Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@lscc.com

Package: 176 TQFP (1.4mm) with matte Sn Plating

Total Device Weight 1.90 Grams

MSL: 3
Peak Reflow Temp: 260°C

August, 2008	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	0.89%	0.017			Silicon chip	7440-21-3	Die size: 4.00 x 5.05 mm
Mold	78.30%	1.488					Mold Compound Density between 1.7 and 2.1 grams/cc
			66.55%	1.264	Silica Fused	60676-86-0	80 to 90% Silica Fused (LSC uses 85% in our calculation)
			3.91%	0.074	Epoxy Resin	-	5 to 10% Epoxy Resin (LSC uses 5% in our calculation).
			3.91%	0.074	Phenol Resin	-	5 to 10% Phenol Resin (LSC uses 5% in our calculation).
			0.78%	0.015	Antimony Trioxide	1309-64-4	0.1% to 1% Antimony Trioxide (LSC uses 1% in our calculation)
			0.47%	0.009	Carbon black	1333-86-4	0.1 to 1% Carbon black (LSC uses 0.6% in our calculation)
			2.66%	0.051	Other (trade secret)	-	1 to 4% Other (LSC uses 3.4% in our calculation)
D/A Epoxy	0.11%	0.002			Silver filled epoxy	7440-22-4	(silver content: 70-90%; LSC uses 80% in our calculation) Die attach epoxy Density: 4 grams/cc
Wire	0.27%	0.005			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per package lead; wire length 3 mm
Lead Plating	1.10%	0.021			Tin (Sn)	7440-31-5	Plating is 100% Sn; thickness is 0.015mm
Leadframe	19.33%	0.367					Leadframe thickness is nominal (per Case Outline)
			18.85%	0.358	Copper (Cu)	7440-50-8	Cu (LSC uses 97.5% in our calculation)
			0.077%	0.0015	Silicon (Si)	7440-21-3	0 to 0.65% Si (LSC uses 0.4% in our calculation)
			0.02%	0.0004	Zinc (Zn)	7440-66-6	0 to 0.2% Zn (LSC uses 0.1% in our calculation)
			0.04%	0.0007	Tin (Sn)	7440-31-5	0 to 0.25% Sn (LSC uses 0.2% in our calculation)
			0.04%	0.0007	Chromium (Cr)	7440-47-3	0 to 0.3% Cr (LSC uses 0.2% in our calculation)
			0.29%	0.0055	Nickel (Ni)	7440-02-0	0 to 3% Ni (LSC uses 1.5% in our calculation)
			0.02%	0.0004	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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