



 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: TO / ZB / BX (A2X) 003 TO-92 Matte Tin												
Basic Substance		CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	114.11	(mg) Total	Mold Compound	% of Total Weight	56.77	
Silica, vitreous		60676-86-0	Mold Compound	48.255	96.992	482,545		Silica, vitreous	60676-86-0	85.00		
Epoxy Resin (No bromine, No diantimony trioxide)		Trade Secret	Mold Compound	3.477	6.989	34,772		Epoxy Resin	Trade Secret	6.13		
Phenolic Resin (No Br / CL SbO3, No diantimony trioxide)		Trade Secret	Mold Compound	3.477	6.989	34,772		Phenolic Resin	Trade Secret	6.13		
Epoxy, Cresol Novolac		29690-82-2	Mold Compound	1.391	2.796	13,909		Epoxy, Cresol Novolac	29690-82-2	2.45		
Carbon Black		1333-86-4	Mold Compound	0.170	0.342	1,703		Carbon Black	1333-86-4	0.30		
Copper		7440-50-8	Lead Frame	38.024	76.428	380,239		Total				100.00
Iron		7439-89-6	Lead Frame	0.935	1.880	9,353	80.00	(mg) Total	Lead Frame	% of Total Weight	39.8	
Silver		7440-22-4	Lead Frame	0.758	1.524	7,582		Copper	7440-50-8	95.54		
Zinc		7440-66-6	Lead Frame	0.050	0.100	498		Iron	7439-89-6	2.35		
Phosphorous		7723-14-0	Lead Frame	0.033	0.066	328		Silver	7440-22-4	1.91		
Silver		7440-22-4	Die Attach	0.066	0.134	664		Zinc	7440-66-6	0.13		
Epoxy Resin		9003-36-5	Die Attach	0.017	0.034	169		Phosphorous	7723-14-0	0.08		
t-Butyl phenyl glycidyl ether		3101-60-8	Die Attach	0.006	0.011	57	Total			100.00		
Phenolic hardener		92-88-6	Die Attach	0.000	0.001	3	0.18	(mg) Total	Die Attach	% of Total Weight		0.09
Butyl cellosolve acetate		112-07-2	Die Attach	0.001	0.001	7		Silver	7440-22-4	73.80		
Silicon		7440-21-3	Chip (Die)	0.800	1.608	8,000		Epoxy Resin	9003-36-5	18.80		
Gold		7440-57-5	Wire Bond	0.040	0.080	400		t-Butyl phenyl glycidyl ether	3101-60-8	6.30		
Tin		7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	2.500	5.025	25,000		Phenolic hardener	92-88-6	0.30		
								Butyl cellosolve acetate	112-07-2	0.80		
TOTALS:				100.000	201.000	1,000,000	Total			100.00		
0.2010 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												
							201.000					
								100.000				