



## Device Material Content

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**Package Code:**

UMN64

Assembly: ASEM

Size (mm): 4 x 4

Lead pitch (mm): 0.4

MSL: 3

Reflow max (°C): 260

**Package:** 64 ucBGA  
**Total Device Weight:** 0.03 Grams

**Products:**

LC4kZE

April, 2018

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
<b>Die</b>	7.09%	0.0021	7.09%	0.0021	Silicon chip	7440-21-3	100.00%	Die size: 1.7 x 1.91 mm
<b>Mold Compound</b>	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%	
<b>D/A Epoxy</b>	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%	
<b>Wire</b>	1.85%	0.0006	1.82%	0.0005	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.03%	0.0000	Palladium	7440-05-3	1.50%	
<b>Solder Balls</b>	12.99%	0.0039	12.54%	0.0038	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.39%	0.0001	Silver (Ag)	7440-22-4	3.00%	
			0.06%	0.0000	Copper (Cu)	7440-50-8	0.50%	
<b>Substrate</b>	29.48%	0.0088	17.39%	0.0052	Laminate*	-	59.00%	BT Resin CCL-HL832NX-A
			4.18%	0.0013	Solder mask PSR4000 AUS 308	-	14.17%	
			6.49%	0.0019	Copper	7440-50-8	22.00%	
			1.19%	0.0004	Nickel plating	7440-02-0	4.05%	
			0.23%	0.0001	Gold plating	7440-57-5	0.78%	

**Notes:** \* 0.17% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.

Constituent substances and proportions in epoxy materials are before curing.

The information provided above is representative of the package as of the date listed, and is subject to change at any time.

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