

 Package Material Content Declaration							
Package Description	Thin Fine Pitch Ball Grid Array, 324 Balls, 15 x 15 x 1.2 mm, Pitch 0.80mm (TFBGA)						
Lead Finish	Tin-Silver-Copper (Sn-Ag-Cu)	Package Code / GPC	BJB / CRC				
J-STD-609 Category	e8	Termination Base Alloy:	Laminate				
Package Material Declaration							
Material	Substance	CAS #	Weight (mg)	Homogeneous Material		Package	
				Percentage	ppm	Percentage	ppm
Integrated Circuit	Silicon (Si)	7440-21-3	17.227	100.0	1000000	4.60	46020
Sub-Total			17.227	100.0	1000000	4.60	46020
Die Attach	Silver (Ag)	7440-22-4	1.205	81.5	815000	0.32	3219
	Di-ester Resin	Proprietary	0.114	7.7	77000	0.03	304
	Functionalized Ester Resin	Proprietary	0.114	7.7	77000	0.03	304
	Polymeric Material	Proprietary	0.046	3.1	31000	0.01	122
Sub-Total			1.479	100.0	1000000	0.40	3950
Bond Wire	Copper (Cu)	7440-50-8	2.550	97.6	976000	0.68	6813
	Palladium (Pd)	7440-05-3	0.063	2.4	24000	0.02	168
Sub-Total			2.613	100.0	1000000	0.70	6981
Encapsulation	Silica Fused	60676-86-0	187.512	89.8	898000	50.09	500929
	Epoxy Resin	Proprietary	11.902	5.7	57000	3.18	31796
	Phenol Resin	Proprietary	8.770	4.2	42000	2.34	23429
	Carbon Black	1333-86-4	0.626	0.3	3000	0.17	1673
Sub-Total			208.811	100.0	1000000	55.78	557828
Laminate	Copper (Cu)	7440-50-8	44.023	41.7	417000	11.76	117604
	Filament Fiber Glass	65997-17-3	23.753	22.5	225000	6.35	63456
	BT Epoxy Resin	Proprietary	23.753	22.5	225000	6.35	63456
	Inorganic Filler	21645-51-2	14.041	13.3	133000	3.75	37509
Sub-Total			105.570	100.0	1000000	28.20	282025
Soldermask	Acrylate Resin	Proprietary	2.105	41.0	410000	0.56	5622
	Barium Sulfate	7727-43-7	1.648	32.1	321000	0.44	4402
	Epoxy Resin	Proprietary	0.821	16.0	160000	0.22	2194
	Organic Compounds	Proprietary	0.364	7.1	71000	0.10	974
	Talc	14807-96-6	0.144	2.8	28000	0.04	384
	Silica	7631-86-9	0.036	0.7	7000	0.01	96
	Phthalocyanine Blue	147-14-8	0.015	0.3	3000	0.00	41
Sub-Total			5.133	100.0	1000000	1.37	13713
Solder Ball	Tin (Sn)	7440-31-5	32.994	98.5	985000	8.81	88142
	Silver (Ag)	7440-22-4	0.335	1.0	10000	0.09	895
	Copper (Cu)	7440-50-8	0.167	0.5	5000	0.04	447
Sub-Total			33.497	100.0	1000000	8.95	89484
Total			374.329			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>.