MICROCHIP

Semiconductor Device Type: NUA 16 VQFN 4x4x0.9mm NiPdAu

Termination Base Alloy: Copper Alloy (Cu)

Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)

J-STD-609A Product Marking and/or Pkg. Labeling e4

Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm
Silica, fused	60676-86-0	Mold Compound	45.630	18.663	456,300
Epoxy Resin	Trade Secret	Mold Compound	2.459	1.006	24,590
Phenolic Resin	Trade Secret	Mold Compound	2.459	1.006	24,590
Carbon Black	1333-86-4	Mold Compound	0.152	0.062	1,521
Copper	7440-50-8	Lead Frame	40.810	16.691	408,100
Iron	7439-89-6	Lead Frame	0.061	0.025	614
Phosphorous	7723-14-0	Lead Frame	0.016	0.007	164
Zinc (Metal)	7440-66-6	Lead Frame	0.012	0.005	123
Silver	7440-22-4	Die Attach	0.809	0.331	8,085
Epoxy resin	68475-94-5	Die Attach	0.210	0.086	2,100
Copper(II) oxide	1317-38-0	Die Attach	0.032	0.013	315
Silicon	7440-21-3	Chip (Die)	5.530	2.262	55,300
Gold	7440-57-5	Wire Bond	0.500	0.205	5,000
Nickel	7440-02-0	Plating on external leads (pins)	1.188	0.486	11,880
Palladium	7440-05-3	Plating on external leads (pins)	0.066	0.027	660
Gold	7440-57-5	Plating on external leads (pins)	0.066	0.027	660
		TOTALS:	**100.000**	**40.900**	**1,000,000**

0.0409 g Total Mass

20.74	**(mg) Total**	**Mold Compound**	**% ot Total Weight**	**50.70**
	Silica, fused	60676-86-0	90.00	
	Epoxy Resin	Trade Secret	4.85	
	Phenolic Resin	Trade Secret	4.85	
	Carbon Black	1333-86-4	0.30	
		Total	**100.00**	
16.73	**(mg) Total**	**Lead Frame**	**% of Total Weight**	**40.90**
	Copper	7440-50-8	99.78	
	Iron	7439-89-6	0.15	
	Phosphorous	7723-14-0	0.04	
	Zinc (Metal)	7440-66-6	0.03	
		Total	**100.00**	
0.43	**(mg) Total**	**Die Attach**	**% of Total Weight**	**1.05**
	Silver	7440-22-4	77.00	
	Epoxy resin	68475-94-5	20.00	
	Copper(II) oxide	1317-38-0	3.00	
		Total	**100.00**	
2.26	**Total (mg)**	**Chip (Die)**	**% of Total Weight**	**5.53**
	Doped Silicon	7440-21-3	100.00	
		Total	**100.00**	
0.20	**(mg) Total**	**Wire Bond**	**% of Total Weight**	**0.50**
	Gold	7440-57-5	100.00	
		Total	**100.00**	
0.54	**(mg) Total**	**Plating on external leads (pins)**	**% of Total Weight**	**1.32**
	Nickel	7440-02-0	90.00	
	Palladium	7440-05-3	5.00	
	Gold	7440-57-5	5.00	
		Total	**100.00**	
40.90				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 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.

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.
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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