

3 Leads - SMP
Package Material Declaration

Date	26-Jan-21	Product name	Integrated Circuit
Package Code	VE	RoHS Compliant	Y
Package Name	Brick package	Halogen Free	Y
Product Total Mass (g)	0.22159	Plating	Pure Matte Sn
Product Number	MLX90377		

Material Declaration

Part Name	Material Name	Component Weight (g)	Material Component (Element)	CAS #	Element ratio (%)	Material Weight (g)	Ratio total Wt (ppm)	
Leadframe	Zirconium Copper C151	0.12450	Copper (Cu)	7440-50-8	99.9	0.12438	561291	
			Zirconium (Zr)	7440-67-7	0.1	0.00012	562	
Plating	Silver	0.00126	Silver (Ag)	7440-22-4	100	0.00126	5675	
Die	Silicon	0.00302	Silicon (Si)	7440-21-3	99.99	0.00302	13627	
			others	-	0.01	0.0000003	1	
IMC	S-FeNi-8	0.000006	Iron (Fe)	7439-89-6	19.75	0.0000012	5	
			Nickel (Ni) (0.0 ~ 80%)	7440-02-0	40	0.0000024	11	
			Molybdenum (Mo) (0.0 ~ 80%)	7439-98-7	40	0.0000024	11	
			others (max. 0.5%)	-	0.25	0.00000002	0.07	
Die attach	Epoxy Adhesive 84-3	0.00032	Quartz (SiO2)	14808-60-7	55	0.00018	802	
			Epoxy resin	-	43.605	0.00014	636	
			Dimethyl silicone polymer with silica	67762-90-7	0.75	0.000002	11	
			Diiron-trioxide	1309-37-1	0.25	0.000001	4	
			Aluminum oxide	1344-28-1	0.25	0.000001	4	
			Titanium-dioxide	13463-67-7	0.075	0.0000002	1	
			Cu-Phthalocyanin	147-14-8	0.07	0.0000002	1	
Multilayer Ceramic Capacitor (2x)	Ceramic element	Ceramics	0.00869	Barium oxide, obtained by calcining witherite	1304-28-5	60	0.00522	23541
				Titanium dioxide	13463-67-7	30	0.00261	11770
				Misc.	-	10	0.00087	3923
	Inner electrode	Nickel alloy	0.00137	Nickel (Ni)	7440-02-0	100	0.00137	6183
				Nickel (Ni)	7440-02-0	99.75	0.00009	396
	Nickel Plating Layer	Ep-Ni	0.00009	Misc.	-	0.25	0.0000002	1
				Tin (Sn)	7440-31-5	99.75	0.00024	1089
	Tin Plating Layer	Ep-Sn	0.00024	Misc.	-	0.25	0.000001	3
				Copper (Cu)	7440-50-8	100	0.00199	8962
	Outer electrode	Copper	0.00199	Glass w/o declarable substances	7631-86-9	99	0.00022	983
Glass				0.00022	Misc.	-	1	0.000002
Multilayer Ceramic Capacitor (1x)	Ceramic element	Ceramics	0.00428	Barium oxide, obtained by calcining witherite	1304-28-5	60	0.00257	11583
				Titanium dioxide	13463-67-7	30	0.00128	5792
				Misc.	-	10	0.00043	1931
	Inner electrode	Nickel alloy	0.00067	Nickel (Ni)	7440-02-0	100	0.00067	3042
				Nickel (Ni)	7440-02-0	99.75	0.00004	198
	Nickel Plating Layer	Ep-Ni	0.00004	Misc.	-	0.25	0.0000001	0.5
				Tin (Sn)	7440-31-5	99.75	0.00012	540
	Tin Plating Layer	Ep-Sn	0.00012	Misc.	-	0.25	0.0000003	1
				Silver (Ag)	7440-22-4	99.99	0.00058	2604
	Silver Plating Layer	Silver	0.00058	Misc.	-	0.01	0.0000001	0.3
				Copper (Cu)	7440-50-8	100	0.00049	2207
	Outer electrode	Copper	0.00049	Glass w/o declarable substances	7631-86-9	99	0.00005	241
				Glass	0.00005	Misc.	-	1
Epoxy	EP	0.00006	Epoxy resin	-	99	0.00006	286	
			Misc.	-	1	0.000001	3	
Capacitor attach	Solder paste Sn95Sb5	0.00003	Tin (Sn)	7440-31-5	95	0.00003	123	
			Antimony (Sb)	7440-36-0	5	0.000001	6	
Wire	Pd doped Gold	0.00001	Gold (Au)	7440-57-5	99	0.00001	50	
			Palladium (Pd)	7440-05-3	1	0.0000001	0.5	
Lead Finish	Tin	0.00043	Tin (Sn)	7440-31-5	99.99	0.00043	1956	
			Others	-	0.01	0.0000004	0.2	
Encapsulation	Silica EP G600	0.07311	Silica fused	60676-86-0	86.5	0.06324	285390	
			Epoxy Resin	-	7	0.00512	23095	
			Phenol Resin	-	6	0.00439	19796	
			Carbon Black	1333-86-4	0.5	0.00037	1650	

Total package weight (g) 0.22159

Comments

- Composition derived from MSDS and material CoC from vendors
- Component weight based on assembly of generic parts
- Reliability qualification reports are available upon request through the appropriate sales or marketing contact
- Third party testing for RoHS substances are available upon request to environment@melexis.com

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