Material Declaration Sheet

Vishay Inter-technology

Date	1/10/2022

Part / Product Family Details

Part / Family Series	RoHS Compliance Status	RoHS Compliance Date Code	Total product Weight (mg)	Value Range	Product Type	Manufacturing Location	Number of Exemptions Used
FC0402 series	YES	01-Jan-2005	0.976106068	All R values	Resistor	2160 Liberty Drive, Niagara Falls, NY, 14304, USA	0

Material Composition

Homogenous Material Name	Material Classification	Substance Name	CAS number	Weight of Substance (mg)	With respect to Homogenous Material		% with respect to Total Product Weight	RoHS Exemptions Used
					%	ppm		
Barrier Adhesion Layer 1	Nickel alloys			0.00086				
		Chromium	7440-47-3	0.00038	44.02	440155	0.04	0 - None
		Nickel	7440-02-0	0.00047	54.48	544837	0.05	0 - None
		Silicon	7440-21-3	0.00001	1.50	15008	0.00	0 - None
Barrier Adhesion Layer 2	Nickel alloys			0.00123				
		Nickel	7440-02-0	0.00117	95.17	951707	0.12	0 - None
		Vanadium	7440-62-2	0.00006	4.83	48293	0.01	0 - None
Barrier Layer	Nickel alloys			0.02487				
		Nickel	7440-02-0	0.02487	100.00	1000000	2.55	0 - None
Ceramic substrate	Ceramics / glass			0.85757				
		Aluminum oxide	1344-28-1	0.85445	99.64	996360	87.54	0 - None
		Magnesium oxide	1309-48-4	0.00097	0.11	1135	0.10	0 - None
		Silicon dioxide	7631-86-9	0.00215	0.25	2505	0.22	0 - None
Conductor Adhesion Layer	Nickel alloys			0.00001				
		Titanium	7440-32-6	0.00000	7.23	72289	0.00	0 - None
		Tungsten	7440-33-7	0.00001	92.77	927711	0.00	0 - None
Conductor Layer 1	Nickel alloys			0.01479				
		Gold	7440-57-5	0.01479	100.00	1000000	1.52	0 - None
Conductor Layer 2	Nickel alloys			0.00207				
		Nickel	7440-02-0	0.00207	100.00	1000000	0.21	0 - None
Overcoat	Other compounds (e.g. friction linings)			0.01235				
		Bisphenol A epoxy resin	25068-38-6	0.00235	19.03	190295	0.24	0 - None
		Chromium Oxide	1308-38-9	0.00115	9.35	93535	0.12	0 - None
		Cobalt Oxide	1307-96-6	0.00142	11.54	115396	0.15	0 - None
		Nickel Oxide	1313-99-1	0.00148	11.95	119517	0.15	0 - None
		Quartz	14808-60-7	0.00234	18.98	189794	0.24	0 - None
		Synthecic amorphous silicon dioxide	112926-00-8	0.00049	3.93	39349	0.05	0 - None
		Titanium Oxide	13463-67-7	0.00187	15.16	151591	0.19	0 - None
		Zinc Oxide	1314-13-2	0.00124	10.05	100523	0.13	0 - None
Passivation (Polyimide)	Duromers			0.01280				
		N-methyl-pyrrolidone	872-50-4	0.00000	0.04	363	0.00	0 - None
		Polyimide precusor	System	0.01279	99.96	999637	1.31	0 - None
Resistor	Nickel alloys			0.00016				
		Chromium	7440-47-3	0.00007	44.02	440155	0.01	0 - None
		Nickel	7440-02-0	0.00008	54.48	544838	0.01	0 - None
		Silicon	7440-21-3	0.00000	1.50	15008	0.00	0 - None
Termination	Nickel alloys			0.04942				
		Copper	7440-50-8	0.00025	0.50	5000	0.03	0 - None
		Silver	7440-22-4	0.00148	3.00	30000	0.15	0 - None
		Tin	7440-31-5	0.04769	96.50	965000	4.89	0 - None

EU-RoHS Directive-2011/65/EU MCV of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and MCV of 0.01% by mass cadmium

Exemption Used NONE

Note :- (i) All information is based on data received from our vendors & subjected to change without prior notice.
(ii) Substance weight are derived from MSDS.