

## Low-Fire-Hazard Material

### Product Facts

- Heat-shrinkable, semiflexible molded shapes for low fire hazard applications
- Low-smoke index as defined by BS G 198 Part 5
- Low-toxicity index as defined by NES 713
- High-temperature index as defined by ISO 4589-3



### Applications

TE heat-shrinkable molded parts in -100 material form part of System 100. The molded parts are designed for use in conjunction with Zerohal cable and tubing for applications where hazard reduction in the event of fire is crucial. The material exhibits excellent fire safety characteristics combined with low-smoke and low-acid-gas emission while retaining good mechanical and fluid-resistant properties. -100 parts with adhesive lining provide location, sealing, and strain relief of cable-connector terminations and cable-cable transitions on harnesses used where there is a need to lower the risk (such as in marine applica-

tions, mass transit systems, and offshore installations), or where equipment would be irreparably damaged by the corrosive products of combustion. Available in a wide range of configurations, -100 parts will operate continuously from -30°C to 105°C [-22°F to 221°F]. The standard color is black.

### Installation

-100 molded parts will shrink on the application of heat above 120°C [248°F].

Recommended installation temperature: 150°C [302°F]

### Operating Temperature Range

-30°C to 105°C  
[-22°F to 221°F]

| Available in: | Americas | Europe | Asia Pacific |
|---------------|----------|--------|--------------|
|               | ■        | ■      | ■            |

**-100** (Continued)

**Specifications/Approvals**

| Military/NAVSEA                                       | TE      |
|-------------------------------------------------------|---------|
| 5617649 (U.S.)                                        | RW-2082 |
| Def. Stan 59-97, Issue 3, Type DF (Europe)            | —       |
| BSG 198 Part 5 Type DF (Europe)                       | —       |
| BR1326 listed Class C                                 | —       |
| VG95343 Part 29 & 30                                  |         |
| SAE-AS85049/ 140, 141, 142<br>(material designator G) |         |

**Product Characteristics**

|                        |                                       | Specification Requirements                                       | Test Method                                                     |
|------------------------|---------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------|
| Physical               | Tensile strength                      | 8 MPa (min.)                                                     | ISO 37                                                          |
|                        | Ultimate elongation                   | 200% (min.)                                                      | ISO 37                                                          |
|                        | 2% secant modulus                     | 130 MPa (max.)                                                   | ASTM D 882                                                      |
|                        | Specific gravity                      | 1.5 (max.)                                                       | ISO 1183                                                        |
| Thermal                | Heat aging for 168 h at 150°C [302°F] | Ultimate elongation 100% (min.)                                  | ISO 188, ISO 37                                                 |
|                        | Heat shock for 4 h at 225°C [437°F]   | No dripping, cracking, or flowing                                | ASTM D 2671                                                     |
|                        | Low-temperature flex at -30°C [-22°F] | No cracking during mandrel bend                                  | ASTM D 2671                                                     |
| Fire safety properties | Limiting oxygen index                 | 29 min.                                                          | ISO 4589-2                                                      |
|                        | Temperature index                     | 250°C [482°F] (min.)                                             | ISO 4589-3                                                      |
|                        | Flammability (burn time)              | 100 s (max.)                                                     | ASTM D 635                                                      |
|                        | Smoke index                           | 20 (max.)                                                        | BSG 198 Part 5                                                  |
|                        | Toxicity index                        | 5 (max.) per 100 g                                               | NES 713                                                         |
| Electrical             | Electric strength                     | 15 MV/m (min.)                                                   | IEC 243                                                         |
| Water absorption       | —                                     | 0.75% (max.) at 23°C [73°F]<br>3.5% (max.) at 70°C [158°F]       | ISO 62                                                          |
| Fluid resistance       | ISO 1817 Gasoline fuel                | Tensile strength 5 MPa (min.)<br>Ultimate elongation 150% (min.) | ISO 1817 and ISO 37<br>after immersion for 24 h at 23°C [73°F]  |
|                        | Lubricating oil O-149                 | Tensile strength 5 MPa (min.)<br>Ultimate elongation 150% (min.) | ISO 1817 and ISO 37<br>after immersion for 24 h at 50°C [122°F] |
|                        | Hydraulic fluid H515                  | Tensile strength 5 MPa (min.)<br>Ultimate elongation 150% (min.) | ISO 1817 and ISO 37<br>after immersion for 24 h at 23°C [73°F]  |