Material Declaration Data Sheet (MDDS)

Customer	NORDIC
Device Name	nRF52832-QFAA
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Die Silicon Die Customer Consigned 0.005700 5.70 5.45% Silicon (5) 7440-21-3 100.00% 0.00570000 5.700000 5.700000	PPM in Product	Substance Weight(mg)	Substance Weight(g)	Substance % in Material	CAS#	Substance Name	Material % in Product	Material Weight(mg)	Material Weight(g)	Supplier Name	Material Name	Material Type
Leadframe C194	54493.31	5.700000	0.005700000	100.00%	7440-21-3	Silicon (Si)	5.45%	5.70	0.005700	Customer Consigned	Silicon Die	Die
Leadframe C194	11076.00	1.158550	0.001158550	2.35%	7439-89-6	Iron (Fe)	47.13%	49.30	0.049300	HDS		
Cinc (Zn) 7440-66-6 0.12% 0.000059160 0.059160 0.059160 Copper (Cu) 7440-50-8 97.50% 0.048067500 48.067500 48.067500 48.067500 0.00000000 0.00000000 0.00000000	141.40	0.014790	0.000014790	0.03%	7723-14-0	Phosphorus (P)					C104	Loadframa
Leadframe Plating Silver Plating HDS 0.000900 0.90 0.86% Silver 7440-22-4 100.00% 0.00090000 0.900000 0.900000	565.58	0.059160	0.000059160	0.12%	7440-66-6	Zinc (Zn)					C194	Leaurraine
Die Attach AMK-06 Henkel AMK-06 Acrylate Proprietary 20.00% 0.000100000 0.100000 0.025000 Acrylate Proprietary 5.00% 0.00025000 0.025000 0.025000 Acrylate Proprietary 5.00% 0.000025000 0.025000 Acrylate Proprietary 5.00% 0.000025000 0.025000 Acrylate Proprietary 5.00% 0.000025000 0.025000 Acrylate Proprietary 5.00% 0.00002500 0.025000 Acrylate Proprietary 5.00% 0.00000500 0.000005 Acrylate Proprietary 5.00% 0.000025000 0.00005 Acrylate Proprietary 5.00% 0.00000500 0.0000500 Acrylate Proprietary 5.00% 0.0000500 0.0000500 Acrylate Proprietary 5.00% 0.00000500 0.0000500 Acrylate Proprietary 5.00% 0.00005000 0.0000500	459536.33	48.067500	0.048067500	97.50%	7440-50-8	Copper (Cu)						
Die Attach AMK-06 Henkel Henkel Bootson Boot	8604.21	0.900000	0.000900000	100.00%	7440-22-4	Silver	0.86%	0.90	0.000900	HDS	Silver Plating	Leadframe Plating
Die Attach AMK-06 Henkel D.000500 D.50 D.48% Bismaleimide resin Proprietary D.00% D.000025000 D.025000 D.025	3322.18	0.347500	0.000347500	69.50%	7440-22-4	Silver	0.48%	0.50	0.000500	Henkel		
Acrylate Proprietary 5.0% 0.00025000 0.025000	956.02	0.100000	0.000100000	20.00%	Proprietary	Carbocyclic acrylate						
PCC MKE 0.00300 0.0025000 0.002500	239.01	0.025000	0.000025000	5.00%	Proprietary	Bismaleimide resin					АМК-06	Die Attach
Bonding Wire PCC MKE 0.00300 0.30 0.29%	239.01	0.025000	0.000025000	5.00%	Proprietary	Acrylate						
Bonding Wire PCC MKE 0.00300 0.30 0.29% Palladium (Pd) 7440-05-3 2.50% 0.00007496 0.007496 0.007496 Silver (Ag) 7440-22-4 0.00% 0.00000005 0.0	23.90	0.002500	0.000002500	0.50%	3388-04-3	2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane						
Silver (Ag) 7440-22-4 0.00% 0.00000005 0.000005	2796.37	0.292500	0.000292500	97.50%	7440-50-8	Copper (Cu)	0.29%	0.30	0.000300	MKE		
Molding Compound G700 Sumitomo Sumitomo Bulletin Francisco Francis	71.66	0.007496	0.000007496	2.50%	7440-05-3	Palladium (Pd)					PCC	Bonding Wire
Molding Compound G700 Sumitomo Sumitomo 45.00 45.00 45.00 45.00 45.00 Phenol Resin Proprietary 5.00% 0.002250000 2.250000 5liica Amorphous A 60676-86-0 70.00% 0.031500000 31.500000 5liica Amorphous B 7631-86-9 19.00% 0.008550000 8.550000 Carbon Black 1333-86-4 1.00% 0.000450000 0.450000	0.04	0.000005	0.000000005	0.00%	7440-22-4	Silver (Ag)						
Molding Compound G700 Sumitomo 0.045000 45.00 45.00 45.00 5lika Amorphous A 60676-86-0 70.00% 0.031500000 31.500000 5lika Amorphous B 7631-86-9 19.00% 0.008550000 8.550000 Carbon Black 1333-86-4 1.00% 0.000450000 0.450000	21510.52	2.250000	0.002250000	5.00%	Proprietary	Epoxy Resin		45.00	0.045000	Sumitomo		
Silica Amorphous B 7631-86-9 19.00% 0.008550000 8.550000 Carbon Black 1333-86-4 1.00% 0.000450000 0.450000	21510.52	2.250000	0.002250000	5.00%	Proprietary	Phenol Resin						
Carbon Black 1333-86-4 1.00% 0.000450000 0.450000	301147.23	31.500000	0.031500000	70.00%	60676-86-0	Silica Amorphous A					G700	Molding Compound
	81739.96	8.550000	0.008550000	19.00%	7631-86-9	Silica Amorphous B						
External Plating Matte Sn Plating Sytron 0.002900 2.90 2.77% Tin 7440-31-5 100.00% 0.002900000 2.900000	4302.10	0.450000	0.000450000	1.00%	1333-86-4	Carbon Black						
	27724.67	2.900000	0.002900000	100.00%	7440-31-5	Tin	2.77%	2.90	0.002900	Sytron	Matte Sn Plating	External Plating
0.104600 104.60 100.00% 700.00% 0.104600000 104.600000	1000000.00	104.600000	0.104600000	700.00%	•		100.00%	104.60	0.104600		-	

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.

Note: Data is published based on the "Calculated Weight"