

Chemicals contained in products

Package-type

Epson Package name; **PFBGA10U-121 / Mold : Halogen free**

JEITA Package name; **(P-TFBGA-121-1010-0.80)**

Solder ball Type; **Lead(Pb) Free**

Weight; **0.19 [g] *Note1**

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content ※2		Application
					[mg]	[ppm]	
IC Die	IC Die	28	Silicon	7440-21-3	27.6	999894	Base material
			Boron	7440-42-8	0.00006	2	Dopant
			Phosphorus	7723-14-0	0.00014	5	Dopant
			Aluminum	7429-90-5	0.0006	20	Metalization
			Arsenic *Note3	7440-38-2	0.00014	5	Dopant
			Fluorine *Note3	7782-41-4	0.00006	2	Dopant
			Titanium *Note3	7440-32-6	0.0006	20	Metalization
			Molybdenum *Note3	7439-98-7	0.0006	20	Metalization
			Tungsten *Note3	7440-33-7	0.0008	30	Metalization
			Cobalt *Note3	7440-48-4	0.00006	2	Metalization
Package	Stress buffer coat	0.55	Polyimide	-	0.55	1000000	Stress buffer coat *Note4
	Substrate	40	Glass-cloth	-	2.1	52140	Reinforcement
			Silica	-	1.0	26180	Filler
			Halogenated compound(Brominations epoxy)	-	3.3	81400	Flame retardant
			Epoxy resin	-	3.5	86280	Base material
			Acrylate resin	-	2.2	54600	Base material
			Pigment	-	1.9	46800	Additive
			Organic filler	-	0.10	2600	Filler
			Arsenic	7440-38-2	0.001	26	Burning resistance
			Chromium compound	-	0.0008	20	Burning resistance
			Copper	7440-50-8	25.4	629154	Copper foil
			Nickel	7440-02-0	0.69	16900	Plating
			Gold	7440-57-5	0.16	3900	Plating
	Die Bonding material	2.8	Epoxy resin	-	1.9	670000	Adhesive
			Acrylic resin	-	0.95	330000	Adhesive
	Solder ball	24	Tin	7440-31-5	22.6	957500	Solder ball
			Silver	7440-22-4	0.87	35000	Solder ball
			Copper	7440-50-8	0.18	7500	Solder ball
	Bonding Wire	1.2	Gold	7440-57-5	1.2	1000000	Conductor
	Mold resin	94	Epoxy resin	-	4.7	50000	Base material
			Silica	60676-86-0/-	81.90	873000	Filler
			Carbon black	1333-86-4	0.19	2000	Coloring agent
			Hardening chemical(ex:Phenol resin)	-	4.7	50000	Base material
			Organic phosphorous compound	-	0.47	5000	Hardening accelerator
			others	-	1.9	20000	Additive

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.