# Conductive – High Consistency Silicone Rubber (HCR)

## Type – Silver coated Copper filled. (Ag/Cu)

### Characteristics

Vulcanised articles manufactured from this silver coated, copper filled, conductive silicone rubber compound, typically used in military / aerospace & commercial applications, exhibit a unique combination of characteristics & properties. They are noted for their good flexibility, mechanical properties, outstanding shielding / conductive properties & very good processing characteristics. Suitable for moulding only.

### Product Data

**Material Reference:** PR 680 Series – Moulding

**Special Features:**

- Designed to meet; MIL-G-83528 Type A
- Suitable for the manufacture of parts for EMI/RFI electrical shielding applications
- Excellent performance in *non*-corrosive environments
- Excellent electrical conductivity
- Excellent EMP resistance
- Service temperature range: –60ºC to +125ºC (excursions up to 150ºC)

**Colour:** Tan (Natural)

### Safety Information

*Detailed safety specific information can be obtained form the Material Safety Data Sheets (MSDS), which are available upon request*.

### Physical Properties

| Test | Standard | Units | Typical Values | | | |
|---|---|---|---|---|---|---|
| Hardness | ASTM D2240 | Shore A | 50 +/- 5 | 60 +/- 5 | 70 +/- 5 | 80 +/- 5 |
| Density | ASTM D792 | g/cm³ | - | 3.4 | 3.45 | 3.5 |
| Tensile Strength | ASTM D412 | MPa | - | 2.9 | 2.7 | 2.4 |
| Elongation @ Break | ASTM D412 | % | - | 350 | 310 | 290 |
| Tear Strength | ASTM D624 C | kN/m | - | 8 | 8 | 9 |
| Compression Set:<br>70 Hrs @ 100ºC | ASTM D395 (Method B) | % | - | 27 | 29 | 34 |

### Electrical Properties

| | | | | | | |
|---|---|---|---|---|---|---|
| Volume Resistivity | ASTM D991 – 89 | Ohm/cm | - | 0.005 | 0.004 | 0.004 |
| Shielding Effectiveness: | MIL-G-83528 | | | | | |
| 200 KHz (H Field) | | dB | - | 70 | 70 | 70 |
| 100 MHz (E Field) | | dB | - | 120 | 120 | 120 |
| 500 MHz (E Field) | | dB | - | 120 | 120 | 120 |
| 2 GHz (Plane Wave) | | dB | - | 110 | 110 | 120 |
| 10 GHz (Plane Wave) | | dB | - | 110 | 110 | 120 |

### Typical Cure Conditions

| | |
|---|---|
| Press-cure | 10 minutes @ 170°C |
| Post-cure | 2 hours @ 150°C |
| Catalyst type | Dicumyl Peroxide or DHBP |

*This data is obtained from test pieces moulded in the laboratory and are intended as a guide. They should not be used in preparing specifications.*