Device Material Content

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Package: 144 TQFP with SnPb Plating

Total Device Weight 1.40 Grams

MSL: 3
Peak Reflow Temp: 225°C

August, 2008	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.21%	0.017			Silicon chip	7440-21-3	Die size: 5.84 x 7.19 mm
Mold	78.89%	1.105					Mold Compound Density between 1.7 and 2.1 grams/cc
			67.06%	0.939	Silica Fused	60676-86-0	80 to 90% Silica Fused (LSC uses 85% in our calculation)
			3.94%	0.055	Epoxy Resin	-	3 to 10% Epoxy Resin (LSC uses 5% in our calculation).
			3.94%	0.055	Phenol Resin	-	2 to 10% Phenol Resin (LSC uses 5% in our calculation).
			0.47%	0.007	Antimony Trioxide	1309-64-4	0.1 to 1% Antimony Trioxide (LSC uses 0.6% in our calculation)
			0.47%	0.007	Carbon black	1333-86-4	0.1 to 1% Carbon black (LSC uses 0.6% in our calculation)
			3.00%	0.042	Other (trade secret)	-	0 to 5% Other (LSC uses 3.8% in our calculation)
D/A Epoxy	0.15%	0.002			Silver-filled epoxy		
			0.12%	0.002	Silver (Ag)	7440-22-4	Die attach epoxy Density: 4 grams/cc
			0.03%	0.0004	other	-	(silver content: 70-90%; LSC uses 80% in our calculation)
Wire	0.30%	0.004			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per package lead; wire length 3 mm
Lead Plating	1.23%	0.017					
			1.04%	0.015	Tin (Sn)	7440-31-5	Plating is 85% Sn, 15% Pb; thickness is 0.015mm
			0.18%	0.003	Lead (Pb)	7439-92-1	
Leadframe	18.22%	0.255					Leadframe thickness is nominal (per Case Outline)
			17.77%	0.249	Copper (Cu)	7440-50-8	Cu (LSC uses 97.5% in our calculation)
			0.07%	0.0010	Silicon (Si)	7440-21-3	0 to 0.65% Si (LSC uses 0.4% in our calculation)
			0.02%	0.0003	Zinc (Zn)	7440-66-6	0 to 0.2% Zn (LSC uses 0.1% in our calculation)
			0.04%	0.0005	Tin (Sn)	7440-31-5	0 to 0.25% Sn (LSC uses 0.2% in our calculation)
			0.04%	0.0005	Chromium (Cr)	7440-47-3	0 to 0.3% Cr (LSC uses 0.2% in our calculation)
			0.27%	0.0038	Nickel (Ni)	7440-02-0	0 to 3% Ni (LSC uses 1.5% in our calculation)
			0.02%	0.0003	Magnesium (Mg)	7439-95-4	0 to 0.15% Mg (LSC uses 0.1% in our calculation)

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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