# Device Material Content

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

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**Package:** 400 caBGA
**Total Device Weight** 0.739 Grams

**Package Code:** BG400
**Products:** LCMXO3-9400

Assembly: ATP
Size (mm): 17 x 17
Lead pitch (mm): 0.8
MSL: 3
Reflow max ($^{o}$C): 260

| | % of Total Pkg. Wt. | Weight (g) | % of Total Pkg. Wt. | Weight (g) | Substance | CAS # | % of Subst. | Notes / Assumptions: |
|---|---|---|---|---|---|---|---|---|
| **Die** | 1.85% | 0.0137 | | | Silicon chip | 7440-21-3 | 100.00% | Die size: 5.1 x 4.9 x 0.228 mm |
| **Mold Compound** | 51.97% | 0.3842 | | | | | | Mold Compound: Hitachi GE-110LS-V |
| | | | 3.64% | 0.0269 | Solid Epoxy Resin | - | 7.00% | |
| | | | 2.60% | 0.0192 | Phenol Resin | - | 5.00% | |
| | | | 44.17% | 0.3266 | Silica | 60676-86-0 | 85.00% | |
| | | | 1.30% | 0.0096 | Metal Hydroxide | - | 2.50% | |
| | | | 0.26% | 0.0019 | Carbon Black | 1333-86-4 | 0.50% | |
| **D/A Epoxy** | 0.26% | 0.0019 | | | | | | Die attach epoxy: Henkel QMI-529HT |
| | | | 0.22% | 0.00165 | Silver | 7440-22-4 | 87.00% | |
| | | | 0.02% | 0.00013 | Isobornyl Methacrylate | 7534-94-3 | 7.00% | |
| | | | 0.001% | 0.00001 | 2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane | 3388-04-3 | 0.50% | |
| | | | 0.01% | 0.00010 | Additive | - | 5.00% | |
| **Wire** | 0.80% | 0.0059 | | | | | | MKE Cu wire(Pd coated), 0.02mm dia |
| | | | 0.78% | 0.0058 | Copper (Cu) | 7440-50-8 | 97.90% | |
| | | | 0.02% | 0.0001 | Palladium (Pd) | 7440-05-3 | 2.10% | |
| **Solder Balls** | 18.95% | 0.1401 | | | | | | SAC305 |
| | | | 18.29% | 0.1352 | Tin (Sn) | 7440-31-5 | 96.50% | |
| | | | 0.57% | 0.0042 | Silver (Ag) | 7440-22-4 | 3.00% | |
| | | | 0.09% | 0.0007 | Copper (Cu) | 7440-50-8 | 0.50% | |
| **Substrate** | 16.42% | 0.1213 | | | | | | BT Resin CCL-HL832NX-A* |
| | | | 5.25% | 0.0388 | BT Resins | - | 32.00% | |
| | | | 11.16% | 0.0825 | Glass fiber | 65997-17-3 | 68.00% | |
| **Foil** | 5.83% | 0.0431 | | | | | | |
| | | | 4.51% | 0.0334 | Copper | 7440-50-8 | 77.39% | |
| | | | 1.11% | 0.0082 | Nickel plating | 7440-02-0 | 19.02% | |
| | | | 0.21% | 0.0015 | Gold plating | 7440-57-5 | 3.59% | |
| **Solder Mask** | 3.91% | 0.0289 | | | | | | Solder mask PSR4000 AUS 308 |
| | | | 0.00% | 0.0000 | Quartz | 14808-60-7 | 54.37% | |
| | | | 0.00% | 0.0000 | Dipropylene glycol monomethyl ether | 34590-94-8 | 7.33% | |
| | | | 0.00% | 0.0000 | Morpholine derivative | 71868-10-5 | 3.32% | |
| | | | 0.00% | 0.0000 | Silicon dioxide | 7631-86-9 | 3.00% | |
| | | | 0.00% | 0.0000 | Silica, amorphous | 112945-52-5 | 3.00% | |
| | | | 0.00% | 0.0000 | Carbon black | 1333-86-4 | 0.24% | |
| | | | 0.00% | 0.0000 | Trade secret ingredients | - | 28.74% | |

**Notes:** * 0.12% max. concentration (of total pkg wt.) of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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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Rev. F