tr> </table>	<b>0.02 (mg) Total</b>			<b>Die Attach</b>	<b>% of Total Weight</b>	<b>0.24</b>	Silver	7440-22-4	73.80	Epoxy Resin	9003-36-5	26.20	<b>Total</b>			<b>100.00</b>											
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Epoxy Resin	9003-36-5	Die Attach	0.063	0.005	629																												
Silicon	7440-21-3	Chip (Die)	1.110	0.095	11,100	<table border="1"> <tr><td colspan="3"><b>0.10 Total (mg)</b></td><td><b>Chip (Die)</b></td><td><b>% of Total Weight</b></td><td><b>1.11</b></td></tr> <tr><td>Doped Silicon</td><td>7440-21-3</td><td>100.00</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td><td></td><td></td></tr> </table>	<b>0.10 Total (mg)</b>			<b>Chip (Die)</b>	<b>% of Total Weight</b>	<b>1.11</b>	Doped Silicon	7440-21-3	100.00	<b>Total</b>			<b>100.00</b>														
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Doped Silicon	7440-21-3	100.00																															
<b>Total</b>			<b>100.00</b>																														
Gold	7440-57-5	Wire Bond	0.170	0.015	1,700																												
Nickel	7440-02-0	Plating on external leads (pins)	1.300	0.112	13,002	<table border="1"> <tr><td colspan="3"><b>0.01 (mg) Total</b></td><td><b>Wire Bond</b></td><td><b>% of Total Weight</b></td><td><b>0.17</b></td></tr> <tr><td>Gold</td><td>7440-57-5</td><td>100.00</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td><td></td><td></td></tr> </table>	<b>0.01 (mg) Total</b>			<b>Wire Bond</b>	<b>% of Total Weight</b>	<b>0.17</b>	Gold	7440-57-5	100.00	<b>Total</b>			<b>100.00</b>														
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Gold	7440-57-5	100.00																															
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Palladium	7440-05-3	Plating on external leads (pins)	0.050	0.004	498																												
Gold	7440-57-5	Plating on external leads (pins)	0.030	0.003	299	<table border="1"> <tr><td colspan="3"><b>0.12 (mg) Total</b></td><td><b>Plating on external leads (pins)</b></td><td><b>% of Total Weight</b></td><td><b>1.38</b></td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>94.22</td></tr> <tr><td>Palladium</td><td>7440-05-3</td><td>3.61</td></tr> <tr><td>Gold</td><td>7440-57-5</td><td>2.17</td></tr> <tr><td colspan="3"><b>Total</b></td><td><b>100.00</b></td><td></td><td></td></tr> </table>	<b>0.12 (mg) Total</b>			<b>Plating on external leads (pins)</b>	<b>% of Total Weight</b>	<b>1.38</b>	Nickel	7440-02-0	94.22	Palladium	7440-05-3	3.61	Gold	7440-57-5	2.17	<b>Total</b>			<b>100.00</b>								
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<b>Total</b>			<b>100.00</b>																														
<b>TOTALS:</b>			<b>100.000</b>	<b>8.600</b>	<b>1,000,000</b>																												
<b>0.0086 g Total Mass</b>						<b>8.60</b>			<b>100.00</b>																								

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/offerings/industries/chemicals/plastics/>

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