



Semiconductor Device Type: EKE / TV (W9X) 048 TSOP 12x20mm Matte Tin			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 e3																			
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	377.31 (mg) Total	Mold Compound	% of Total Weight	66.84																			
Silica, vitreous (or fused)	60676-86-0	Mold Compound	56.814	320.715	568,140	<table border="1"> <tr><td>Silica, vitreous (or fused)</td><td>60676-86-0</td><td>85.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>8.70</td></tr> <tr><td>Phenolic Resin</td><td>Trade Secret</td><td>6.00</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.30</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>	Silica, vitreous (or fused)	60676-86-0	85.00	Epoxy Resin	Trade Secret	8.70	Phenolic Resin	Trade Secret	6.00	Carbon Black	1333-86-4	0.30	Total			100.00						
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Epoxy Resin	Trade Secret	Mold Compound	5.815	32.826	58,151																							
Phenolic Resin	Trade Secret	Mold Compound	4.010	22.639	40,104																							
Carbon Black	1333-86-4	Mold Compound	0.201	1.132	2,005																							
Copper	7440-50-8	Lead Frame	26.982	152.312	269,818																							
Nickel	7440-02-0	Lead Frame	0.720	4.062	7,196	159.92 (mg) Total	Lead Frame	% of Total Weight	28.33																			
Silicon	7440-21-3	Lead Frame	0.127	0.720	1,275	<table border="1"> <tr><td>Copper</td><td>7440-50-8</td><td>95.24</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>2.54</td></tr> <tr><td>Silicon</td><td>7440-21-3</td><td>0.45</td></tr> <tr><td>Magnesium</td><td>7439-95-4</td><td>0.10</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.67</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>	Copper	7440-50-8	95.24	Nickel	7440-02-0	2.54	Silicon	7440-21-3	0.45	Magnesium	7439-95-4	0.10	Silver	7440-22-4	1.67	Total			100.00			
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Total			100.00																									
Magnesium	7439-95-4	Lead Frame	0.028	0.160	283																							
Silver	7440-22-4	Lead Frame	0.473	2.669	4,728																							
Silver	7440-22-4	Die Attach	0.304	1.716	3,040																							
Epoxy Resin	Trade Secret	Die Attach	0.065	0.365	646																							
Copper	7440-50-8	Die Attach	0.011	0.064	114	2.15 (mg) Total	Die Attach	% of Total Weight	0.38																			
Silicon	7440-21-3	Chip (Die)	1.380	7.790	13,800	<table border="1"> <tr><td>Silver</td><td>7440-22-4</td><td>80.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>17.00</td></tr> <tr><td>Copper</td><td>7440-50-8</td><td>3.00</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>	Silver	7440-22-4	80.00	Epoxy Resin	Trade Secret	17.00	Copper	7440-50-8	3.00	Total			100.00									
Silver	7440-22-4	80.00																										
Epoxy Resin	Trade Secret	17.00																										
Copper	7440-50-8	3.00																										
Total			100.00																									
Doped Gold	7440-57-5	Wire Bond	0.320	1.806	3,200																							
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	2.750	15.524	27,500																							
0.5645 g Total Mass			TOTALS:	100.000	564.500	1,000,000																						
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)						7.79 (mg) Total	Chip (Die)	% of Total Weight	1.38																			
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>Silicon</td><td>7440-21-3</td><td>100.00</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>				Silicon	7440-21-3	100.00	Total			100.00												
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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.						1.81 (mg) Total	Wire Bond	% of Total Weight	0.32																			
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/						<table border="1"> <tr><td>Doped Gold</td><td>7440-57-5</td><td>100.00</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>				Doped Gold	7440-57-5	100.00	Total			100.00												
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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.						15.52 (mg) Total	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	2.75																			
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>Tin</td><td>7440-31-5</td><td>100.00</td></tr> <tr><td colspan="3">Total</td><td>100.00</td></tr> </table>				Tin	7440-31-5	100.00	Total			100.00												
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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																												