

Material Declaration Data Sheet (MDDS)



| | |
|----------------|--------------------------|
| Customer | Nordic |
| Device Name | nRF52810-QFAA |
| Published Date | 26-Jun-19 |
| Published By | Noreen Lizette Carbonell |

| Material Type | Material Name | Supplier Name | Material Weight(g) | Material Weight(mg) | Material % in Product | Substance Name | CAS# | Substance % in Material | Substance Weight(g) | Substance Weight(mg) | PPM in Product | |
|------------------------------|---------------|--------------------|--------------------|---------------------|-----------------------|--|-------------|-------------------------|---------------------|----------------------|----------------|------------|
| Leadframe | C194 | HDS | 0.049292 | 49.29 | 47.2997% | Copper (Cu) | 7440-50-8 | 97.70% | 0.048158 | 48.16 | 462118.41 | |
| | | | | | | Iron (Fe) | 7439-89-6 | 2.30% | 0.001134 | 1.13 | 10878.94 | |
| Leadframe Internal Plating | Ag plating | HDS | 0.000933 | 0.93 | 0.8953% | Silver (Ag) | 7440-22-4 | 100.00% | 0.000933 | 0.93 | 8952.90 | |
| Leadframe External Plating | Sn plating | Sytron | 0.002889 | 2.89 | 2.7722% | Tin (Sn) | 7440-31-5 | 100.00% | 0.002889 | 2.89 | 27722.34 | |
| EMC (Epoxy Molding Compound) | G700 | Sumitomo | 0.047487 | 47.49 | 45.5677% | Epoxy Resin | Proprietary | 5.00% | 0.002374 | 2.37 | 22783.84 | |
| | | | | | | Phenol Resin | 205830-20-2 | 5.00% | 0.002374 | 2.37 | 22783.84 | |
| | | | | | | Silica Amorphous A | 60676-86-0 | 75.00% | 0.035615 | 35.62 | 341757.67 | |
| | | | | | | Silica Amorphous B | 7631-86-9 | 14.50% | 0.006886 | 6.89 | 66073.15 | |
| | | | | | | Carbon Black | 1333-86-4 | 0.50% | 0.000237 | 0.24 | 2278.38 | |
| Die | Silicon | Customer Consigned | 0.002933 | 2.93 | 2.8145% | Silicon (Si) | 7440-21-3 | 100.00% | 0.002933 | 2.93 | 28144.55 | |
| Die Attach | AMK-06 | Henkel | 0.000299 | 0.30 | 0.2869% | Silver | 7440-22-4 | 78.00% | 0.000233 | 0.23 | 2237.94 | |
| | | | | | | Carbocyclic acrylate | Proprietary | 10.00% | 0.000030 | 0.03 | 286.92 | |
| | | | | | | Bismaleimide resin | 13676-54-5 | 10.00% | 0.000030 | 0.03 | 286.92 | |
| | | | | | | Acrylate | Proprietary | 1.00% | 0.000003 | 0.00 | 28.69 | |
| | | | | | | 2-(3,4-Epoxy-cyclohexyl)ethyltrimethox | 3388-04-3 | 1.00% | 0.000003 | 0.00 | 28.69 | |
| Bonding Wire | Au PCC | MKE | 0.000379 | 0.38 | 0.3637% | Copper (Cu) | 7440-50-8 | 96.00% | 0.000364 | 0.36 | 3491.34 | |
| | | | | | | Palladium (Pd) | 7440-05-3 | 3.00% | 0.000011 | 0.01 | 109.10 | |
| | | | | | | Gold (Au) | 7440-57-5 | 1.00% | 0.000004 | 0.00 | 36.37 | |
| | | | | | | | | | | | | |
| | | | 0.104212 | 104.21 | 100.0000% | | | | 700.00% | 0.104212 | 104.21 | 1000000.00 |
| | | | | | | | | | | | | |

Calculated

Calculated

Disclaimer

The calculators identified in this report are used solely for determining package and weight composition and not for any other purpose, including but not limited to RoHS compliance. These calculators are used at the request of Customer in accordance with Amkor's current Terms and Conditions. Customer acknowledges that certain data used to generate the package and weight composition are provided by third parties and may not be validated and as such, the associated calculations performed herein are unproven and may produce inconclusive results.

All information generated by the use of these calculators is provided "As Is." Amkor makes no warranty or representation, whatsoever, as to the sufficiency or accuracy of any such information it has disclosed hereunder or as to the results to be obtained therefrom and assumes no responsibility arising from any use or misuse thereof.