



Device Material Content

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Package: 48 TQFP (1.4mm) with SnPb Plating
Total Device Weight 0.18 Grams

MSL: 3
Peak Reflow Temp: 240°C

August, 2008	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	2.05%	0.0037			Silicon chip	7440-21-3	Die size: 2.0 x 2.2 mm
Mold	76.40%	0.138	64.94%	0.117	Silica Fused	60676-86-0	Mold Compound Density between 1.7 and 2.1 grams/cc 80 to 90% Silica Fused (LSC uses 85% in our calculation) 3 to 10% Epoxy Resin (LSC uses 5% in our calculation). 2 to 10% Phenol Resin (LSC uses 5% in our calculation). 0.1 to 1% Antimony Trioxide (LSC uses 0.6% in our calculation) 0.1 to 1% Carbon black (LSC uses 0.6% in our calculation) 0 to 5% Other (LSC uses 3.8% in our calculation)
			3.82%	0.007	Epoxy Resin	-	
			3.82%	0.0069	Phenol Resin	-	
			0.46%	0.0008	Antimony Trioxide	1309-64-4	
			0.46%	0.0008	Carbon black	1333-86-4	
			2.90%	0.005	Other (trade secret)	-	
D/A Epoxy	0.25%	0.0004	0.20%	0.0004	Silver-filled epoxy	7440-22-4	Die attach epoxy Density: 4 grams/cc (silver content: 70-90%; LSC uses 80% in our calculation)
			0.05%	0.0001	Silver (Ag) other	-	
Wire	0.78%	0.0014			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per package lead; wire length 3 mm
Lead Plating	3.16%	0.0057	2.68%	0.0048	Tin (Sn)	7440-31-5	Plating is 85% Sn, 15% Pb; thickness is 0.015mm
			0.47%	0.0009	Lead (Pb)	7439-92-1	
Leadframe	17.36%	0.031	16.93%	0.030	Copper (Cu)	7440-50-8	Leadframe thickness is nominal (per Case Outline) Cu (LSC uses 97.5% in our calculation) 0 to 0.65% Si (LSC uses 0.4% in our calculation) 0 to 0.2% Zn (LSC uses 0.1% in our calculation) 0 to 0.25% Sn (LSC uses 0.2% in our calculation) 0 to 0.3% Cr (LSC uses 0.2% in our calculation) 0 to 3% Ni (LSC uses 1.5% in our calculation) 0 to 0.15% Mg (LSC uses 0.1% in our calculation)
			0.07%	0.00013	Silicon (Si)	7440-21-3	
			0.02%	0.00003	Zinc (Zn)	7440-66-6	
			0.03%	0.00006	Tin (Sn)	7440-31-5	
			0.03%	0.00006	Chromium (Cr)	7440-47-3	
			0.26%	0.00047	Nickel (Ni)	7440-02-0	
			0.02%	0.00003	Magnesium (Mg)	7439-95-4	

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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