Technical data sheet

Mecoline IS RDX 5235 F

Radiation cross-linkable, flame retardant compound

- **Compound class**: Insulation / sheathing
- **Compound category**: RDX
- **Standards**:
  - SAE J1128 TXL, GXL and SXL; UL 3289, 3321
  - SAE J1127 STX and SGX
  - CSA AWM I A/B
  - CSA CL 1251, 1503
- **Operating temperature [°C]**: -55 to 150
- **Oil resistance level**: 3

**Typical applications**

Motor lead wires for coil connections, class F motors and transformers, pumps, solenoids, Internal wiring of appliances, sensor wires, flexible battery cables and wire insulation of low voltage multicore cables for road vehicles.

**General Applications**

**Automotive**

**Features**

- Flame retardant
- Flexible at low temperatures
- High temperature resistant
- Oil resistant
- Flexible
- Abrasion resistant
- Low smoke

**PHYSICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Physical properties</th>
<th>Unit</th>
<th>Typical value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density*</td>
<td>g/cm³</td>
<td>1.25</td>
<td>DIN EN ISO 1183-1A</td>
</tr>
<tr>
<td>Hardness*</td>
<td>Shore D</td>
<td>50</td>
<td>DIN ISO7619-1</td>
</tr>
<tr>
<td>Abrasion</td>
<td>Cycles</td>
<td>150</td>
<td>DIN ISO7619-1</td>
</tr>
</tbody>
</table>

**MECHANICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Thermoplastic / Before cross-linking **</th>
<th>Unit</th>
<th>Typical value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength</td>
<td>N/mm²</td>
<td>16</td>
<td>IEC 60811-501</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>%</td>
<td>340</td>
<td>IEC 60811-501</td>
</tr>
</tbody>
</table>
# Technical data sheet

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### THERMAL PROPERTIES ***

<table>
<thead>
<tr>
<th>Low temperature tests</th>
<th>Unit</th>
<th>Typical value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation at break at -55°C</td>
<td>%</td>
<td>&gt;30</td>
<td>IEC 60811-505</td>
</tr>
<tr>
<td>Hot set test at 200°C / 15min / 0,2MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation under load</td>
<td>%</td>
<td>40</td>
<td>IEC 60811-507</td>
</tr>
<tr>
<td>Residual elongation</td>
<td>%</td>
<td>&lt;10</td>
<td>IEC 60811-507</td>
</tr>
</tbody>
</table>

### ELECTRICAL PROPERTIES *

<table>
<thead>
<tr>
<th>Major electrical properties</th>
<th>Unit</th>
<th>Typical value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume resistivity</td>
<td>Ω cm</td>
<td>10(^{15})</td>
<td>IEC 60167</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>kV/mm</td>
<td>25</td>
<td>DIN EN 60243-1</td>
</tr>
<tr>
<td>Dielectric constant at 50Hz 20°C</td>
<td>-</td>
<td>3.1</td>
<td>IEC 250</td>
</tr>
</tbody>
</table>

### BURNING PROPERTIES *

<table>
<thead>
<tr>
<th>Main burning properties</th>
<th>Unit</th>
<th>Typical value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE</td>
<td>-</td>
<td>Pass</td>
<td>Std. 383-1974</td>
</tr>
<tr>
<td>UL</td>
<td>-</td>
<td>Pass</td>
<td>UL 224</td>
</tr>
</tbody>
</table>

* pressed plaques
** extruded tapes
*** cross-linked plaques or tapes
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PROCESSING GUIDE

- **Screw configuration**: Barrier type screw (BM) having high flights and a L/D-ratio > 24:1
- **Screw cooling**: For high line speeds, cooling the screw to around 80°C can be very effective although this could lead to pulsation
- **Screen pack**: 40/60/80/40 mesh
- **Extrusion dies**: Pressure or tube. For pressure extrusion, normal dies are recommended.
- **Die opening**: Die opening approximately slightly below the required OD of the wire.
- **Temperature profile extruder**: The profile shown below may vary slightly depending on extruder type, head design & output.

![Temperature profile extruder](image)

- **Maximum mass temperature**: 160 - 170°C
- **Conductor pre-heating**: Preheating not required, but may positively influence elongation at break
- **Wire/conductor**: Bare copper / Tin-coated
- **Quenching**: Cool with 60°C-80°C water in first cooling compartment
- **Drying**: Pre-dry at 60°C during 4 hrs.
- **Recommended colour master batches**: Well dispersed EVA master batch 0,5-1,0%. For black jacket applications, UV resistance can be obtained by adding a higher level of master batch depending on requirements and type of carbon black master batch used.

CROSS-LINKING INFORMATION

- **Recommended radiation dose**: 120 kGy

STORAGE INFORMATION

- **Form & packaging**: Pellets in sizes 2.8mm & 5.5mm
- **Shelf life**: Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)
- **1 year after production**

Note: The information given in this datasheet is believed to be accurate and reliable. However, no warranty, express or implied, or guarantee is given as to the suitability, accuracy, reliability or completeness of the information. This information does not hold us liable for damages or penalties resulting from following our suggestions or recommendations.