Chemicals contained in products

Package-type

Epson Package name; **PBGA1UE-256 / Halogen free**

JEITA Package name; **(P-LBGA-0256-1717-1.00)**

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

Weight; **0.84** [g] *Note1

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content *Note2		Application
					[mg]	[ppm]	
IC Die	IC Die	29.20	Silicon	7440-21-3	29.2	999914	Base material
			Boron	7440-42-8	0.00006	2	Dopant
			Phosphorus	7723-14-0	0.00010	5	Dopant
			Aluminum	7429-90-5	0.0006	20	Metalization
			Arsenic *Note3	7440-38-2	0.00010	5	Dopant
			Fluorine *Note3	7782-41-4	0.00006	2	Dopant
			Titanium *Note3	7440-32-6	0.0006	20	Metalization
			Tungsten *Note3	7440-33-7	0.0009	30	Metalization
			Cobalt *Note3	7440-48-4	0.00006	2	Metalization
	Stress buffer coat	0.58	Polyimide	-	0.58	1000000	Stress buffer coat *Note4
Package	Substrate	185.71	Glass-cloth	-	32.56	175310	Reinforcement
			Barium Sulfate	7727-43-7	7.58	40790	Additive
			Epoxy resin	-	36.62	197180	Base material
			Acrylate resin	-	10.73	57800	Base material
			Pigment	-	4.74	25520	Additive
			Organic filler	-	0.631	3400	Filler
			Zinc	7440-66-6	0.171	920	Characteristic preserve
			Chromium	7440-47-3	0.0056	30	Characteristic preserve
			Copper	7440-50-8	77.82	419050	Copper foil
			Nickel	7440-02-0	11.89	64000	Plating
			Gold	7440-57-5	2.97	16000	Plating
	Die Bonding material	1.60	Ester resin	-	0.12	75000	Adhesive
			Epoxy resin	-	0.76	475000	Adhesive
			Silica	15468-32-3	0.72	450000	Filler
	Solder ball	123.65	Tin	7440-31-5	119.31	964900	Solder ball
			Silver	7440-22-4	3.71	30000	Solder ball
			Copper	7440-50-8	0.62	5000	Solder ball
			Nickel	7440-02-0	0.01	100	Solder ball
	Bonding Wire	3.57	Copper	7440-50-8	3.57	1000000	Conductor
	Mold resin	495.69	Silica	60676-86-0	445.38	898500	Filler
			Epoxy resin	-	27.26	55000	Base material
			Carbon black	1333-86-4	0.74	1500	Coloring agent
			Phenol resin	-	22.31	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.