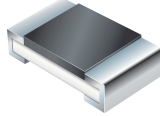


# MATERIAL DECLARATION SHEET



Material Number	CR01005-AS Series			
Product Line	Chip Resistor			
Compliance Date	11/19/2015			
RoHS Compliant	Yes	MSL	1	

No.	Construction Element (subpart)	Homogeneous Material	Material weight [mg]	Homogeneous Material\ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Ceramic substrate	Alumina	0.024	Magnesium oxide	1309-48-4	1.3	0.8211	63.1579
				Crystalline silica	14808-60-7	3.0	1.8947	
				Aluminum oxide	1344-28-1	95.0	60.0000	
				Calcium oxide	1305-78-8	0.7	0.4421	
2	Rear electrode	Silver glass	0.001	Lead	7439-92-1	5.0	0.1316	2.6316
				Boron	7440-42-8	1.0	0.0263	
				Cupric oxide	1317-38-0	5.0	0.0318	
				Silver	7440-22-4	85.0	2.2368	
				Crystalline silica	14808-60-7	4.0	0.1053	
3	Surface electrode	AgPd glass	0.003	Lead	7439-92-1	2.0	0.1578	7.8947
				Boron	7440-42-8	1.0	0.0789	
				Palladium	7440-05-3	21.0	1.6579	
				Silver	7440-22-4	73.0	5.7632	
				Crystalline silica	14808-60-7	2.0	0.1579	
				Zirconium oxide	1314-23-4	1.0	0.0780	
4	Resistance Element	RuO2 glass	0.001	Lead	7439-92-1	22.0	0.5789	2.6316
				Boron	7440-42-8	3.0	0.0789	
				Cupric oxide	1317-38-0	1.0	0.0263	
				Palladium	7440-05-3	12.0	0.3158	
				Silver	7440-22-4	22.0	0.5789	
				Crystalline silica	14808-60-7	13.0	0.3421	
				Zinc oxide	1314-13-2	0.4	0.0105	
				Manganese oxide	1313-13-9	0.8	0.0211	
				Aluminum oxide	1344-28-1	0.8	0.0211	
Ruthenium oxide	12036-10-1	25.0	0.6579					

# MATERIAL DECLARATION SHEET



5	Protective Coat 1	Glass	0.001	Lead	7439-92-1	50.0	1.3158	2.6316
				Boron	7440-42-8	10.0	0.2632	
				Crystalline silica	14808-60-7	37.0	0.9737	
				Chromium oxide	1308-38-9	3.0	0.0789	
6	Protective Coat 2	Resin	0.001	Crystalline silica	14808-60-7	35.0	0.9211	2.6316
				Epoxy resin	Proprietary	65.0	1.7105	
7	Side electrode	NiCr/Cu	0.001	Nickel	7440-02-0	20.0	0.5263	2.6316
				Copper	7440-50-8	75.0	1.9737	
				Chromium	7440-47-3	5.0	0.1316	
8	Internal coating	Nickel	0.003	Nickel	7440-02-0	99.75	7.8750	7.8947
				Misc., not to declare	N/A	0.25	0.0197	
9	External coating	Tin	0.003	Tin	7440-31-5	99.75	7.8750	7.8947
				Misc., not to declare	N/A	0.25	0.0197	
Total weight			0.038					

**This Document was updated on:** January 5, 2017

**Important remarks:**

1. It is the responsibility of the user to verify they are accessing the latest version.