Package Chemistry Substances Analysis Table

Package Type:	**VDL 044** (Pb-free solder balls)
Dimension:	**5.0 x 7.5 mm**
Weight of Unit Package:	**94 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	6.1435	6.5325	65,325
	subtotal			6.1435	6.5325	65,325
Bond wire	#1	Gold	7440-57-5	0.3546	0.3770	3,770
	subtotal			0.3546	0.3770	3,770
Die Attach	#1	Epoxy resin	Trade Secret	0.3888	0.4134	4,134
	#2	Polytetrafluoroethylene	9002-84-0	0.3181	0.3383	3,383
	subtotal			0.7069	0.7517	7,517
Substrate	#1	Aluminum Hydroxide	21645-51-2	2.2425	2.3845	23,845
	#2	Copper	7440-50-8	5.5440	5.8950	58,950
	#3	Gold	7440-57-5	0.0543	0.0577	577
	#4	Nickel	7440-02-0	0.3254	0.3460	3,460
	#5	Epoxy resin	Trade Secret	41.8287	44.4769	444,769
	#6	SiO2 Glass Cloth	65997-17-3	4.3988	4.6772	46,772
	subtotal			54.3937	57.8373	578,373
Mold compound	#1	Silica (fused)	60676-86-0	24.6783	26.2407	262,407
	#2	Carbon Black	1333-86-4	0.0558	0.0593	593
	#3	Epoxy resin	Trade Secret	3.0116	3.2023	32,023
	#4	Phosphoric organic catalyst	Trade Secret	0.1394	0.1483	1,483
	subtotal			27.8851	29.6505	296,505
Solder ball	#1	Tin	7440-31-5	4.4823	4.7661	47,661
	#2	Silver	7440-22-4	0.0547	0.0582	582
	#3	Copper	7440-50-8	0.0228	0.0243	243
	#4	Nickel	7440-02-0	0.0023	0.0024	24
	subtotal			4.5622	4.8510	48,510
			TOTAL PACKAGE	**94.0459**	**100.0000**	**1,000,000**

Disclaimer:

In general, four decimal values are shown. However, some varience 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) - FBGA044 (VDL044) - BKK - Au Wire
Document Number: 002-12861

Rev.	ECN No.	Orig. of Change	Description of Change
**	5260021	AAC	NEW RELEASE