



Semiconductor Device Type: NU / ZA (Z2X) TQFP 128 14x14x1mm Matte Tin			Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials			JEDEC 97 Product Marking and/or Pkg. Labeling e3		
Basic Substance	CAS Number	"Contained in" Sub-Component	% Total Weight	mg/part	ppm	(mg) Total	Mold Compound	% of Total Weight			
Silica Fused	60676-86-0	Mold Compound	58.982	328.825	589.820	372.52	Silica Fused	60676-86-0	88.27		
Epoxy Resin	Trade Secret	Mold Compound	4.170	23.245	41.696		Epoxy Resin	Trade Secret	6.24		
Phenol Resin	Trade Secret	Mold Compound	3.468	19.334	34.680		Phenol Resin	Trade Secret	5.19		
Carbon Black	1333-86-4	Mold Compound	0.200	1.118	2.005		Carbon Black	1333-86-4	0.30		
			Total				100.00				
Copper	7440-50-8	Lead Frame	25.658	143.043	256.579	150.19	(mg) Total		Lead Frame	% of Total Weight	26.94
Nickel	7440-02-0	Lead Frame	0.684	3.815	6.843		Copper	7440-50-8	95.24		
Silver	7440-22-4	Lead Frame	0.450	2.507	4.496		Nickel	7440-02-0	2.54		
Silicon	7440-21-3	Lead Frame	0.121	0.676	1.212		Silver	7440-22-4	1.67		
Magnesium	7439-95-4	Lead Frame	0.027	0.150	269		Silicon	7440-21-3	0.45		
Silver	7440-22-4	Die Attach	0.053	0.293	525			Magnesium	7439-95-4	0.10	
Epoxy Resin	Trade secret	Die Attach	0.007	0.039	70	Total			100.00		
Diluent	Trade secret	Die Attach	0.007	0.039	70	0.39	(mg) Total		Die Attach	% of Total Weight	0.07
Hardener	Trade secret	Die Attach	0.004	0.020	35		Silver	7440-22-4	75.00		
Silicon	7440-21-3	Chip (Die)	4.760	26.537	47.600		Epoxy Resin	Trade secret	10.00		
Copper	7440-50-8	Wire Bond Copper palladium coated (CuPd)	0.246	1.369	2,456		Diluent	Trade secret	10.00		
Palladium	7440-05-3	Wire Bond Copper palladium coated (CuPd)	0.004	0.024	44		Hardener	Trade secret	5.00		
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	1.160	6.467	11,600	Total			100.00		
TOTALS:			100.000	557.500	1,000,000	Total (mg)		Chip (Die)	% of Total Weight	4.76	
0.5575 g Total Mass						Total (mg)		Chip (Die)	% of Total Weight	4.76	
<p>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)</p> <p>Compliance with the above EU Directives has been verified via internal design controls, supplier declarations, and/or analytical test data.</p> <p>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.</p> <p>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/</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>											
						Total		100.00			
						Total (mg)		Wire Bond Copper palladium coated (CuPd)	% of Total Weight	0.25	
						Copper		7440-50-8	98.25		
						Palladium		7440-05-3	1.75		
						Total			100.00		
						(mg) Total		Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	1.16	
						Tin		7440-31-5	100.00		
						Total			100.00		
						557.500				100.000	