



Semiconductor Device Type: <b>ASA 004 VFLGA 2.0x1.6x0.89mm NiAu</b>				Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials			J-STD-609A Product Marking and/or Pkg. Labeling e3	
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	3.30	(mg) Total	Mold Compound	% of Total Weight	59.00	
Silica(Amorphous) A	60676-86-0	Mold Compound	44.427	2.488	444,270		Silica(Amorphous) A	60676-86-0	75.30		
Silica(Amorphous) B	7631-86-9	Mold Compound	5.924	0.332	59,236		Silica(Amorphous) B	7631-86-9	10.04		
Epoxy Resin	Trade Secret	Mold Compound	4.773	0.267	47,731		Epoxy Resin	Trade Secret	8.09		
Phenol Resin	9003-35-4	Mold Compound	1.776	0.099	17,759		Phenol Resin	9003-35-4	3.01		
Aluminium and its compounds	Trade Secret	Mold Compound	1.776	0.099	17,759		Aluminium and its compounds	Trade Secret	3.01		
Carbon Black	1333-86-4	Mold Compound	0.325	0.018	3,245		Carbon Black	1333-86-4	0.55		
Copper	7440-50-8	Lead Frame	7.018	0.393	70,185		<b>Total 100.00</b>				
Glass fibers	65997-17-3	Lead Frame	4.184	0.234	41,837		<b>1.09</b>	<b>(mg) Total</b>	<b>Lead Frame</b>	<b>% of Total Weight</b>	<b>19.55</b>
Phenol, polymer	9003-36-5	Lead Frame	4.184	0.234	41,837		Copper	7440-50-8	35.90		
Silica, chemically prepared	7631-86-9	Lead Frame	1.564	0.088	15,640		Glass fibers	65997-17-3	21.40		
Nickel	7440-02-0	Lead Frame	0.762	0.043	7,625		Phenol, polymer	9003-36-5	21.40		
Barite	7727-43-7	Lead Frame	0.489	0.027	4,888		Silica, chemically prepared	7631-86-9	8.00		
Magnesium silicate	14807-96-6	Lead Frame	0.391	0.022	3,910		Nickel	7440-02-0	3.90		
Araldite GY 250	25068-38-6	Lead Frame	0.391	0.022	3,910		Barite	7727-43-7	2.50		
(2-Methoxymethyl)ethoxy)propanol	34590-94-8	Lead Frame	0.156	0.009	1,564		Magnesium silicate	14807-96-6	2.00		
Misc.	system	Lead Frame	0.293	0.016	2,933		Araldite GY 250	25068-38-6	2.00		
Aluminium-hydroxide-oxide	24623-77-6	Lead Frame	0.098	0.005	978		(2-Methoxymethyl)ethoxy)propanol	34590-94-8	0.80		
Gold	7440-57-5	Lead Frame	0.020	0.001	196		Misc.	system	1.50		
Silver	7440-22-4	Die Attach 1	0.675	0.038	6,750		Aluminium-hydroxide-oxide	24623-77-6	0.50		
Epoxy Resin	Trade secret	Die Attach 1	0.075	0.004	750		Gold	7440-57-5	0.10		
SiO2 Filler	Trade Secret	Die Attach 2	0.772	0.043	7,723		<b>Total 100.00</b>				
Epoxy Resin	Trade Secret	Die Attach 2	0.390	0.022	3,899		<b>0.04</b>	<b>(mg) Total</b>	<b>Die Attach 1</b>	<b>% of Total Weight</b>	<b>0.75</b>
Acrylic Copolymer	Trade Secret	Die Attach 2	0.234	0.013	2,339		Silver	7440-22-4	90.00		
Phenol Resin	Trade Secret	Die Attach 2	0.234	0.013	2,339		Epoxy Resin	Trade secret	10.00		
Doped Silicon	7440-21-3	Chip (Die) 1	3.810	0.213	38,100		<b>Total 100.00</b>				
Doped Silicon	7440-21-3	Chip (Die) 2	1.700	0.095	17,000		<b>0.09</b>	<b>(mg) Total</b>	<b>Die Attach 2</b>	<b>% of Total Weight</b>	<b>1.63</b>
Doped Gold	7440-57-5	Wire Bond 1	0.650	0.036	6,500		SiO2 Filler	Trade Secret	47.38		
Doped Gold	7440-57-5	Wire Bond 2	0.150	0.008	1,500		Epoxy Resin	Trade Secret	23.92		
Copper	7440-50-8	Plating on external leads (pins)	12.250	0.686	122,496		Acrylic Copolymer	Trade Secret	14.35		
Ni	7440-02-0	Plating on external leads (pins)	0.383	0.021	3,828		Phenol Resin	Trade Secret	14.35		
Au	7440-57-5	Plating on external leads (pins)	0.128	0.007	1,276		<b>Total 100.00</b>				
<b>TOTALS:</b>			<b>100.000</b>	<b>5.600</b>	<b>1,000,000</b>		<b>0.21</b>	<b>Total (mg)</b>	<b>Chip (Die) 1</b>	<b>% of Total Weight</b>	<b>3.81</b>
<b>0.0056 g Total Mass</b>							Doped Silicon	7440-21-3	100.00		
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 2000/53/EC and 2016/774/EU (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 <a href="http://ul.com/global/eng/pages/offering/industries/chemicals/plastics/">http://ul.com/global/eng/pages/offering/industries/chemicals/plastics/</a>											
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.											
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.											
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.											
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.											
Assembled package referenced above is EU REACH compliant based on the latest SVHC candidate list of ECHA which can be found at <a href="http://echa.europa.eu/web/guest/candidate-list-table">http://echa.europa.eu/web/guest/candidate-list-table</a>											
							<b>0.10</b>	<b>Total (mg)</b>	<b>Chip (Die) 2</b>	<b>% of Total Weight</b>	<b>1.70</b>
							Doped Silicon	7440-21-3	100.00		
							<b>Total 100.00</b>				
							<b>0.04</b>	<b>(mg) Total</b>	<b>Wire Bond 1</b>	<b>% of Total Weight</b>	<b>0.65</b>
							Doped Gold	7440-57-5	100.00		
							<b>Total 100.00</b>				
							<b>0.01</b>	<b>(mg) Total</b>	<b>Wire Bond 2</b>	<b>% of Total Weight</b>	<b>0.15</b>
							Doped Gold	7440-57-5	100.00		
							<b>Total 100.00</b>				
							<b>0.71</b>	<b>(mg) Total</b>	<b>Plating on external leads (pins)</b>	<b>% of Total Weight</b>	<b>12.76</b>
							Copper	7440-50-8	96.00		
							Ni	7440-02-0	3.00		
							Au	7440-57-5	1.00		
							<b>Total 100.00</b>				
						<b>5.600</b>				<b>100.00</b>	