

LTM4648 68LD BGA-PBF 15mm X 9mm X 4.92mm (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	0.1270	Barium Compounds	7727-43-7	0.00498	3.92
				Bismaleimide/Triazine Resin/Filler Substances (Silica Crystalline)	105391-33-1 1156-51-0/9003-36-5/21645-51-2 *non-disclosure	0.03009	23.69
				Copper Metal	7440-50-8	0.05163	40.65
				Copper Compounds	147-14-8	0.00004	0.03
				**Ecotoxic substances	7439-92-1	0.00000	0.00
				Phosphorus	7723-14-0	0.00018	0.14
				Palladium	7440-05-3	0.00003	0.02
				Gold metal or alloy	7440-57-5	0.00009	0.07
				Nickel	7440-02-0	0.00193	1.52
				Zinc	7440-66-6	0.00001	0.01
				Continuous Filament Fiber Glass	65997-17-3	0.02668	21.01
				Acrylic Resin	*non-disclosure	0.00947	7.46
				Epoxy Resin	*non-disclosure	0.00015	0.12
				Chromium(III) oxide	1308-38-9	0.00000	0.00
				Silica amorphous	7631-86-9	0.00025	0.20
				Talc;not containing fibers like asbestos	14807-96-6	0.00057	0.45
				Aromatic carbonyl compounds	non-disclosure	0.00055	0.43
				Cyanoguanidine	461-58-5	0.00002	0.01
				Calcium caobonate	471-34-1	0.00003	0.02
				Amine compounds	*non-disclosure	0.00008	0.06
				Leveling agent and others	*non-disclosure	0.00022	0.18
2	Solder Paste	Alloy	0.0113	Tin (Sn)	7440-31-5	0.01077	95.00
				Antimony (Sb)	7440-36-0	0.00057	5.00
3	Components	Passive/Active	0.5926	Iron Powder (Fe)	7439-89-6	0.45595	76.94
				Copper (Cu)	7440-50-8	0.11535	19.46
				Nickel (Ni)	7440-02-0	0.00259	0.44
				Tin (Sn)	7440-31-5	0.00410	0.69
				Ceramic (Ba) Compounds	12047-27-7	0.01460	2.46
3(i)	FC-DFN		0.0235				
	Active Ics	Silicon		Silicon (Si)	7440-21-3	0.00117	4.98
	Solder Paste	Alloy		Phenolic Resin	54208-63-8	0.00004	0.19
				Silver (Ag)	7440-22-4	0.00018	0.75
	Encapsulation	Epoxy Resin		Carbon Black	1333-86-4	0.00013	0.55
				Epoxy Resin	29690-82-2	0.00244	10.39
				Silica (Si)	60676-86-0	0.01024	43.65
	Lead frame	Lead frame		Copper (Cu)	7440-50-8	0.00831	35.44
				Iron (Fe)	7439-89-6	0.00020	0.87
				Zinc (Zn)	7440-66-6	0.00001	0.05
	Terminal Finish	Precious Metals		Gold (Au)	7440-57-5	0.00000	0.01
				Nickel(Ni)	7440-02-0	0.00020	0.85
				Paladium(Pd)	5/3/7440	0.00002	0.08

3(ii)	Wire	Copper	0.0394	Copper (Cu)	7440-50-8	0.00051	2.19
	FC-DFN						
	Active lcs	Silicon		Silicon (Si)	7440-21-3	0.00055	1.40
		Copper Clip		Copper (Cu)	7440-50-8	0.00440	11.17
				Iron (Fe)	7439-89-6	0.00011	0.28
	Clip			Zinc (Zn)	7440-66-6	0.00001	0.01
	Solder Paste	Alloy		Lead (Pb)	7439-92-1	0.00103	2.61
				Silver (Ag)	7440-22-4	0.00003	0.07
				Tin (Sn)	7440-31-5	0.00006	0.14
	Encapsulation	Epoxy Resin		Carbon Black	1333-86-4	0.00008	0.20
				epoxy resin	29690-82-2	0.00040	1.01
				Phenol	9003-35-4	0.00040	1.01
				Silica (Si)	60676-86-0	0.00706	17.94
	Lead frame	Lead frame		Copper (Cu)	7440-50-8	0.01098	27.89
4			0.0019	Iron (Fe)	7439-89-6	0.00027	0.69
				Zinc (Zn)	7440-66-6	0.00001	0.04
				Tin (Sn)	7440-31-5	0.01399	35.54
	Terminal Finish	Copper Alloy					
				Silicon (Si)	7440-21-3	0.00186	100.00
	Active lcs	Silicon		Gold (Au)	7440-57-5	0.00110	99.99
	Wire	Gold					
				Tin (Sn)	7440-31-5	0.11066	96.50
	Solder Ball	Alloy		Silver (Ag)	7440-22-4	0.00344	3.00
				Copper (Cu)	7440-50-8	0.00057	0.50
				Fused Silica	60676-86-0	0.62493	77.20
				Epoxy Resin	non-disclosure	0.07205	8.90
				Phenol Resin	non-disclosure	0.07205	8.90
				Crytalline Silica	14808-60-7	0.02429	3.00
5			0.1147	Carbon Black	1333-86-4	0.00405	0.50
				Metal Hydroxide	non-disclosure	0.01214	1.50
6			0.8095				
Total Package Weight			1.7209				

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