

## FORTRON® 0205 - PPS

### Description

Medium-range viscosity, for compounding

0205 is an easy flowing unfilled grade. It demonstrates excellent chemical resistance and thermal stability. Intended for compounding with various fillers. Available standard in pellet (0205P4) and powder 'flake' (0205B4) form.

| Physical properties                  | Value | Unit               | Test Standard   |
|--------------------------------------|-------|--------------------|-----------------|
| Density                              | 84.3  | lb/ft <sup>3</sup> | ISO 1183        |
| Molding shrinkage, parallel (flow)   | 1.2   | %                  | ISO 294-4, 2577 |
| Molding shrinkage, transverse normal | 1.5   | %                  | ISO 294-4, 2577 |
| Water absorption, 23°C-sat           | 0.02  | %                  | Sim. to ISO 62  |

| Mechanical properties            | Value  | Unit                  | Test Standard |
|----------------------------------|--------|-----------------------|---------------|
| Tensile modulus                  | 580152 | psi                   | ISO 527-1, -2 |
| Tensile stress at break, 5mm/min | 9570   | psi                   | ISO 527-1, -2 |
| Tensile strain at break, 5mm/min | 2      | %                     | ISO 527-1, -2 |
| Flexural modulus, 23°C           | 566000 | psi                   | ISO 178       |
| Flexural stress at break         | 18900  | psi                   | ISO 178       |
| Izod impact notched, 23°C        | 0.951  | ft-lb/in <sup>2</sup> | ISO 180/1A    |
| Izod impact unnotched, 23°C      | 14.3   | ft-lb/in <sup>2</sup> | ISO 180/1U    |
| Compressive stress at 6% strain  | 18900  | psi                   | ISO 604       |
| Rockwell hardness (M-Scale)      | 95     | M-Scale               | ISO 2039-2    |

| Thermal properties                         | Value | Unit   | Test Standard     |
|--------------------------------------------|-------|--------|-------------------|
| Melting temperature, 10°C/min              | 536   | °F     | ISO 11357-1/-3    |
| Glass transition temperature, 10°C/min     | 194   | °F     | ISO 11357-1,-2,-3 |
| DTUL at 1.8 MPa                            | 239   | °F     | ISO 75-1, -2      |
| DTUL at 8.0 MPa                            | 203   | °F     | ISO 75-1, -2      |
| Coeff. of linear therm expansion, parallel | 0.294 | E-4/°F | ISO 11359-2       |
| Coeff. of linear therm expansion, normal   | 0.289 | E-4/°F | ISO 11359-2       |

| Electrical properties        | Value | Unit  | Test Standard |
|------------------------------|-------|-------|---------------|
| Volume resistivity, 23°C     | 1E9   | Ohm*m | IEC 62631-3-1 |
| Electric strength, 23°C (AC) | 432   | kV/in | IEC 60243-1   |
| Comparative tracking index   | PLC 4 | -     | UL 746        |

| Rheological calculation properties | Value | Unit     | Test Standard |
|------------------------------------|-------|----------|---------------|
| Spec. heat capacity melt           | 1830  | J/(kg K) | Internal      |

### Typical injection moulding processing conditions

| Pre Drying                                      | Value     | Unit |
|-------------------------------------------------|-----------|------|
| Necessary low maximum residual moisture content | 0.02      | %    |
| Drying time                                     | 3 - 4     | h    |
| Drying temperature                              | 230 - 248 | °F   |

| Temperature              | Value     | Unit |
|--------------------------|-----------|------|
| Hopper temperature       | 68 - 86   | °F   |
| Feeding zone temperature | 140 - 176 | °F   |
| Zone1 temperature        | 554 - 572 | °F   |
| Zone2 temperature        | 572 - 590 | °F   |
| Zone3 temperature        | 590 - 608 | °F   |
| Zone4 temperature        | 590 - 608 | °F   |
| Nozzle temperature       | 572 - 590 | °F   |
| Melt temperature         | 590 - 608 | °F   |



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|                        |           |    |
|------------------------|-----------|----|
| Mold temperature       | 284 - 320 | °F |
| Hot runner temperature | 590 - 608 | °F |

| Pressure           | Value | Unit |
|--------------------|-------|------|
| Back pressure max. | 30    | bar  |

| Speed           | Value |
|-----------------|-------|
| Injection speed | fast  |

| Screw Speed                | Value | Unit |
|----------------------------|-------|------|
| Screw speed diameter, 25mm | 120   | RPM  |
| Screw speed diameter, 40mm | 75    | RPM  |
| Screw speed diameter, 55mm | 50    | RPM  |

### Other text information

#### Pre-drying

FORTRON should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be  $\leq -30^{\circ}\text{C}$ . The time between drying and processing should be as short as possible.

#### Longer pre-drying times/storage

For subsequent storage the material should be stored dry in the dryer until processed ( $\leq 60\text{ h}$ ).

#### Injection molding

On injection molding machines with 15-25 D long three-section screws, are usual in the trade, the unreinforced FORTRON is processable. A shut-off nozzle is recommended.

Melt temperature 310-320 degC

Mold wall temperature at least 140 degC

A medium injection rate is normally preferred. All mold cavities must be effectively vented.

#### Injection Molding Preprocessing

In spite of the minimum moisture absorption a drying of FORTRON is necessary. Predrying in a dehumidified air dryer at 120 degC/3-4 hours is recommended.

### Characteristics

**Special Characteristics** Chemical resistant, Flame retardant

**Product Categories** Unfilled

**Processing** Injection molding, Other extrusion

**Delivery Form** Pellets, Powder

