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www.spansion.com/support/lead\_free\_flash/index.ht



## Package Chemistry Substances Analysis Table

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25 Feb 2015

4 Stack Die

**Contact: [product.sustainability@spansion.com](mailto:product.sustainability@spansion.com)**
**Product is RoHS Compliant**

**Package Type:** TSOP 048 (Pb-free)  
**Dimension:** 20x12x1.2 mm  
**Weight of Unit Package:** 512.9 mg  
**Temperature rating:** 260 °C  
**MSL:** 3

| Description                         | Chemicals Present              | CAS Number   | unit weight(mg) | unit weight/package (%) | Amount (ppm)       |
|-------------------------------------|--------------------------------|--------------|-----------------|-------------------------|--------------------|
| <b>Silicon Die</b>                  | #1 Silicon                     | 7440-21-3    | 34.0            | 6.6                     | 66,284             |
|                                     | subtotal                       |              | 34.0            | 6.6                     | 66,284             |
| <b>Bond wire</b>                    | #1 Gold                        | 7440-57-5    | 0.5             | 0.1033                  | 1,033              |
|                                     | subtotal                       |              | 0.5             | 0.103                   | 1,033              |
| <b>Die Attach Film</b>              | #1 Acryl copolymer             | Trade secret | 1.42            | 0.2768                  | 2,768              |
| <a href="#">WL0020-02DS [INNOX]</a> | #2 Epoxy                       | 29690-82-2   | 0.71            | 0.1384                  | 1,384              |
|                                     | #4 Hardner                     | Trade secret | 0.20            | 0.0388                  | 388                |
|                                     | #2 Silica                      | 7631-86-9    | 0.51            | 0.0997                  | 997                |
|                                     | subtotal                       |              | 2.84            | 0.55                    | 5,537              |
| <b>Leadframe</b>                    | #1 Copper                      | 7440-50-8    | 123.2           | 24.0                    | 240,101            |
| <a href="#">C7025 [Shinko]</a>      | #2 Nikel                       | 7440-02-0    | 3.9             | 0.8                     | 7,582              |
|                                     | #3 Silicon                     | 7440-21-3    | 1.361           | 0.2654                  | 2,654              |
|                                     | #4 Magnesium                   | 7439-95-4    | 0.454           | 0.0885                  | 885                |
|                                     | subtotal                       |              | 128.86          | 25.12                   | 251,222            |
| <b>Internal Plating</b>             | #1 Silver                      | 7440-22-4    | 0.13            | 0.0                     | 253                |
|                                     | subtotal                       |              | 0.1             | 0.0                     | 502,697            |
| <b>Mold compound</b>                | #1 Silica, vitreous            | 60676-86-0   | 292.77          | 57.1                    | 570,758            |
| <a href="#">SG-8300ES [Samsung]</a> | #2 Epoxy resin, Phenolic resin | Trade secret | 24.11           | 4.70                    | 47,004             |
|                                     | #3 Phenolic resin              | Trade secret | 17.22           | 3.4                     | 33,574             |
|                                     | #4 Quartz(SiO2)                | 14808-60-7   | 3.44            | 0.67                    | 6,715              |
|                                     | #5 Cristobalite                | 14464-46-1   | 3.44            | 0.67                    | 6,715              |
|                                     | # 6 Carbon black               | 1333-86-4    | 3.44            | 0.67                    | 6,715              |
|                                     | subtotal                       |              | 344.4           | 67.1                    | 671,479            |
| <b>External Plating</b>             | #1 Tin                         | 7440-31-5    | 2.2             | 0.42                    | 4,192              |
|                                     | subtotal                       |              | 2.2             | 0.4                     | 4,192              |
| <b>TOTAL PACKAGE</b>                |                                |              | <b>512.9</b>    | <b>100.0</b>            | <b>1,000,000.0</b> |

#### Disclaimer:

In general, two decimal values are shown. However, some variance remains from package to package. The mass values presented are thought to be accurate to within 20 percent. The report does not include materials not intentionally added to our products (impurities), or material concentrations less than 1 ppm.