

## Section 1 - Chemical Product and Company Identification

### Product Name

Chip-Resistor

### Name of Manufacturer or Supplier of the goods

Premier Farnell plc

150 Armley Road, Leeds, LS12 2QQ

+44 (0) 8701 202530

### Emergency telephone number

+44 1865 407333

## Section 2 - Hazards Identification

Product hazard class : Not Available

Product hazard class : Not Available

Other hazards : Not Available

## Section 3 - Composition/information on ingredients Pure material/Mixtures

Substance	CAS No.	Formula	Main purpose	Typical %
Aluminium oxide	1344-28-1	Al <sub>2</sub> O <sub>3</sub>	Substrate	83.9144
Silicon dioxide	14808-60-7	SiO <sub>2</sub>	Substrate	1.6127
Calcium oxide	1305-78-8	CaO	Substrate	0.1984
Magnesia	1309-48-4	MgO	Substrate	0.5175
Silver	7440-22-4	Ag	Backside layer	1.6284
Bismuth oxide	1304-76-3	Bi <sub>2</sub> O <sub>3</sub>	Backside layer	0.4140
Calcium oxide	1305-78-8	CaO	Backside layer	0.1656
Silicon oxide	11126-22-0	SiO	Backside layer	0.1104
Aluminium oxide	1344-28-1	Al <sub>2</sub> O <sub>3</sub>	Backside layer	0.1104
Resin	9004-57-3	[C <sub>6</sub> H <sub>7</sub> O <sub>2</sub> (OH) <sub>3</sub> -n(OC <sub>2</sub> H <sub>5</sub> ) <sub>n</sub> ] <sub>x</sub>	Backside layer	0.3312
Silver	7440-22-4	Ag	Topside layer	3.6635
Lead Free Glass	65997-18-4	Lead Free Glass Frit	Topside layer	0.3017
Palladium	7440-05-3	Pd	Topside layer	0.1724
Resin	9004-57-3	[C <sub>6</sub> H <sub>7</sub> O <sub>2</sub> (OH) <sub>3</sub> -n(OC <sub>2</sub> H <sub>5</sub> ) <sub>n</sub> ] <sub>x</sub>	Topside layer	0.1724
Lead Free Glass	65997-18-4	Lead Free Glass Frit	Primary coating	0.9880
Pigment (Chromiu)	1308-38-9	Cr <sub>2</sub> O <sub>3</sub>	Primary coating	0.0073
Resin	9004-57-3	[C <sub>6</sub> H <sub>7</sub> O <sub>2</sub> (OH) <sub>3</sub> -n(OC <sub>2</sub> H <sub>5</sub> ) <sub>n</sub> ] <sub>x</sub>	Primary coating	0.0447
Silicon dioxide	60676-86-0	SiO <sub>2</sub>	Protective coating	1.6720
Polymer	29661-89-0	(C <sub>8</sub> H <sub>10</sub> •C <sub>6</sub> H <sub>6</sub> O•CH <sub>2</sub> O) <sub>x</sub>	Protective coating	1.6720
Talc	14807-96-6	3MgO•4SiO <sub>2</sub> •H <sub>2</sub> O	Protective coating	0.3800
Carbon black	1333-86-4	C	Protective coating	0.0760
Nickel	7440-02-0	Ni	Side termination	0.0935

Substance	CAS No.	Formula	Main purpose	Typical %
Chromium	7440-47-3	Cr	Side termination	0.0735
Nickel	7440-02-0	Ni	Plating Ni	0.9200
Tin	7440-31-5	Sn	Plating Sn	0.7600

## Section 4 - First Aid Measures

### The first aid measures for different exposure routes:

Inhalation : Not Available  
Skin contact : Not Available  
Eye contact : Not Available  
Ingestion : Not Available

The most important symptoms and hazardous effects

None

The protection of first-aiders : None

Notes to Physician : None

## Section 5 - Fire-fighting measures

Suitable fire extinguishing media : This product is incombustible

Specific hazards may be encountered during fire-fighting : None

Specific fire-fighting methods : No

Special equipment for the protection of firefighters : No

## Section 6 - Accidental release measures

Personal precautions : No

Environmental precautions : No

Methods for cleaning up : No

## Section 7 - Handling and storage

Handling : No special advice

Storage : Following the method defined in MSL level 1

## Section 8 - Exposure controls/personal protection

Engineering control : No

### Control parameters:

8 hours time weighted average exposure limits/Short-term exposure

limits/maximum exposure limits : No

Biological standards : No

### Personal protective equipment:

Respiratory protection : No

Hand protection : No

# Safety Data Sheet

**multicomp**PRO

Eye protection : No  
Skin and body protection : No  
Hygiene measures : No special requirement

## Section 9 - Physical and chemical properties

Appearance  
(physical state, colour, etc.) : Cuboid ceramic  
Odor threshold : No defined  
pH value : Not available  
Flammability (solid, gas) : incombustible  
Decomposition temperature : Not be tested  
Auto-ignition temperature : Incombustible  
Vapor pressure : Not Available  
Density : =6  
Partition coefficient  
(n-octanol/water,log Kow) : -  
Odor: : No  
Melting point : 1500°C  
Boiling point/boiling point range : Not be tested  
Flash point : °F °C: Not be tested  
Test method : Open cup Closed cup  
Explosion limits : Not Available  
Vapor density : Not Available  
Solubility : Not Available  
Evaporation rate : Not Available  
Rated watt hour (WH) : N/A  
(Note: resistor, capacitor, conductor could not provide energy, they are called passive component)

## Section 10 - Stability and reactivity

Stability : Stable  
Possible hazardous reactions  
under specific conditions : No  
Conditions to avoid : No  
Materials to avoid : No  
Hazardous decomposition products : No

## Section 11 - Toxicological information

Routes of exposure : Not available  
Symptoms : No  
Acute toxicity : No  
Chronic toxicity or long term toxicity : No

## Section 12 - Ecological information

Ecotoxicity : No  
Persistence and degradability : -  
Bioaccumulative potential : -  
Mobility in soil : -  
Other adverse effects : No

## Section 13 - Disposal considerations

Methods of waste disposal : Follow the local regulation

## Section 14 - Transport information

United Nations number (UN No) : Not Available.  
UN Proper shipping name : Not Available.  
Transport hazard class (es) : Not Available.  
Packing group : Not Available.  
Marine pollutant (Yes/No) : No  
Specific transport measures and precautionary conditions : No

## 15. Regulatory information

Applicable regulations : 2011/65/EU, EC-1907-2006, (EU) 2015/863

## 16. Other information

No Information are available.

Part Number

MCMR04X000 PTL

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.