



**Apec® 1745 RE**  
**PC**

Covestro Deutschland AG

- MVR (330 °C/2.16kg) 17 cm³/10 min
- easy release
- for superheated steam sterilization up to 143 °C
- meets criteria of US Pharmacopeia (USP) Class VI
- biocompatible according to many ISO 10993-1 test requirements
- softening temperature (VST/B 120)=170 °C
- Films for medical packaging
- Contact lens holders
- Medical vessels
- Safety valve for respiration aids
- Syringe tops

| Rheological properties      | Value | Unit      | Test Standard   |
|-----------------------------|-------|-----------|-----------------|
| <b>ISO Data</b>             |       |           |                 |
| Melt volume-flow rate, MVR  | 17    | cm³/10min | ISO 1133        |
| Temperature                 | 330   | °C        | -               |
| Load                        | 2.16  | kg        | -               |
| Molding shrinkage, parallel | 0.8   | %         | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 0.8   | %         | ISO 294-4, 2577 |
| Melt Flow Index, MFI        | 17    | g/10min   | ISO 1133        |
| MFI temperature             | 330   | °C        | -               |
| MFI load                    | 2.16  | kg        | -               |

| Mechanical Properties            | Value    | Unit  | Test Standard |
|----------------------------------|----------|-------|---------------|
| <b>ISO Data</b>                  |          |       |               |
| Tensile Modulus                  | 2400     | MPa   | ISO 527       |
| Yield stress                     | 70       | MPa   | ISO 527       |
| Yield strain                     | 6.8      | %     | ISO 527       |
| Nominal strain at break          | >50      | %     | ISO 527       |
| Impact Strength (Charpy), +23 °C | no break | kJ/m² | ISO 179/1eU   |
| Impact Strength (Charpy), -30 °C | no break | kJ/m² | ISO 179/1eU   |
| Flexural Modulus (23 °C)         | 2400     | MPa   | ISO 178       |
| Ball Indentation Hardness        | 120      | MPa   | ISO 2039-1    |

| Thermal Properties                          | Value | Unit  | Test Standard  |
|---------------------------------------------|-------|-------|----------------|
| <b>ISO Data</b>                             |       |       |                |
| Temp. of deflection under load (1.80 MPa)   | 148   | °C    | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa)   | 161   | °C    | ISO 75-1/-2    |
| Coeff. of Linear Therm. Expansion, parallel | 65    | E-6/K | ISO 11359-1/-2 |
| Coeff. of Linear Therm. Expansion, normal   | 65    | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn.       | HB    | class | UL 94          |
| Thickness tested                            | 1.5   | mm    | -              |
| Oxygen index                                | 25    | %     | ISO 4589-1/-2  |
| Glow Wire (GWFI, Flammability Index)        | 850   | °C    | IEC 60695-2-12 |
| GWFI - thickness tested (1)                 | 2     | mm    | -              |

| Electrical Properties        | Value | Unit  | Test Standard |
|------------------------------|-------|-------|---------------|
| <b>ISO Data</b>              |       |       |               |
| Relative permittivity, 100Hz | 3     | -     | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 2.9   | -     | IEC 62631-2-1 |
| Dissipation Factor, 100Hz    | 10    | E-4   | IEC 62631-2-1 |
| Dissipation Factor, 1MHz     | 80    | E-4   | IEC 62631-2-1 |
| Volume Resistivity           | >1E13 | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity          | >1E15 | Ohm   | IEC 62631-3-2 |
| Electric Strength            | 35    | kV/mm | IEC 60243-1   |
| Comparative tracking index   | 250   | -     | IEC 60112     |

| Other Properties    | Value | Unit  | Test Standard  |
|---------------------|-------|-------|----------------|
| <b>ISO Data</b>     |       |       |                |
| Water Absorption    | 0.3   | %     | Sim. to ISO 62 |
| Humidity absorption | 0.12  | %     | Sim. to ISO 62 |
| Density             | 1170  | kg/m³ | ISO 1183       |

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| Optical Properties  | Value | Unit | Test Standard |
|---------------------|-------|------|---------------|
| <b>ASTM Data</b>    |       |      |               |
| Index of Refraction | 1.58  | -    | ISO 489       |

| Test specimen production              | Value | Unit | Test Standard |
|---------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                       |       |      |               |
| Injection Molding, melt temperature   | 330   | °C   | ISO 294       |
| Injection Molding, mold temperature   | 100   | °C   | ISO 294       |
| Injection Molding, injection velocity | 200   | mm/s | ISO 294       |

| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 130       | °C   | -             |
| Pre-drying - Time                           | 2 - 3     | h    | -             |
| Processing humidity                         | ≤0.02     | %    | -             |
| Melt temperature                            | 320 - 340 | °C   | -             |
| Mold temperature                            | 110 - 130 | °C   | -             |
| Zone 1                                      | 290 - 300 | °C   | -             |
| Zone 2                                      | 300 - 310 | °C   | -             |
| Zone 3                                      | 310 - 320 | °C   | -             |
| Nozzle temperature                          | 320 - 330 | °C   | -             |
| Back pressure                               | 5 - 15    | MPa  | -             |

### Characteristics

#### Processing

Injection Molding

#### Additives

Release agent

#### Special Characteristics

Heat aging stabilized, Transparent, Sterilizable, Steam sterilization

#### Certifications

Contains renewable resources, Medical, Biocompatibility ISO 10993, US Pharmacopeia Class VI Approved, ISCC Plus

#### Applications

Medical, Packaging