



Package Material Content Declaration

Package Description	45-Ball, 13 x 7 Array, 0.4 mm Pitch, Wafer Level Chip Scale Package (WLCSP) with BSC						
Lead Finish	Tin-Silver-Copper (Sn-Ag-Cu)			Package Code / GPC	G2B / GCP		
J-STD-609 Category	e1			Termination Base Alloy:	Other		
Package Material Declaration							
Material	Substance	CAS #	Weight (mg)	Homogeneous Material		Package	
				Percentage	ppm	Percentage	ppm
Backside Coating	Silica	Proprietary	0.352	56.5	565000	4.41	44086
	Epoxy Resin	Proprietary	0.132	21.1	211000	1.65	16464
	Acrylic Resin	Proprietary	0.132	21.1	211000	1.65	16464
	Carbon Black	1333-86-4	0.008	1.3	13000	0.10	1014
Sub-Total			0.624	100.0	1000000	7.80	78028
Integrated Circuit	Silicon (Si)	7440-21-3	4.115	100.0	1000000	51.47	514749
Sub-Total			4.115	100.0	1000000	51.47	514749
PBO Layer	4-Butyrolactone	96-48-0	0.076	53.2	532000	0.95	9453
	Non Regulated Ingredients	Proprietary	0.052	36.8	368000	0.65	6539
	1-Methoxy-2-propyl Acetate	108-65-6	0.012	8.4	84000	0.15	1493
	Ethanol	64-17-5	0.001	0.8	8000	0.01	142
	N-Methyl-2-pyrrolidone	872-50-4	0.001	0.8	8000	0.01	142
Sub-Total			0.142	100.0	1000000	1.78	17769
Redistribution Layer	Aluminum (Al)	7429-90-5	0.019	69.2	692000	0.24	2379
	Titanium (Ti)	7440-32-6	0.008	30.8	308000	0.11	1059
Sub-Total			0.027	100.0	1000000	0.34	3437
Underbump Metal	Copper (Cu)	7440-50-8	0.018	58.9	589000	0.22	2211
	Aluminum (Al)	7429-90-5	0.006	21.5	215000	0.08	807
	Nickel (Ni)	7440-02-0	0.004	11.7	117000	0.04	439
	Vanadium (V)	7440-62-2	0.002	7.9	79000	0.03	297
Sub-Total			0.030	100.0	1000000	0.38	3754
Solder Ball	Tin (Sn)	7440-31-5	2.919	95.5	955000	36.51	365061
	Silver (Ag)	7440-22-4	0.122	4.0	40000	1.53	15291
	Copper (Cu)	7440-50-8	0.015	0.5	5000	0.19	1911
Sub-Total			3.056	100.0	1000000	38.23	382263
Total			7.995			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/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>.