


MATERIAL DECLARATION



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|---------------------|--|---|
| Product Part Number | MV Series |  |
| Product Line | Low voltage dual function varistors | |

| No. | Construction Element (subpart) | Homogeneous Material | Material weight [g] | Homogeneous Material / Substances | CASRN if applicable | Material Mass [%] | Material Mass [%] of total unit wt. | Subpart mass of total wt. [%] |
|-----|--------------------------------|---|---------------------|-----------------------------------|---------------------|-------------------|-------------------------------------|-------------------------------|
| 1 | Ceramic body MLV | Ceramic | 0.0445 | Zinc oxide | 1314-13-2 | 91.0 | 13.7586 | 15.1193 |
| | | | | Dibismuth-trioxide | 1304-76-3 | 3.0 | 0.4536 | |
| | | | | Antimonytrioxide | 1309-64-4 | 3.0 | 0.4536 | |
| | | | | Tricobalt tetraoxide | 1308-06-1 | 1.5 | 0.2268 | |
| | | | | Chromium(III)oxide | 1308-38-9 | 0.9 | 0.1285 | |
| | | | | Trimanganese tetraoxide | 1317-35-7 | 0.7 | 0.0983 | |
| 2 | Inner electrodes MLV | AgPd alloy | 0.0014 | Silver | 7440-22-4 | 90 | 0.4418 | 0.4909 |
| | | | | Palladium | 7440-05-3 | 10 | 0.0491 | |
| 3 | Ag termination MLV | Silver | 0.0017 | Silver | 7440-22-4 | 98 | 0.5820 | 0.5938 |
| | | | | Additives not to declare | N/A | 2 | 0.0119 | |
| 4 | Multilayer chip capacitor | MLC Ceramic body with inner electrodes and solderable termination | 0.0411 | Barium-titanium-trioxide | 12047-27-7 | 83.39 | 11.6462 | 13.9660 |
| | | | | Nickel | 7440-02-0 | 9.8 | 1.3687 | |
| | | | | Copper | 7440-50-8 | 4.1 | 0.5726 | |
| | | | | Tin | 7440-31-5 | 1.33 | 0.1857 | |
| | | | | Additives not to declare | N/A | 1.38 | 0.1927 | |
| 5 | Solder | Solder SAC | 0.0311 | Tin | 7440-31-5 | 95.5 | 10.0971 | 10.5729 |
| | | | | Silver | 7440-22-4 | 3.8 | 0.4018 | |
| | | | | Copper | 7440-50-8 | 0.7 | 0.0740 | |
| 6 | Wire contacts | Tin plated copper wire | 0.1406 | Copper | 7440-50-8 | 99 | 47.3607 | 47.8391 |
| | | | | Tin | 7440-31-5 | 1 | 0.4784 | |

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|---|---------------|--------------|--------|--|-------------|-------|--------|---------|
| 7 | Epoxy coating | Epoxy resin | 0.0336 | Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2,2'-((1-methylethylidene)bis(4,1-phenyleneoxymethylene))bis(oxirane) | 25036-25-3 | 39.42 | 4.5010 | 11.4180 |
| | | | | Silica, vitreous | 60676-86-0 | 27.21 | 3.1068 | |
| | | | | Formaldehyde, polymer with (chloromethyl)oxirane and phenol, reaction products with 6H-dibenz(c,e)(1,2)oxaphosphorin 6-oxide | 300371-38-4 | 17.21 | 1.9650 | |
| | | | | Benzene-1,2:4,5-tetracarboxylic dianhydride | 89-32-7 | 8.83 | 1.0082 | |
| | | | | Oxalic acid, copper(2+) salt (1:1) | 814-91-5 | 7.33 | 0.8369 | |
| | | Total weight | 0.2940 | | | | | |

This Document was updated on: July, 2021

Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
2. Presented data corresponds to part **MV14S105MX501RL1**. Weight may change depending on varistor value, dimension and lead configuration.