MICROCHIP

Semiconductor Device Type: R4X QFN-64-9x9x0.9mm-MatteTin

Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm
Silicon	7440-21-3	Die	0.02	0.05	244
Copper	7440-50-8	Leadframe	52.83	116.88	528262
Iron	7439-89-6	Leadframe	1.22	2.70	12203
Zinc	7440-66-6	Leadframe	0.07	0.14	651
Phosphorus	7723-14-0	Leadframe	0.04	0.10	434
Silver	7440-22-4	Leadframe	0.05	0.12	542
Conducting Salts	Trade Secret	Die Attach Material	0.03	0.06	271
Acrylic Resin	Trade Secret	Die Attach Material	0.05	0.11	475
Polybutadiene Derivative	Trade Secret	Die Attach Material	0.06	0.14	610
Butadiene Copolymer	Trade Secret	Die Attach Material	0.00	0.01	34
Acrylate	Trade Secret	Die Attach Material	0.05	0.11	475
Peroxide	Trade Secret	Die Attach Material	0.00	0.01	41
Other	Trade Secret	Die Attach Material	0.01	0.02	102
Silver	7440-22-4	Die Attach Material	0.50	1.12	5044
Copper	7440-50-8	Bonding Wire	0.22	0.49	2212
Palladium	7440-05-3	Bonding Wire	0.00	0.01	45
Gold	7440-57-5	Bonding Wire	0.00	0.00	2
Epoxy Resin A	Trade Secret	Molding Compound (Encapsulation)	1.32	2.93	13247
Epoxy Resin B	Trade Secret	Molding Compound (Encapsulation)	1.32	2.93	13247
Phenol Resin	Trade Secret	Molding Compound (Encapsulation)	2.38	5.28	23845
Carbon Black	1333-86-4	Molding Compound (Encapsulation)	0.13	0.29	1325
Silica fused	60676-86-0	Molding Compound (Encapsulation)	34.44	76.21	344428
Silica fused	7631-86-9	Molding Compound (Encapsulation)	4.42	9.77	44157
Silica, crystalline	14808-60-7	Molding Compound (Encapsulation)	0.13	0.29	1325
Tin	7440-31-5	Lead Finish Plating	0.68	1.50	6780
		TOTALS:	**100.00**	**221.25**	**1,000,000**

221.25 mg Total Mass

The information contained in this Material Content Declaration (MCD) consists of package-level information and is not part number specific. This information is considered to be sufficiently representative of all part numbers for the package type.

Microchip Technology Incorporated designs all products to comply with global product material compliance standards, including but not limited to RoHS, REACH, and China RoHS. Additionally, Microchip products are designed to be compliant with IEC62474. For specific compliance information, please check our product material compliance website on microchip.com or ask your local sales representative.

Microchip Technology Incorporated believes the information in this MCD 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 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. These estimates do not include trace levels of dopants, impurities, metals, and non-metallic materials which may be contained within silicon devices (silicon IC) or 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 acknowledgements, and invoices.

Microchip disclaims any duty to notify users of updates or changes to MCDs 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 MCDs.

Package Homogeneous Materials

0.05	**(mg) Total**	**Die**	**% of Total Weight**	**0.02**
	Silicon	7440-21-3	100.00	
		Total	**100.00**	
119.94	**(mg) Total**	**Leadframe**	**% of Total Weight**	**54.21**
	Copper	7440-50-8	97.45	
	Iron	7439-89-6	2.25	
	Zinc	7440-66-6	0.12	
	Phosphorus	7723-14-0	0.08	
	Silver	7440-22-4	0.10	
		Total	**100.00**	
1.56	**(mg) Total**	**Die Attach Material**	**% of Total Weight**	**0.71**
	Conducting Salts	Trade Secret	3.85	
	Acrylic Resin	Trade Secret	6.73	
	Polybutadiene Derivative	Trade Secret	8.65	
	Butadiene Copolymer	Trade Secret	0.48	
	Acrylate	Trade Secret	6.73	
	Peroxide	Trade Secret	0.58	
	Other	Trade Secret	1.44	
	Silver	7440-22-4	71.54	
		Total	**100.00**	
0.50	**(mg) Total**	**Bonding Wire**	**% of Total Weight**	**0.23**
	Copper	7440-50-8	97.90	
	Palladium	7440-05-3	2.00	
	Gold	7440-57-5	0.10	
		Total	**100.00**	
97.70	**(mg) Total**	**Molding Compound (Encapsulation)**	**% of Total Weight**	**44.16**
	Epoxy Resin A	Trade Secret	3.00	
	Epoxy Resin B	Trade Secret	3.00	
	Phenol Resin	Trade Secret	5.40	
	Carbon Black	1333-86-4	0.30	
	Silica fused	60676-86-0	78.00	
	Silica fused	7631-86-9	10.00	
	Silica, crystalline	14808-60-7	0.30	
		Total	**100.00**	
1.50	**(mg) Total**	**Lead Finish Plating**	**% of Total Weight**	**0.68**
	Tin	7440-31-5	100.00	
221.25		**Total**	**100.00**	100.00