



Microchip

Package Material Content Declaration

Package Description	32-Lead, 5 x 5 mm Body, 0.50 mm Pitch, Very Thin Quad Flat No Lead Package (VQFN)						
Lead Finish	Matte Tin (Sn)	Package Code / GPC		RXB / ZMF			
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	22.259	97.4	974000	36.31	363149
	Iron (Fe)	7439-89-6	0.548	2.4	24000	0.89	8948
	Phosphorous (P)	7723-14-0	0.023	0.1	1000	0.04	373
	Zinc (Zn)	7440-66-6	0.023	0.1	1000	0.04	373
Sub-Total			22.853	100.0	1000000	37.28	372843
Integrated Circuit	Silicon (Si)	7440-21-3	3.626	100.0	1000000	5.92	59166
Sub-Total			3.626	100.0	1000000	5.92	59166
Die Attach	Silver (Ag)	7440-22-4	0.202	79.7	797000	0.33	3290
	Isobornyl Acrylate	5888-33-5	0.017	6.9	69000	0.03	285
	Isobornyl Methacrylate	7534-94-3	0.017	6.9	69000	0.03	285
	Dicyclopentylidimethylene Diacrylate	42594-17-2	0.015	5.9	59000	0.02	244
	Bis(.alpha.,.alpha.-Dimethylbenzyl) Peroxide	80-43-3	0.002	0.6	6000	0.00	25
Sub-Total			0.253	100.0	1000000	0.41	4128
Die Pad Plating	Silver (Ag)	7440-22-4	0.512	100.0	1000000	0.84	8361
Sub-Total			0.512	100.0	1000000	0.84	8361
Bond Wire	Gold (Au)	7440-57-5	0.248	100.0	1000000	0.41	4054
Sub-Total			0.248	100.0	1000000	0.41	4054
Encapsulation	Silica Fused	60676-86-0	30.113	92.0	920000	49.13	491290
	Epoxy Resin A	Proprietary	1.244	3.8	38000	2.03	20292
	Phenol Resin B	Proprietary	1.244	3.8	38000	2.03	20292
	Carbon Black	1333-86-4	0.131	0.4	4000	0.21	2136
Sub-Total			32.732	100.0	1000000	53.40	534011
Terminal Plating	Tin (Sn)	7440-31-5	1.069	100.0	1000000	1.74	17438
Sub-Total			1.069	100.0	1000000	1.74	17438
Total			61.294			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.

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 <http://echa.europa.eu/web/guest/candidate-list-table>.