



Device Material Content

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Assembly: ASEM

Size (mm): 4 x 4

Lead pitch (mm): 0.4

MSL: 3

Reflow max (°C): 260

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Package: 64 ucBGA
Total Device Weight 0.03 Grams

Package Code:

UMN64

Products:

LC4kZE

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	7.09%	0.0021	7.09%	0.0021	Silicon chip	7440-21-3	100.00%	Die size: 1.7 x 1.91 mm
Mold Compound	47.43%	0.0142	3.32%	0.0010	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE
			2.37%	0.0007	Phenol Novolac	9003-35-4	5.00%	
			2.37%	0.0007	Metal Hydroxide	-	5.00%	
			0.24%	0.0001	Carbon Black	1333-86-4	0.50%	
			39.13%	0.0117	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	1.14%	0.0003	0.92%	0.00027	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.23%	0.00007	Esters & resins	-	20.00%	
Wire	1.85%	0.0006	1.82%	0.00055	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.03%	0.00001	Palladium	7440-05-3	1.50%	
Solder Balls	12.99%	0.0039	12.54%	0.00376	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.39%	0.00012	Silver (Ag)	7440-22-4	3.00%	
			0.06%	0.00002	Copper (Cu)	7440-50-8	0.50%	
Substrate	17.39%	0.0052	5.57%	0.0017	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			11.83%	0.0035	Glass fiber	65997-17-3	68.00%	
Foil	7.91%	0.0024	6.49%	0.0019	Copper	7440-50-8	82.00%	
			1.19%	0.0004	Nickel plating	7440-02-0	15.10%	
			0.23%	0.0001	Gold plating	7440-57-5	2.91%	
Solder Mask	4.18%	0.0013	2.27%	0.00068	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.31%	0.00009	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.14%	0.00004	Morpholine derivative**	71868-10-5	3.32%	
			0.13%	0.00004	Silicon dioxide	7631-86-9	3.00%	
			0.13%	0.00004	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.000003	Carbon black	1333-86-4	0.24%	
			1.20%	0.00036	Trade secret ingredients	-	28.74%	

Notes: SVHC: * 0.17% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.
** 0.14% max. concentration of Morpholine derivative (CAS# 71868-10-5), contained in solder mask material.

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