

**Material Declaration Data Sheet (MDDS)**



Customer	Nordic
Device Name	nRF52811-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	Ag plating	HDS	0.000933	0.93	0.8953%	Silver (Ag)	7440-22-4	100.00%	0.000933	0.93	8952.90	
Leadframe external	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%				700.90%	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.