

MATERIAL COMPOSITION DECLARATION

Date: 9/7/2017
MD Revision: Rev. B
Customer: Nordic
Package Type: SMLF 5X5 32lds
Target Device: nRF51802-QCAA
Total Package Weight: 76.776 mg

Material Name	Material Type	Manufacturer	Material Weight (mg)	Material Percentage (%)	Substances	CAS No.	Composition Percentage (%)	Composition Weight in Product (mg)	PPM
Die	Silicon	Customer Consigned	6.53400	8.51%	Silicon	7440-21-3	100.00%	6.5340	85,105
Leadframe	C194	HDS	40.05308	52.17%	Copper	7440-50-8	97.50%	39.0518	508,645
					Iron	7439-89-6	2.35%	0.9412	12,260
					Zinc	7440-66-6	0.12%	0.0481	626
					Metallic Phosphorus	7723-14-0	0.03%	0.0120	157
Frame Plating	Ag	HDS	0.89611	1.17%	Silver	7440-22-4	100.00%	0.8961	11,672
Molding Compound	G700	Sumitomo	26.14925	34.06%	Epoxy Resin	Proprietary	7.50%	1.9612	25,544
					Phenol Resin	205830-20-2	6.50%	1.6997	22,138
					Silica Amorphous A	60676-86-0	70.00%	18.3045	238,414
					Silica Amorphous B	7631-86-9	15.50%	4.0531	52,792
					Carbon Black	1333-86-4	0.50%	0.1307	1,703
Die Attach	AMK06	Henkel	1.30930	1.71%	Silver	7440-22-4	85.00%	1.1129	14,495
					Carbocyclic acrylate	Proprietary	10.00%	0.1309	1,705
					2-Propenoic acid,2-methyl-,2-[[2,3,3a,4,7,7a(or 3a,4,5,6,7,7a)-hexahydro-4,7-methano-1H-indenyl]oxy]ethyl ester	68586-19-6	4.50%	0.0589	767
					2-(3,4-Epoxy)cyclohexyl)ethyltrimethoxysilane	3388-04-3	0.50%	0.0065	85
Copper wire	Copper 4N	Heraeus	0.31954	0.42%	Copper	7440-50-8	99.990%	0.3195	4,162
					Others	unknown	0.010%	0.0000	0.42
External plating	Matte Tin	Sytron	1.51475	1.97%	Tin	7440-31-5	100.000%	1.5148	19,729

Total Mass (mg) 76.776

DISCLAIMER on 'Package Weight and Material Composition calculator': 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.