



Package Chemistry Substances Analysis Table

Package Type:	VLD 063 (Pb-free solder balls)
Dimension:	11.0x 9.0 mm
Weight of Unit Package:	162 mg
Temperature rating:	260°C
MSL:	3
Assembly Location:	BKK
Product is RoHS Compliant	

Description	Chemicals Present	CAS Number	unit weight(mg)	unit weight/package (%)	Amount (ppm)
Silicon Die	#1 Silicon	7440-21-3	34.2391	21.1075	211,075
	subtotal		34.2391	21.1075	211,075
Bond wire	#1 Copper	7440-50-8	0.0016	0.0010	10
	#2 Palladium (Pd)	7440-05-3	0.0000	0.0000	0
	subtotal		0.0016	0.0010	10
Die Attach	#1 Epoxy resins	Trade secret	0.0235	0.0145	145
	#9 SiO2 Filler	68611-44-9	0.0059	0.0036	36
subtotal			0.0294	0.0181	181
Substrate	#1 Aluminum Hydroxide	21645-51-2	5.7915	3.5703	35,703
	#2 Copper	7440-50-8	14.1926	8.7494	87,494
	#3 Gold	7440-57-5	0.1892	0.1166	1,166
	#4 Nickel	7440-02-0	1.5860	0.9777	9,777
	#5 Epoxy resin	9003-36-5	8.8171	5.4355	54,355
	#6 SiO2 Glass Cloth	65997-17-3	11.3603	7.0033	70,033
subtotal			41.9366	25.8527	258,527
Mold compound	#1 SiO2 Filler	60676-86-0	57.7868	35.6240	356,240
	#2 Carbon Black	1333-86-4	0.1700	0.1048	1,048
	#3 Epoxy resin	Trade secret	9.4159	5.8046	58,046
	#4 Phosphoric organic catalyst	Trade secret	0.4079	0.2515	2,515
	#5 Metal Oxides	Trade secret	0.2040	0.1257	1,257
subtotal			67.9845	41.9106	419,106
Solder ball	#1 Tin	7440-31-5	17.3913	10.7213	107,213
	#2 Silver	7440-22-4	0.5407	0.3333	3,333
	#3 Copper	7440-50-8	0.0901	0.0556	556
subtotal			18.0221	11.1101	111,101
TOTAL PACKAGE			162.2133	100.0000	1,000,000

Disclaimer:

In general, four decimal values are shown. However, some variance remains from package to package. The mass values presented are thought to be accurate to within 20 percent. The report does not include materials not intentionally added to our products (impurities), or material concentrations less than 1 ppm.

Document History Page

Document Title: Material Declaration Datasheet (MDDS) - FBGA063 (VLD063) - BKK - CuPd Wire
Document Number: 002-12925

Rev.	ECN No.	Orig. of Change	Description of Change
**	5266940	AAC	Initial Release.