



Semiconductor Device Type: ML (G4X) 020 QFN 4x4x0.9mm 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	51.79	
Silica, fused				60676-86-0	Mold Compound	46.611	20.089	466,110	Silica, fused	60676-86-0	90.00		
Epoxy Resin				Trade Secret	Mold Compound	2.512	1.083	25,118	Epoxy Resin	Trade Secret	4.85		
Phenolic Resin				Trade Secret	Mold Compound	2.512	1.083	25,118	Phenolic Resin	Trade Secret	4.85		
Carbon Black				1333-86-4	Mold Compound	0.155	0.067	1,554	Carbon Black	1333-86-4	0.30		
Copper				7440-50-8	Lead Frame	35.702	15.388	357,024	Total 100.00				
Iron				7439-89-6	Lead Frame	0.878	0.379	8,782	16.11	(mg) Total	Lead Frame	% of Total Weight	37.37
Silver				7440-22-4	Lead Frame	0.712	0.307	7,119	Copper	7440-50-8	95.54		
Zinc				7440-66-6	Lead Frame	0.047	0.020	467	Iron	7439-89-6	2.35		
Phosphorous				7723-14-0	Lead Frame	0.031	0.013	308	Silver	7440-22-4	1.91		
Silver				7440-22-4	Die Attach	1.053	0.454	10,530	Zinc	7440-66-6	0.13		
Acrylate resins Proprietary				Trade Secret	Die Attach	0.243	0.105	2,430	Phosphorous	7723-14-0	0.08		
Treated silica				Trade Secret	Die Attach	0.027	0.012	270	Total 100.00				
Heterocyclic organic compound				Trade Secret	Die Attach	0.027	0.012	270	0.58	(mg) Total	Die Attach	% of Total Weight	1.35
Silicon				7440-21-3	Chip (Die)	4.410	1.901	44,100	Silver	7440-22-4	78.00		
Copper				7440-50-8	Wire Bond Copper Palladium coated (CuPd)	0.629	0.271	6,288	Acrylate resins Proprietary	Trade Secret	18.00		
Palladium				7440-05-3	Wire Bond Copper Palladium coated (CuPd)	0.011	0.005	112	Treated silica	Trade Secret	2.00		
Tin				7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	4.440	1.914	44,400	Heterocyclic organic compound	Trade Secret	2.00		
TOTALS:						100.000	43.100	1,000,000	Total 100.00				
0.0431 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/offering/industries/chemicals/plastics/													
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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													
1.90									Total (mg)	Chip (Die)	% of Total Weight	4.41	
									Doped Silicon	7440-21-3	100.00		
									Total 100.00				
0.28									(mg) Total	Wire Bond Copper Palladium coated (CuPd)	% of Total Weight	0.64	
									Copper	7440-50-8	98.25		
									Palladium	7440-05-3	1.75		
									Total 100.00				
1.91									(mg) Total	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	4.44	
									Tin	7440-31-5	100.00		
									Total 100.00				
43.100													
100.000													