MICROCHIP

Semiconductor Device Type: B1KE / CC (9TX) 048 TFBGA 8x10x1.2mm SAC

Termination Base Alloy: Copper Alloy (Cu)

JEDEC 97 Product Marking and/or Pkg. Labeling e1

Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm
FUSED SILICA	60676-86-0	Mold Compound	38.981	55.509	389,810
EPOXY RESINS, CURED	Trade Secret	Mold Compound	4.905	6.984	49,048
HIGH CROSS-LINKED HIGH MOLECULAR EPOXY / EPOXY PHENOL RESIN	Trade Secret	Mold Compound	4.905	6.984	49,048
CRYSTALLINE SILICA	14808-60-7	Mold Compound	1.258	1.791	12,580
CARBON BLACK	1333-86-4	Mold Compound	0.252	0.358	2,515
Copper	7440-50-8	Lead Frame	8.052	11.467	80,524
Glass fibers	65997-17-3	Lead Frame	4.800	6.835	48,000
Phenol, formaldehyde, (chloromethyl)oxirane polymer	9003-36-5	Lead Frame	4.800	6.835	48,000
Silica, chemically prepared	7631-86-9	Lead Frame	1.794	2.555	17,944
Nickel	7440-02-0	Lead Frame	0.875	1.246	8,748
Barite	7727-43-7	Lead Frame	0.561	0.799	5,608
Magnesium silicate	14807-96-6	Lead Frame	0.449	0.639	4,486
Araldite GY 250	25068-38-6	Lead Frame	0.449	0.639	4,486
(2-Methoxymethylethoxy)propanol	34590-94-8	Lead Frame	0.179	0.256	1,794
Misc.	system	Lead Frame	0.336	0.479	3,365
Aluminium-hydroxide-oxide	24623-77-6	Lead Frame	0.112	0.160	1,122
Gold	7440-57-5	Lead Frame	0.022	0.032	224
Silver	7440-22-4	Die Attach	0.552	0.786	5,520
Basic Duromer:Phenolic resin (Compound of polymeric network)	26834-02-6	Die Attach	0.138	0.197	1,380
Silicon	7440-21-3	Chip (Die)	7.650	10.894	76,500
Doped Gold	7440-57-5	Wire Bond	0.860	1.225	8,600
Tin	7440-31-5	Plating on external leads (pins)	17.257	24.574	172,569
Silver	7440-22-4	Plating on external leads (pins)	0.723	1.029	7,228
Copper	7440-50-8	Plating on external leads (pins)	0.090	0.129	904
		TOTALS:	**100.000**	**142.400**	**1,000,000**

0.1424 g Total Mass

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

71.63	(mg) Total	Mold Compound	% ot Total Weight	50.3
	FUSED SILICA	60676-86-0	77.50	
	EPOXY RESINS, CURED	Trade Secret	9.75	
	HIGH CROSS-LINKED HIGH MOLECULAR EPOXY / EPOXY PHENOL RESIN	Trade Secret	9.75	
	CRYSTALLINE SILICA	14808-60-7	2.50	
	CARBON BLACK	1333-86-4	0.50	
		Total	**100.00**	

31.94	(mg) Total	Lead Frame	% of Total Weight	22.43
	Copper	7440-50-8	35.90	
	Glass fibers	65997-17-3	21.40	
	Phenol, formaldehyde, (chloromethyl)oxirane polymer	9003-36-5	21.40	
	Silica, chemically prepared	7631-86-9	8.00	
	Nickel	7440-02-0	3.90	
	Barite	7727-43-7	2.50	
	Magnesium silicate	14807-96-6	2.00	
	Araldite GY 250	25068-38-6	2.00	
	(2-Methoxymethylethoxy) propanol	34590-94-8	0.80	
	Misc.	system	1.50	
	Aluminium-hydroxide-oxide	24623-77-6	0.50	
	Gold	7440-57-5	0.10	
		Total	**100.00**	

0.98	(mg) Total	Die Attach	% of Total Weight	0.69
	Silver	7440-22-4	80.00	
	Basic Duromer:Phenolic resin (Compound of polymeric network)	26834-02-6	20.00	
		Total	**100.00**	

10.89	(mg) Total	Chip (Die)	% of Total Weight	7.65
	Doped Silicon	7440-21-3	100	
		Total	**100.00**	

1.22	(mg) Total	Wire Bond	% of Total Weight	0.86
	Doped Gold	7440-57-5	100.00	
		Total	**100.00**	

25.73	(mg) Total	Plating on external leads (pins)	% of Total Weight	18.07
	Tin	7440-31-5	95.50	
	Silver	7440-22-4	4.00	
	Copper	7440-50-8	0.50	
		Total	**100.00**	

142.40 100.00

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 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.

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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