



## Package Chemistry Substances Analysis Table

<b>Package Type:</b>	<b>LAE 064</b> (Pb-free solder balls)
<b>Dimension:</b>	<b>9 x 9 mm</b>
<b>Weight of Unit Package:</b>	<b>189.8mg</b>
<b>Temperature rating:</b>	<b>260°C</b>
<b>MSL:</b>	<b>3</b>
<b>Assembly Location:</b>	<b>BKK</b>
<b>Product is RoHS Compliant</b>	

Description	Chemicals Present	CAS Number	unit weight(mg)	unit weight/package (%)	Amount (ppm)
<b>Silicon Die</b>	#1 Silicon	7440-21-3	7.6527	4.0326	40,326
	<b>subtotal</b>		<b>7.6527</b>	<b>4.0326</b>	<b>40,326</b>
<b>Bond wire</b>	#1 Copper	7440-50-8	0.1932	0.1018	1,018
	#2 Palladium (Pd)	7440-05-3	0.0033	0.0018	18
<b>subtotal</b>			<b>0.1965</b>	<b>0.1036</b>	<b>1,036</b>
<b>Die Attach</b>	#1 Epoxy resin	Trade Secret	0.4670	0.2461	2,461
	#2 Polytetrafluoroethylene	9002-84-0	0.3821	0.2013	2,013
<b>subtotal</b>			<b>0.8490</b>	<b>0.4474</b>	<b>4,474</b>
<b>Substrate</b>	#1 Aluminum Hydroxide	21645-51-2	7.2657	3.8287	38,287
	#2 Copper	7440-50-8	8.0995	4.2681	42,681
	#3 Gold	7440-57-5	0.0434	0.0228	228
	#4 Nickel	7440-02-0	0.2293	0.1208	1,208
	#5 Epoxy resin	9003-36-5	16.7780	8.8413	88,413
	#6 SiO2 Glass Cloth	65997-17-3	14.2520	7.5102	75,102
<b>subtotal</b>			<b>46.6677</b>	<b>24.5921</b>	<b>245,921</b>
<b>Mold compound</b>	#1 Silica (fused)	60676-86-0	68.8712	36.2924	362,924
	#2 Carbon Black	1333-86-4	0.2026	0.1067	1,067
	#3 Epoxy resin	Trade Secret	11.2220	5.9135	59,135
	#4 Phosphoric organic catalyst	Trade Secret	0.2431	0.1281	1,281
	#5 Metal Oxides	Trade Secret	0.4861	0.2562	2,562
<b>subtotal</b>			<b>81.0250</b>	<b>42.6970</b>	<b>426,970</b>
<b>Solder ball</b>	#1 Tin	7440-31-5	51.5084	27.1429	271,429
	#2 Silver	7440-22-4	1.6013	0.8438	8,438
	#3 Copper	7440-50-8	0.2669	0.1406	1,406
<b>subtotal</b>			<b>53.3765</b>	<b>28.1273</b>	<b>281,273</b>
<b>TOTAL PACKAGE</b>			<b>189.7674</b>	<b>100.0000</b>	<b>1,000,000</b>

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) - FBGA064 (LAE064) - BKK - CuPd Wire  
Document Number: 002-12945

Rev.	ECN No.	Orig. of Change	Description of Change
**	5268370	AAC	Initial Release.