Chemicals contained in products

Package-type

Epson Package name; **PFBGA14U-256 / Halogen free**

JEITA Package name; **(P-TFBGA-256-1414-0.80)**

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

Weight; **0.38** [g] *Note1

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content ※2 [mg]	Content ※2 [ppm]	Application
IC Die	IC Die	24.10	Silicon	7440-21-3	24.1	999914	Base material
			Boron	7440-42-8	0.00005	2	Dopant
			Phosphorus	7723-14-0	0.00012	5	Dopant
			Aluminum	7429-90-5	0.0005	20	Metalization
			Arsenic *Note3	7440-38-2	0.00012	5	Dopant
			Fluorine *Note3	7782-41-4	0.00005	2	Dopant
			Titanium *Note3	7440-32-6	0.0005	20	Metalization
			Tungsten *Note3	7440-33-7	0.0007	30	Metalization
			Cobalt *Note3	7440-48-4	0.00005	2	Metalization
	Stress buffer coat	0.48	Polyimide	-	0.48	1000000	Stress buffer coat *Note4
Package	Substrate	51.48	Glass-cloth	-	9.03	175310	Reinforcement
			Barium Sulfate	7727-43-7	2.10	40790	Additive
			Epoxy resin	-	10.15	197180	Base material
			Acrylate resin	-	2.98	57800	Base material
			Pigment	-	1.31	25520	Additive
			Organic filler	-	0.175	3400	Filler
			Zinc	7440-66-6	0.047	920	Characteristic preserve
			Chromium	7440-47-3	0.0015	30	Characteristic preserve
			Copper	7440-50-8	21.57	419050	Copper foil
			Nickel	7440-02-0	3.29	64000	Plating
			Gold	7440-57-5	0.82	16000	Plating
	Die Bonding material	2.21	Ester resin	-	0.17	75000	Adhesive
			Epoxy resin	-	1.05	475000	Adhesive
			Silica	7631-86-9	1.00	450000	Filler
	Solder ball	52.48	Tin	7440-31-5	50.64	964900	Solder ball
			Silver	7440-22-4	1.57	30000	Solder ball
			Copper	7440-50-8	0.26	5000	Solder ball
			Nickel	7440-02-0	0.01	100	Solder ball
	Bonding Wire	4.11	Copper	7440-50-8	4.11	1000000	Conductor
	Mold resin	245.13	Silica	60676-86-0	220.25	898500	Filler
			Epoxy resin	-	13.48	55000	Base material
			Carbon black	1333-86-4	0.37	1500	Coloring agent
			Phenol resin	-	11.03	45000	Base material

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.