Chemicals contained in products

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Package-type

Epson Package name ; **PBGA1UC256 / Mold : Halogen free**
JEITA Package name ; **(P-TBGA-0256-1717-1.00)**
Solder ball Type ; **Lead(Pb) Free**
Weight ; **0.60** [g] *Note1

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content *Note2 [mg]	[ppm]	Application
IC Die	IC Die	20	Silicon	7440-21-3	19.9	999894	Base material
			Boron	7440-42-8	0.00004	2	Dopant
			Phosphorus	7723-14-0	0.0001	5	Dopant
			Aluminum	7429-90-5	0.0004	20	Metalization
			Arsenic *Note3	7440-38-2	0.0001	5	Dopant
			Fluorine *Note3	7782-41-4	0.00004	2	Dopant
			Titanium *Note3	7440-32-6	0.0004	20	Metalization
			Molybdenum *Note3	7439-98-7	0.0004	20	Metalization
			Tungsten *Note3	7440-33-7	0.0006	30	Metalization
			Cobalt *Note3	7440-48-4	0.00004	2	Metalization
	Stress buffer coat	0.40	Polyimide	-	0.40	1000000	Stress buffer coat *Note4
Package	Substrate	124	Glass-cloth	-	6.4	52140	Reinforcement
			Silica	-	3.3	26180	Filler
			Halogenated compound(Brominations epoxy)	-	10.1	81400	Flame retardant
			Epoxy resin	-	10.7	86280	Base material
			Acrylate resin	-	6.8	54600	Base material
			Pigment	-	5.8	46800	Additive
			Organic filler	-	0.33	2600	Filler
			Arsenic	7440-38-2	0.003	26	Burning resistance
			Chromium compound	-	0.003	20	Burning resistance
			Copper	7440-50-8	78.0	629154	Copper foil
			Nickel	7440-02-0	2.1	16900	Plating
			Gold	7440-57-5	0.48	3900	Plating
	Die Bonding material	8.7	Epoxy resin	-	5.9	670000	Adhesive
			Acrylic resin	-	2.8	330000	Adhesive
	Solder ball	104	Tin	7440-31-5	99.2	957500	Solder ball
			Silver	7440-22-4	3.6	35000	Solder ball
			Copper	7440-50-8	0.78	7500	Solder ball
	Bonding Wire	7.1	Gold	7440-57-5	7.1	1000000	Conductor
	Mold resin	336	Epoxy resin	-	16.8	50000	Base material
			Silica	60676-86-0/-	294	873000	Filler
			Carbon black	1333-86-4	0.67	2000	Coloring agent
			Hardening chemical(ex:Phenol resin)	-	16.8	50000	Base material
			Organic phosphorous compound	-	1.7	5000	Hardening accelerator
			others	-	6.7	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.