

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	29.2	Silicon	7440-21-3	29.2	999894	Base material		
			Boron	7440-42-8	0.00006	5	Dopant		
			Phosphorus	7723-14-0	0.0001	2	Dopant		
			Aluminum	7429-90-5	0.0006	2	Metalization		
			Arsenic *Note3	7440-38-2	0.0001	5	Dopant		
			Fluorine *Note3	7782-41-4	0.00006	20	Dopant		
			Titanium *Note3	7440-32-6	0.0006	20	Metalization		
			Molybdenum *Note3	7439-98-7	0.0006	20	Metalization		
			Tungsten *Note3	7440-33-7	0.0009	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	85.48	Glass-cloth	-	14.99	175310	Reinforcement		
			Barium Sulfate	7727-43-7	3.49	40790	Additive		
			Epoxy resin	-	16.85	197180	Base material		
			Acrylate resin	-	4.94	57800	Base material		
			Pigment	-	2.18	25520	Additive		
			Organic filler	-	0.29	3400	Filler		
			Zinc	7440-66-6	0.08	920	Characteristic preserve		
			Chromium	7440-47-3	0.003	30	Characteristic preserve		
			Copper	7440-50-8	35.82	419050	Copper foil		
			Nickel	7440-02-0	5.47	64000	Plating		
			Gold	7440-57-5	1.37	16000	Plating		
			Die Bonding material	55.90	Epoxy resin	-	52.07	75000	Base material
					Ester resin	-	2.64	475000	Base material
	Silicon dioxide	7631-86-9			1.19	450000	Filler		
	Solder ball	110.51	Tin	7440-31-5	105.81	957500	Main constituent		
			Silver	7440-22-4	3.87	35000	Main constituent		
			Copper	7440-50-8	0.83	7500	Main constituent		
	Bonding wire	6.00	Gold	7440-57-5	6.00	1000000	Main constituent		
	Mold resin	552.33	Silica	60676-86-0	496.27	898500	Filler		
			Epoxy Resin	-	30.38	55000	Main constituent		
			Carbon Black	1333-86-4	0.83	1500	Coloring agent		
			Phenol Resin	-	24.85	45000	Main constituent		

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.