



Material Declaration
Device: GRF5110

RoHs Compliant: Yes
Conflict Mineral Check: Yes

No.	Part Name	Material Name	Component Wt. (mg)	Material Content (Element)	CAS Number	Element Wt (%)	Element Wt (mg)	Wt % Of Total Unit Wt	PPM
1	Leadframe	Copper Alloy	9.028	Cu	7440-50-8	97.52	8.8038	30.132%	301318.33
				Fe	7439-89-6	2.3	0.2076	0.711%	7106.56
				Zn	7440-66-6	0.15	0.0135	0.046%	463.47
				P	7723-14-0	0.03	0.0027	0.009%	92.69
2	Die Attach Material	Conductive Paste	0.062	Silver	7440-22-4	75	0.0463	0.159%	1585.79
				Resin	Trade Secret	15	0.0093	0.032%	317.16
				Hardener	Trade Secret	7	0.0043	0.015%	148.01
				Epoxy	Trade Secret	2	0.0012	0.004%	42.29
				Proprietary	Trade Secret	1	0.0006	0.002%	21.14
3	Gold Wire	Gold	0.079	Au	7440-57-5	99.99	0.0788	0.270%	2695.44
				Others	Proprietary	0.01	0.0000	0.000%	0.27
4	Internal Plating	NiPdAu	0.031	Ni	7440-02-0	92.23	0.0282	0.097%	966.67
				Pd	7440-05-3	7.47	0.0023	0.008%	78.29
				Au	7440-57-5	0.3	0.0001	0.000%	3.14
5	External Plating	NiPdAu	0.041	Ni	7440-02-0	92.23	0.0374	0.128%	1281.40
				Pd	7440-05-3	7.47	0.0030	0.010%	103.78
				Au	7440-57-5	0.3	0.0001	0.000%	4.17
6	Mold Compound	Filled Epoxy	19.526	Epoxy resin A	Trade secret	3	0.5858	2.005%	20049.34
				Epoxy resin B	Trade secret	3	0.5858	2.005%	20049.34
				Phenol resin	Trade secret	3	0.5858	2.005%	20049.34
				Silica(Amorphous) A	60676-86-0	75	14.6448	50.123%	501233.53
				Silica(Amorphous) B	7631-86-9	15	2.9290	10.025%	100246.71
				Metal hydroxide	Trade secret	0.5	0.0976	0.334%	3341.56
				Carbon Black	1333-86-4	0.5	0.0976	0.334%	3341.56
7	Die	GaAs	0.452	GaAs	1303-00-0	100	0.4517	1.546%	15460.01
Total Weight =			29.218						

- Note:
- (A) Element Wt. Composition is derived from MSDS / Subcon Data
 - (B) Component Wt. may be based on assembly of generic parts
 - (C) Internal and External Plating weight is based on nominal plating thickness
 - (D) Guerrilla RF collaborates closely with our supply chain partners to make reasonable effort of working accuracy of data but in no terms guarantees the degree of accuracy of stated data.

More Info: <https://www.guerrilla-rf.com/environmental>

Questions: environmental@guerrilla-rf.com