

Supplier's Declaration On Restricted or Banned Materials and Chemical Substances



TITLE: RoHS 2 Compliance		
CUSTOMER:	PRODUCT: MLCC	Prepared by EunHee Ma
SAMSUNG ELECTRO-MECHANICS DOCUMENT		
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We, Samsung, declare that our component MLCC is produced in accordance with Pb-free technology and can be used in Pb-free production and that it fulfills the European Directive 2011/65/EU (known as the "RoHS" Directive)

The detail information about ingredients of our MLCC is as below.

Materials Declaration

The diagram shows a cross-section of an MLCC component. The main body is labeled 'Ceramic' and 'Body'. Inside, there are 'Inner Electrode (Ni)' layers. The top surface is labeled 'Termination'. A magnified view of the termination shows three layers: 'Cu (Contact with Body)', 'Ni (Barrier Layer)', and 'Sn (Termination Finish)'.

※ N.D. : Not detected. N/A Not available

	Material group	Materials	CAS No.	Analysis Result (PPM)					
				Cd	Pb	Hg	Cr+6	PBBs	PBDEs
Body	Dielectric	Barium Titanate (BaTiO3)	12047-27-7	N.D	N.D	N.D	N.D	N/A	N/A
	linner electrode	Nickel (Ni)	7440-02-0	N.D	N.D	N.D	N.D	N/A	N/A
Termination	1 st Layer (Contact with body)	Copper(Cu)	7440-50-8	N.D	N.D	N.D	N.D	N/A	N/A
	2 nd Layer (Barrier layer)	Nickel(Ni)	7440-02-0	N.D	N.D	N.D	N.D	N/A	N/A
	3 rd Layer	Tin (Sn)	7440-31-5	N.D	N.D	N.D	N.D	N/A	N/A

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■ **Banned Substances under RoHS directive**

Substance	USE(O/X)	Purposes of Use
Lead and its compounds	X	
Mercury and compounds	X	
Hexavalent Chromium	X	
Cadmium and its compounds	X	
Polybrominated biphenyls(PBBs)	X	
Polybrominated diphenyls ethers(PBDEs)	X	

■ **Controlled substances**

Substance	USE(O/X)	Purposes of Use
Antimony and its compounds	X	
Arsenic and its compounds	X	
Beryllium and its compounds	X	
Barium and its compounds	X	
Manganese and its compounds	X	
Organic-tin compounds	X	
Nickel and its compounds	O	Inner Electrode/ Plating (Barrier Layer)
Bismuth and its compounds	X	
Copper and its compounds	O	Termination
Asbestos etc.	X	
Cyanides	X	
Polychloroterphenyls(PCTs)	X	
Polychlorinated biphenyls(PCBs)	X	
Polyvinyl chloride(PVC)	X	

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Date from 2015



■ Product Weight

	Size Code	Length x width x Thickness [mm]	Weight [g]
Chip Weight with case size	CL 1005 Series (0402)	1.0 × 0.5 × 0.5	0.00040~0.0014
	CL 1608 Series (0603)	1.6 × 0.8 × 0.8	0.00046~0.0078
	CL 2012 Series (0805)	2.0 × 1.25 × 1.25	0.0052~0.0182
	CL 3216 Series (1206)	3.2 × 1.6 × 1.6	0.0191~0.0487
	CL 3225 Series (1210)	3.2 × 2.5 × 2.5	0.0438~0.1186
	CL 4532 Series (1812)	4.5 × 3.2 × 3.2	0.0787~0.1939
	CL 5750 Series (2220)	5.7 × 5.0 × 3.2	0.2418~0.2979

Hwansoo Lee

Signature of Authorized Company Representative

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If you have another question, feel free to ask the our salesperson .