



## Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 <a href="mailto:custreq@latticesemi.com">custreq@latticesemi.com</a>		<b>Package Code:</b> <b>BG484</b>				Assembly: ASEK Size (mm): 19 x 19 Lead pitch (mm): 0.8 MSL: 3 Reflow max (°C): 260		
<b>Package:</b> 484 caBGA <b>Total Device Weight:</b> 0.911 Grams		<b>Products:</b> LCMXO3-9400						
June, 2020								
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.31%	0.0120			Silicon chip	7440-21-3	100.00%	Die size: 4968 x 5092 um
Mold Compound	55.50%	0.5055	48.56%	0.4423	Silica	60676-86-0	87.50%	Mold Compound: KE-G1250AHT
			3.61%	0.0329	Epoxy resin	-	6.50%	
			3.05%	0.0278	Phenol Resin	-	5.50%	
			0.28%	0.0025	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.47%	0.0043	0.38%	0.00345	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel 2100A
			0.09%	0.00086	Esters & resins	-	20.00%	
Wire	0.39%	0.0036	0.38%	0.0035	Copper (Cu)	7440-50-8	96.55%	CuPdAu+
			0.01%	0.0001	Palladium (Pd)	7440-05-3	3.10%	
			0.00%	0.0000	Gold (Au)	7440-57-5	0.35%	
Solder Balls	12.27%	0.1118	11.84%	0.1079	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.37%	0.0034	Silver (Ag)	7440-22-4	3.00%	
			0.06%	0.0006	Copper (Cu)	7440-50-8	0.50%	
Substrate	16.53%	0.1506	5.13%	0.0467	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			11.24%	0.1024	Glass fiber	65997-17-3	68.00%	
			0.17%	0.0015	Bisphenol A	80-05-7	1.00%	
Foil	5.82%	0.0530	4.77%	0.0434	Copper	7440-50-8	82.00%	
			0.88%	0.0080	Nickel plating	7440-02-0	15.10%	
			0.17%	0.0015	Gold plating	7440-57-5	2.91%	
Solder Mask	3.94%	0.0359	0.93%	0.0084	Solvent naphtha (petroleum)	64742-94-5	23.52%	Solder mask PSR4000 AUS 320
			0.23%	0.0021	Naphthalene	91-20-3	5.87%	
			0.58%	0.0053	Phosphin oxide derivative	-	14.70%	
			0.58%	0.0053	Talc	14807-96-6	14.70%	
			0.69%	0.0063	Dipropylene glycol monomethyl Ether	34590-94-8	17.63%	
			0.58%	0.0053	Epoxy Resin	85954-11-6	14.70%	
			0.35%	0.0032	Barium Sulfate	7727-43-7	8.88%	

**Notes:** SVHC: \* 0.17% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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5555 NE Moore Ct. Hillsboro OR 97124 <a href="mailto:custreq@latticesemi.com">custreq@latticesemi.com</a>		<b>Package: 484 caBGA</b> <b>Total Device Weight 0.917 Grams</b>			<b>Package Code:</b> <b>BG484</b>	Assembly: ATP Size (mm): 19 x 19 Lead pitch (mm): 0.8 MSL: 3 Reflow max (°C): 260		
June, 2020		<b>Products:</b> LCMXO3-9400						
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.49%	0.0137			Silicon chip	7440-21-3	100.00%	Die size: 5.1 x 4.9 x 0.228 mm
Mold Compound	52.67%	0.4830	3.69%	0.0338	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V
			2.63%	0.0242	Phenol Resin	-	5.00%	
			44.77%	0.4106	Silica	60676-86-0	85.00%	
			1.32%	0.0121	Metal Hydroxide	-	2.50%	
			0.26%	0.0024	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.21%	0.0019	0.18%	0.00165	Silver	7440-22-4	87.00%	Die attach epoxy: Henkel QMI-529HT
			0.01%	0.00013	Isobornyl Methacrylate	7534-94-3	7.00%	
			0.001%	0.00001	2-(3,4-Epoxy)cyclohexyl)ethyltrimethoxysilane	3388-04-3	0.50%	
			0.01%	0.00010	Additive	-	5.00%	
Wire	0.85%	0.0078	0.83%	0.0076	Copper (Cu)	7440-50-8	97.90%	MKE Cu wire(Pd coated), 0.02mm dia
			0.02%	0.0002	Palladium (Pd)	7440-05-3	2.10%	
Solder Balls	18.49%	0.1695	17.84%	0.1636	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.55%	0.0051	Silver (Ag)	7440-22-4	3.00%	
			0.09%	0.0008	Copper (Cu)	7440-50-8	0.50%	
Substrate	16.53%	0.1516	5.13%	0.0470	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			11.24%	0.1031	Glass fiber	65997-17-3	68.00%	
			0.17%	0.0015	Bisphenol A	80-05-7	1.00%	
Foil	5.82%	0.0533	4.77%	0.0437	Copper	7440-50-8	82.00%	
			0.88%	0.0080	Nickel plating	7440-02-0	15.10%	
			0.17%	0.0016	Gold plating	7440-57-5	2.91%	
Solder Mask	3.94%	0.0361	2.21%	0.0203	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.63%	0.0058	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.87%	0.0080	Barium Sulfate	7727-43-7	22.00%	
			0.12%	0.0011	Talc	14807-96-6	3.00%	
			0.02%	0.0002	Naphthalene	91-20-3	0.50%	
			0.09%	0.0008	Trade secret ingredients	-	2.30%	

**Notes:** SVHC: \* 0.17% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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