



## Device Material Content

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**Package: 20WLCSP**  
**Total Device Weight: 0.00791**

**Grams**

**with SnAgCu Solder Balls**

MSL: 1  
Peak Reflow Temp 260°C

Component	% of total package weight	weight (g)	substance	% of total package weight	weight (g)	CAS #	Notes/Assumptions
Die	53.8600%	0.004261	Silicon	53.86%	0.004261	7440-21-3	
Repassivation	0.89%	0.000070	HD8820				
			4-Butyrolactone	0.45%	0.000035	96-48-0	45-55% (assumed 50% here)
			Polyamide	0.31%	0.000025	Trade Secret	30-40% (assumed 35% here)
			1-Methoxy-2-propyl acetate	0.04%	0.000004	108-65-6	1-10% (assumed 5% here)
			Photo Active Compound	0.04%	0.000004	Trade Secret	1-10% (assumed 5% here)
Proprietary Additives	0.04%	0.000004	Trade Secret	1-10% (assumed 5% here)			
RDL metalization	12.77%	0.001010	RDL-Ti	0.10%	0.000008	7440-32-6	Ti (0.81%)
			RDL-Cu	0.41%	0.000032	7440-50-8	Cu (3.2%)
			RDL-Cu	12.26%	0.000970	7440-50-8	Cu (95.99%)
UBM	11.81%	0.000934	UBM-Ti	0.07%	0.000006	7440-32-6	Ti (0.61%)
			UBM-Cu	0.29%	0.000023	7440-50-8	Cu (2.42%)
			UBM-Cu	11.45%	0.000906	7440-50-8	Cu (96.96%)
Solder Ball	17.80%	0.001408	SAC405				
			Tin (Sn)	17.00%	0.001345	7440-31-5	95.50%
			Silver (Ag)	0.71%	0.000056	7440-22-4	4.00%
			Copper (Cu)	0.09%	0.000007	7440-50-8	0.50%
BSL	2.87%	0.000227	LC2350				
			Polyethylene Terephthalate	2.01%	0.000159	25038-59-9	60-80% (assumed 70% here)
			Silica	0.50%	0.000040	Trade Secret	10-25% (assumed 17.5% here)
			Epoxy Resin	0.17%	0.000014	Trade Secret	3-10% (assumed 6%)
			Acrylic Resin	0.17%	0.000014	Trade Secret	3-10% (assumed 6%)
Carbon Black	0.01%	0.000001	Trade Secret	<1% (assume 0.5%)			

**Notes:**

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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