



 MICROCHIP			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	
Semiconductor Device Type: ST (D4X) 014 TSSOP 4.4mm Matte Tin										
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	28.10	(mg) Total	Mold Compound	% of Total Weight	46.84
Silica, vitreous (or fused)	60676-86-0	Mold Compound	39.814	23.888	398,140		Silica, vitreous (or fused)	60676-86-0	85.00	
Epoxy Resin	Trade Secret	Mold Compound	4.075	2.445	40,751		Epoxy Resin	Trade Secret	8.70	
Phenolic Resin	Trade Secret	Mold Compound	2.810	1.686	28,104		Phenolic Resin	Trade Secret	6.00	
Carbon Black	1333-86-4	Mold Compound	0.141	0.084	1,405		Carbon Black	1333-86-4	0.30	
Copper	7440-50-8	Lead Frame	43.249	25.949	432,489		Total			100.00
Nickel	7440-02-0	Lead Frame	1.153	0.692	11,534	27.25	(mg) Total	Lead Frame	% of Total Weight	45.41
Silver	7440-22-4	Lead Frame	0.758	0.455	7,579		Copper	7440-50-8	95.24	
Silicon	7440-21-3	Lead Frame	0.204	0.123	2,043		Nickel	7440-02-0	2.54	
Magnesium	7439-95-4	Lead Frame	0.045	0.027	454		Silver	7440-22-4	1.67	
Silver	7440-22-4	Die Attach	1.214	0.728	12,136		Silicon	7440-21-3	0.45	
Epoxy resin	Trade Secret	Die Attach	0.328	0.197	3,280		Magnesium	7439-95-4	0.10	
Metal oxide	Trade Secret	Die Attach	0.049	0.030	492		Total			100.00
Gamma-butyrolactone	96-48-0	Die Attach	0.049	0.030	492	0.98	(mg) Total	Die Attach	% of Total Weight	1.64
Silicon	7440-21-3	Chip (Die)	3.340	2.004	33,400		Silver	7440-22-4	74.00	
Gold	7440-57-5	Wire Bond	0.490	0.294	4,900		Epoxy resin	Trade Secret	20.00	
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	2.280	1.368	22,800		Metal oxide	Trade Secret	3.00	
TOTALS:			100.000	60.000	1,000,000		Gamma-butyrolactone	96-48-0	3.00	
0.0600 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 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/										
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.										
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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										
						60.000	100.000			