



Package Material Content Declaration

Package Description	32-Pad, 5 x 5 x 1.0 mm Body, Lead Pitch 0.50 mm, 3.10 mm ² Exposed Pad, Very-Thin, Fine Pitch Quad Flat No Lead Package (VQFN)						
Lead Finish	Matte Tin (Sn)			Package Code / GPC		S4B / ZVY	
J-STD-609 Category	e3			Termination Base Alloy:		Copper	
Package Material Declaration							
Material	Substance	CAS #	Weight (mg)	Homogeneous Material		Package	
				Percentage	ppm	Percentage	ppm
Leadframe	Copper (Cu)	7440-50-8	21.814	97.4	974000	35.85	358534
	Iron (Fe)	7439-89-6	0.538	2.4	24000	0.88	8835
	Phosphorous (P)	7723-14-0	0.022	0.1	1000	0.04	368
	Zinc (Zn)	7440-66-6	0.022	0.1	1000	0.04	368
Sub-Total			22.396	100.0	1000000	36.81	368105
Integrated Circuit	Silicon (Si)	7440-21-3	4.032	100.0	1000000	6.63	66277
Sub-Total			4.032	100.0	1000000	6.63	66277
Die Attach	Silver (Ag)	7440-22-4	0.219	73.1	731000	0.36	3592
	Bisphenol-F Epichlorhydrin Resin	9003-36-5	0.018	6.0	60000	0.03	295
	Polyglycidyl Ester	68475-94-5	0.018	6.0	60000	0.03	295
	2,6-Diglycidyl Phenyl Allyl Ether Oligomer	Proprietary	0.016	5.2	52000	0.03	255
	Copper Oxide	1317-38-0	0.014	4.6	46000	0.02	226
	gamma-Butyrolactone	96-48-0	0.007	2.3	23000	0.01	113
	Poly(oxypropylene)diamine	Proprietary	0.007	2.3	23000	0.01	113
	1,4-Bis(2,3-epoxypropoxy)butane	2425-79-8	0.001	0.5	5000	0.00	25
Sub-Total			0.299	100.0	1000000	0.49	4913
Die Pad Plating	Silver (Ag)	7440-22-4	0.502	100.0	1000000	0.83	8255
Sub-Total			0.502	100.0	1000000	0.83	8255
Bond Wire	Copper (Cu)	7440-50-8	0.177	97.6	976000	0.29	2903
	Palladium (Pd)	7440-05-3	0.004	2.4	24000	0.01	71
Sub-Total			0.181	100.0	1000000	0.30	2974
Encapsulation	Silica (Amorphous) A	60676-86-0	22.410	69.2	692000	36.83	368324
	Silica (Amorphous) B	7631-86-9	4.566	14.1	141000	7.50	75049
	Epoxy Resin	Proprietary	2.947	9.1	91000	4.84	48436
	Phenol Resin	Proprietary	2.299	7.1	71000	3.78	37790
	Carbon Black	1333-86-4	0.162	0.5	5000	0.27	2661
Sub-Total			32.384	100.0	1000000	53.23	532260
Terminal Plating	Tin (Sn)	7440-31-5	1.047	100.0	1000000	1.72	17217
Sub-Total			1.047	100.0	1000000	1.72	17217
Total			60.842			100.00	1000000

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/>.

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>.