Package Material Composition and Mass Calculation

Customer: GSI
Package: 14X22 HFC BGA 260L
Device Type: GS8131xxxxxGK
Die Size: 12.189x12.635 mm
Total Pck. Weight (mg): 1821.7

Provided By: IvanRC Chen
Date: 2015/12/19

	name	composition	CAS No.	%	mg.(ave)	mg.	%	PPM
underfill	ASE UA32					26	1.43	14,273
		1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10~20	3.90		0.21	2,141
		Bisphenol F type liquid epoxy resin	9003-36-5	5~15	2.60		0.14	1,427
		Bisphenol A type liquid epoxy resin	25068-38-6	5>	0.65		0.04	357
		Amine type hardener	trade secret	5~15	2.60		0.14	1,427
		Silicon dioxide	60676-86-0	55~65	15.47		0.85	8,492
		Carbon black	1333-86-4	1>	0.13		0.01	71
		Additive	trade secret	5>	0.65		0.04	357
Substrate	AUS 320					412.9	22.67	226,660
	HL832NX-A+GHPL							
	Immersion Tin							
	Cu plating							
	Cu foil							
							0.00	0
	SOP(SAC 305)							
Thermally conductive silicone a	AD01					11	0.604	6,038
		Aluminum oxide	1344-28-1	45	4.95		0.27	2,717
		Vinylpolydimethylsiloxane	68083-19-2	27.5	3.03		0.17	1,661
		Vinyl containing resin	68584-83-8	3	0.33		0.02	181
		Treated Filler	68909-20-6	24.5	2.70		0.15	1,479
Die	Silicon	Silicon	7440-21-3	100	162.60	162.6	8.926	89,259
Bump	98.2Sn/1.8Ag					9.3	0.511	5105.192
		98.2Sn of Bump	7440-31-5	98.2	9.13		0.501	5013.298
		1.8Ag of Bump	7440-22-4	1.8	0.17		0.009	91.893
Solder ball	SnAgCu 95.5/4/0.5_0.6mm					223.8	12.29	122,854
		Tin	7440-31-5	95.5	213.73		11.73	117,326
		Silver	7440-22-4	4.0	8.95		0.49	4,914
		Copper	7440-50-8	0.5	1.12		0.06	614
Heatslug	(Copper/Nickel/Chrome)					976.075	53.58	535,812
		Copper	7440-50-8	99.35	970		53.23	532,329
		Nickel	7440-02-0	0.6	5.86		0.32	3,215
		Chrome	-	0.05	0.49		0.03	268
Total						1821.675	100	1000000