

Chemicals contained in products

Package-type

Epson Package name; **QFP5-100PIN-S2**

JEITA Package name; **P-QFP100-1420-0.65**

Terminal plating; **Lead(Pb) Free**

Weight; **1.76 [g]*Note1**

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content *Note2		Application
					[mg]	[ppm]	
IC Die	IC Die	23.6	Silicon	7440-21-3	23.6	999894	Base material
			Boron	7440-42-8	0.000047	2	Dopant
			Phosphorus	7723-14-0	0.00012	5	Dopant
			Aluminum	7429-90-5	0.00047	20	Metalization
			Arsenic *Note3	7440-38-2	0.00012	5	Dopant
			Fluorine *Note3	7782-41-4	0.000047	2	Dopant
			Titanium *Note3	7440-32-6	0.00047	20	Metalization
			Molybdenum *Note3	7439-98-7	0.00047	20	Metalization
			Tungsten *Note3	7440-33-7	0.00071	30	Metalization
			Cobalt *Note3	7440-48-4	0.000047	2	Metalization
	Stress buffer coat	0.47	Polyimide	-	0.47	1000000	Stress buffer coat *Note4
Package	Die Bonding material	5.6	Silver	7440-22-4	3.6	640000	Base material
			Epoxy resin	-	1.1	205000	Adhesive
			Phenol resin	-	0.46	80000	Adhesive
			Inorganic powder	-	0.28	48000	Additive
			Bismuth compound	-	0.15	27000	Ion trap
	Lead Frame Plating	31.1	Tin	7440-31-5	30.4	980000	Solder
			Bismuth	7440-69-9	0.62	20000	Solder
	Lead Frame	374.8	Copper	7440-50-8	354.2	945000	Conductor
			Silver	7440-22-4	1.87	5000	Inner lead plating
			Others *Note5	-	18.7	50000	Additive
	Bonding Wire	2.4	Gold	7440-57-5	2.4	1000000	Conductor
	Mold resin	1322.1	Epoxy resin	-	145.4	110000	Base material
			Antimony trioxide	1309-64-4	10.6	8000	Flame retardant
			Halogenated compound(Brominations epoxy)	-	10.6	8000	Flame retardant
			Silica	60676-86-0/-	996.2	753500	Filler
Carbon black			1333-86-4	13.3	10000	Coloring agent	
Hardening chemical(ex:Phenol resin)			-	145.4	110000	Base material	
Organic phosphorous compound			-	0.66	500	Hardening accelerator	

Regarding the information of chemical substances

*Note1 The weight might be somewhat different depending on an individual built-in IC-chip specification like the size etc.

*Note2 Content data are estimated values based on supplier information and intended levels of content in product.

Actual measurements may vary from these values somewhat.

*Note3 Use or not-use of these substances depends on individual built-in IC-chip specification.

*Note4 The stress buffer coat may not be used depending on the individual model.

*Note5 The nickel, zinc, tin, silicon, iron, and the zinc oxide are included for the Cu type. And the carbon, silicon, and manganese are included for 42alloy type.