

LTM4677 144LD BGA-PBF 16mm X 16mm X 5.01mm (TABLE OF MATERIAL DECLARATION)

This Package is RoHS compliant per EU RoHS Directive 2003/95/EC.

It contains less than 100ppm cadmium (Cd) and less than 1,000ppm of each - lead (Pb), mercury (Hg), hexavalent chromium (Cr+) polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE)

No.	Part Name	Material Name	Component Weight (gram)	Materials Analysis (element)	CAS Number	Material Mass (gram)	Materials Analysis (weight %)
1	Substrate	Circuit Board	0.3076	Bismaleimide/Triazine Resin/Filler Substances (Silica Crystalline)	105391-33-1 1156-51-0/9003-36-5/21645-51-2 non-disclosure	0.06826	22.20
				Continuous Filament Fiber Glass	65997-17-3	0.06054	19.68
				Copper Metal	7440-50-8	0.15113	49.14
				Zinc	7440-66-6	0.00001	0.00
				Chromium(III) oxide	1308-38-9	0.00001	0.00
				Silver coated Copper powder	7440-50-8	0.00076	0.25
				Epoxy Resin	non-disclosure	0.00011	0.04
				1-Cyanoethyl-2-Undecylimidazole	23996-16-9	0.00001	0.00
				Curing reagent	*non-disclosure	0.00001	0.00
				Acrylic Resin	non-disclosure	0.01322	4.30
				Copper Compounds	147-14-8	0.00006	0.02
				Barium Compounds	7727-43-7	0.00693	2.25
				Silica amorphous	7631-86-9	0.00009	0.03
				Talc;not containing fibers like asbestos	14807-96-6	0.00080	0.26
				Aromatic carbonyl compounds	non-disclosure	0.00075	0.25
				Cyanoguanidine	461-58-5	0.00002	0.01
				Amine compounds	non-disclosure	0.00010	0.03
				Leveling agent and others	non-disclosure	0.00030	0.10
				Nickel	7440-02-0	0.00389	1.26
				Gold	7440-57-5	0.00050	0.16
				Ecotoxic substances	7440-38-2 7440-28-0	0.00005	0.02
2	Solder Paste	Alloy	0.0132	Tin (Sn)	7440-31-5	0.01250	95.00
				Antimony (Sb)	7440-36-0	0.00066	5.00
3	Components	Passive/Active	1.2278	Iron Powder (Fe)	7439-89-6	0.95930	78.13
				Copper (Cu)	7440-50-8	0.23661	19.27
				Nickel (Ni)	7440-02-0	0.00394	0.32
				Tin (Sn)	7440-31-5	0.00816	0.66
				Ceramic (Ba) Compounds	12047-27-7	0.01977	1.61
				SEE LTC WEBSITE	LTC WEBSITE	0.08057	100.00
3(ii)	FC-DFN		0.0469				
	Active Ics	Silicon		Silicon (Si)	7440-21-3	0.00234	4.98
	Solder Paste	Alloy		Phenolic Resin	54208-63-8	0.00009	0.19
	Encapsulation	Epoxy Resin		Silver (Ag)	7440-22-4	0.00035	0.75
				Carbon Black	1333-86-4	0.00026	0.55
				Epoxy Resin	29690-82-2	0.00487	10.39
				Silica (Si)	60676-86-0	0.02047	43.65
	Lead frame	Lead frame		Copper (Cu)	7440-50-8	0.01662	35.44
				Iron (Fe)	7439-89-6	0.00041	0.87
				Zinc (Zn)	7440-66-6	0.00002	0.05
	Terminal Finish	Precious Metals		Gold (Au)	7440-57-5	0.00000	0.01
				Nickel(Ni)	7440-02-0	0.00040	0.85

				Paladium(Pd)	5/3/7440	0.00004	0.08
	Wire	Copper		Copper (Cu)	7440-50-8	0.00103	2.19
3(iii)	FC-DFN		0.0634				
	Active Ics	Silicon		Silicon (Si)	7440-21-3	0.00089	1.40
		Copper Clip		Copper (Cu)	7440-50-8	0.00709	11.17
	Clip			Iron (Fe)	7439-89-6	0.00017	0.28
	Solder Paste	Alloy		Zinc (Zn)	7440-66-6	0.00001	0.01
				Lead (Pb)	7439-92-1	0.00165	2.60
				Silver (Ag)	7440-22-4	0.00004	0.07
				Tin (Sn)	7440-31-5	0.00009	0.14
	Encapsulation	Epoxy Resin		Carbon Black	1333-86-4	0.00013	0.20
				epoxy resin	29690-82-2	0.00064	1.01
				Phenolic Resin	9003-35-4	0.00064	1.01
				Silica (Si)	60676-86-0	0.01138	17.93
	Lead frame	Lead frame		Copper (Cu)	7440-50-8	0.01769	27.88
				Iron (Fe)	7439-89-6	0.00044	0.69
				Zinc (Zn)	7440-66-6	0.00002	0.04
	Terminal Finish	Copper Alloy		Tin (Sn)	7440-31-5	0.02254	35.53
	Wire Bond	Precious Metals		Gold (Au)	7440-57-5	0.00002	0.04
4	Solder Ball	Alloy	0.2419	Tin (Sn)	7440-31-5	0.23345	96.50
				Silver (Ag)	7440-22-4	0.00726	3.00
				Copper (Cu)	7440-50-8	0.00121	0.50
5	Encapsulation	Epoxy Resin	1.5364	Fused Silica	60676-86-0	1.18610	77.20
				Epoxy Resin	non-disclosure	0.13674	8.90
				Phenol Resin	non-disclosure	0.13674	8.90
				Crytalline Silica	14808-60-7	0.04609	3.00
				Carbon Black	1333-86-4	0.00768	0.50
				Metal Hydroxide	non-disclosure	0.02305	1.50
Total Package Weight			3.5177				

Note: Composition derived from MSDS and material C of C from Vendors
Component Weight based on assembly of generic parts