

## RoHS CAPACITOR MATERIALS DECLARATION SHEET: Disc, SLC, and MLC

| Material   | Type            | Composition        | CAS Number |
|------------|-----------------|--------------------|------------|
| Dielectric | X5R<br>X7R      | Barium Titanate    | 12047-27-7 |
|            |                 | Calcium Zirconate  | 12013-47-7 |
|            | Niobium Oxide   | 1313-96-8          |            |
|            | Lanthanum Oxide | 1312-81-8          |            |
| Dielectric | X5U             | Barium Titanate    | 12047-27-7 |
|            |                 | Calcium Zirconate  | 12013-477  |
|            |                 | Niobium Oxide      | 1313-96-8  |
|            |                 | Lead Titanate *    | 12060-00-3 |
| Dielectric | Z5U             | Barium Titanate    | 12047-27-7 |
|            |                 | Calcium Zirconate  | 12013-47-7 |
|            |                 | Niobium Oxide      | 1313-96-8  |
| Dielectric | CR03            | Barium Titanate    | 12047-27-7 |
|            | CR07            | Strontium Titanate | 12060-59-2 |
|            | CR22            | Bismuth Oxide      | 1304-76-3  |
| Dielectric | CR01            | Strontium Titanate | 12060-59-2 |
|            | CR02            | Lead Titanate *    | 12060-00-3 |
| Dielectric | NPOK20          | Barium Titanate    | 12047-27-7 |
|            |                 | Zirconium Oxide    | 1314-23-4  |
|            |                 | Niobium Oxide      | 1313-96-8  |
|            |                 | Zinc Oxide         | 1314-13-2  |
| Dielectric | NPOK85          | Barium Titanate    | 12047-27-7 |
|            |                 | Neodymium Oxide    | 1313-97-9  |
|            |                 | Lead Titanate *    | 12060-00-3 |
|            |                 | Bismuth Oxide      | 1304-76-3  |

| Material               | Type    | Composition                            | CAS Number |
|------------------------|---------|--|------------|
| Disc & MLC Termination | Ag      | Bismuth Oxide                          | 1304-76-3  |
|                        |         | Silver                                 | 7440-22-4  |
| Interlayer Electrodes  | Ag/Pd   | Silver                                 | 7440-22-4  |
|                        |         | Palladium                              | 7440-05-3  |
| Solder                 | SAC 305 | Copper 0.5 wt% %                       | 7440-30-5  |
|                        |         | Tin 96.5 wt%                           | 7440-50-8  |
|                        |         | Silver 3.0 wt%                         | 7440-22-4  |
| Wire Leads             | CCFe    | Copper (Clad)                          | 7440-50-8  |
|                        |         | Iron (Base)                            | 7440-89-6  |
|                        |         | Nickel (Flash)                         | 7440-02-0  |
|                        |         | Tin (Finish)                           | 7440-30-5  |
| Wire Leads             | OFHC    | Copper (Base)                          | 7440-50-8  |
|                        |         | Tin (Finish)                           | 7440-30-5  |
|                        |         | Lead (Finish)                          | 7439-92-1  |
| Coating                | Epoxy   | 1,2,4-Benzotricarboxylic-1,2-Anhydride | 552-30-7   |
|                        |         | Antimony Oxide                         | 1309-64-4  |
|                        |         | Silica                                 | 60676-86-0 |
| Epoxy Marking Ink      | 4481BLK | Carbon Black                           | 1333-86-4  |
|                        |         | Propylene Carbonate                    | 108-32-7   |
|                        |         | Silica                                 | 7631-86-9  |

\* Per RoHS 2 and Commission Delegate Directive (EU) 2015/863 Article 4(1), exemption 7(c)-II, Lead in dielectric ceramic in capacitors for a rated voltage of 125V AC or 250V DC or higher