# Device Material Content

## Package: TQFP (1.4mm)

<table>
<thead>
<tr>
<th>Package Code:</th>
<th>Assembly: ASEM</th>
<th>Lead pitch (mm): 0.5</th>
<th>Size (mm): 20 x 20 x 1.4</th>
<th>MSL: 3</th>
<th>Rework max (°C): 260</th>
</tr>
</thead>
</table>

### April, 2018

<table>
<thead>
<tr>
<th>Package</th>
<th>Total Device Weight</th>
<th>Package Code</th>
<th>Products:</th>
</tr>
</thead>
<tbody>
<tr>
<td>144 TQFP (1.4mm)</td>
<td>1.400 Grams</td>
<td>TN144</td>
<td>(LA) 4kV, XO, XP2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Total Pkg. Wt.</th>
<th>Weight (g)</th>
<th>% of Total Pkg. Wt.</th>
<th>Substance</th>
<th>CAS #</th>
<th>% of Subst.</th>
<th>Notes / Assumptions</th>
</tr>
</thead>
</table>

### Die

- Die: 1.21% 0.0170
- Substance: Silicon chip
- CAS #: 7440-21-3
- % of Subst.: 100.00%
- Notes / Assumptions: Die size: 3.35 x 3.35 mm

### Mold Compound

- Mold Compound: 79.42% 1.1120
- Substances:
  - Epoxy Resin: 4.77% 0.0667
  - Phenol Resin: 3.18% 0.0445
  - Carbon Black: 0.16% 0.0022
  - Silica: 70.92% 0.9930
  - Others: 0.40% 0.0056
- CAS #: 7440-21-3
- % of Subst.: 6.00%
- Notes / Assumptions: Mold Compound: Hitachi CEL9510HF10-U (ULA)

### D/A Epoxy

- D/A Epoxy: 0.15% 0.0021
- Substances:
  - Silver: 0.12% 0.00164
  - Esters & resins: 0.03% 0.00041
- CAS #: 7440-21-3
- % of Subst.: 80.00%
- Notes / Assumptions: Die attach: Henkel (Ablebond) 3230

### Wire

- Wire: 0.21% 0.0029
- Substances:
  - Gold (Au): 0.21% 0.0029
- CAS #: 7440-21-3
- % of Subst.: 80.00%
- Notes / Assumptions: 0.8 mil wire diameter; 1 wire for each package lead

### Plating

- Plating: 0.79% 0.0110
- Substances:
  - Tin (Sn): 0.79% 0.0110
- CAS #: 7440-21-3
- % of Subst.: 100.00%
- Notes / Assumptions: Plating is 100% Matte Sn, thickness is >10.2µm

### Leadframe

- Leadframe: 18.22% 0.2550
- Substances:
  - Copper (Cu): 17.62% 0.2466
  - Nickel (Ni): 0.55% 0.0077
  - Silicon (Si): 0.03% 0.0004
  - Magnesium (Mg): 0.01% 0.0001
  - Silver (Ag): 0.02% 0.0002
- CAS #: 7440-21-3
- % of Subst.: 96.79%
- Notes / Assumptions: C7025

### 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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