



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com					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 0.030 Grams		Products: LC4kZE				
June, 2022								
	% 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% 2.37% 2.37% 0.24% 39.13%	0.0010 0.0007 0.0007 0.0001 0.0117	Epoxy Resin Phenol Novolac Metal Hydroxide Carbon Black Silica Fused	- 9003-35-4 - 1333-86-4 60676-86-0	7.00% 5.00% 5.00% 0.50% 82.50%	Mold Compound: Sumitomo G750SE
D/A Epoxy	1.14%	0.0003	0.92% 0.23%	0.00027 0.00007	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	1.85%	0.0006	1.82% 0.03%	0.00055 0.00001	Copper Palladium	7440-50-8 7440-05-3	98.50% 1.50%	0.8 mil diameter; 1 wire per solder ball
Solder Balls	12.99%	0.0039	12.54% 0.39% 0.06%	0.00376 0.00012 0.00002	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.50% 3.00% 0.50%	SAC305
Substrate	17.39%	0.0052	5.57% 11.83%	0.0017 0.0035	BT Resins Glass fiber	- 65997-17-3	32.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	7.91%	0.0024	6.49% 1.19% 0.23%	0.0019 0.0004 0.0001	Copper Nickel Gold	7440-50-8 7440-02-0 7440-57-5	82.00% 15.10% 2.91%	
Solder Mask	4.18%	0.0013	2.35% 0.67% 0.92% 0.13% 0.12%	0.00070 0.00020 0.00028 0.00004 0.000035	Quartz 3-methoxy-3-methylbutylacetate Barium Sulfate Talc (containing no asbestiform fibers) Trade secret ingredients	14808-60-7 103429-90-9 7727-43-7 14807-96-6 -	56.20% 16.00% 22.00% 3.00% 2.80%	Solder mask PSR4000 AUS 308

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