

# CELANEX® 2104UV

## CELANEX® PBT

Celanex 2104UV is an unreinforced, impact modified, UV stabilized PBT designed for outdoor agricultural, industrial and automotive applications. Celanex 2104UV is suitable for injection molding applications.

### Product information

|                      |       |           |
|----------------------|-------|-----------|
| Resin Identification | PBT   | ISO 1043  |
| Part Marking Code    | >PBT< | ISO 11469 |

### Rheological properties

|                                    |             |                 |
|------------------------------------|-------------|-----------------|
| Melt mass-flow rate                | 3 g/10min   | ISO 1133        |
| Melt mass-flow rate, Temperature   | 250 °C      |                 |
| Melt mass-flow rate, Load          | 2.16 kg     |                 |
| Moulding shrinkage range, parallel | 2.2 - 3.3 % | ISO 294-4, 2577 |
| Moulding shrinkage range, normal   | 2.2 - 3.3 % | ISO 294-4, 2577 |

### Typical mechanical properties

|                                       |                       |              |
|---------------------------------------|-----------------------|--------------|
| Tensile modulus                       | 2100 MPa              | ISO 527-1/-2 |
| Tensile stress at yield, 50mm/min     | 46 MPa                | ISO 527-1/-2 |
| Tensile strain at yield, 50mm/min     | 10 %                  | ISO 527-1/-2 |
| Nominal strain at break               | >50 %                 | ISO 527-1/-2 |
| Flexural modulus                      | 2080 MPa              | ISO 178      |
| Flexural strength                     | 63 MPa                | ISO 178      |
| Charpy impact strength, 23°C          | N kJ/m <sup>2</sup>   | ISO 179/1eU  |
| Charpy impact strength, -30°C         | N kJ/m <sup>2</sup>   | ISO 179/1eU  |
| Charpy notched impact strength, 23°C  | 15 kJ/m <sup>2</sup>  | ISO 179/1eA  |
| Charpy notched impact strength, -30°C | 6.9 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Izod notched impact strength, 23°C    | 3.7 kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod impact strength, 23°C            | 123 kJ/m <sup>2</sup> | ISO 180/1U   |
| Poisson's ratio                       | 0.4 <sup>[C]</sup>    |              |

[C]: Calculated

### Thermal properties

|                                                |        |                |
|------------------------------------------------|--------|----------------|
| Melting temperature, 10°C/min                  | 225 °C | ISO 11357-1/-3 |
| Temperature of deflection under load, 0.45 MPa | 130 °C | ISO 75-1/-2    |

### Electrical properties

|                              |             |               |
|------------------------------|-------------|---------------|
| Relative permittivity, 100Hz | 4           | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 3.5         | IEC 62631-2-1 |
| Dissipation factor, 100Hz    | 70 E-4      | IEC 62631-2-1 |
| Dissipation factor, 1MHz     | 200 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            | 23 kV/mm    | IEC 60243-1   |

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## Physical/Other properties

|         |                        |          |
|---------|------------------------|----------|
| Density | 1310 kg/m <sup>3</sup> | ISO 1183 |
|---------|------------------------|----------|

## Injection

|                                 |               |
|---------------------------------|---------------|
| Drying Recommended              | yes           |
| Drying Temperature              | 120 °C        |
| Drying Time, Dehumidified Dryer | 4 h           |
| Processing Moisture Content     | ≤0.02 %       |
| Melt Temperature Optimum        | 250 °C        |
| Min. melt temperature           | 240 °C        |
| Max. melt temperature           | 260 °C        |
| Screw tangential speed          | 0.1 - 0.3 m/s |
| Mold Temperature Optimum        | 80 °C         |
| Min. mould temperature          | 60 °C         |
| Max. mould temperature          | 130 °C        |

## Characteristics

|                         |                                                                                  |
|-------------------------|----------------------------------------------------------------------------------|
| Processing              | Injection Moulding                                                               |
| Delivery form           | Pellets                                                                          |
| Additives               | Release agent                                                                    |
| Special characteristics | High impact or impact modified, U.V. stabilised or stable to weather, Colourable |

## Additional information

Processing Notes

### Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 250°F (121°C) for 4 hours.

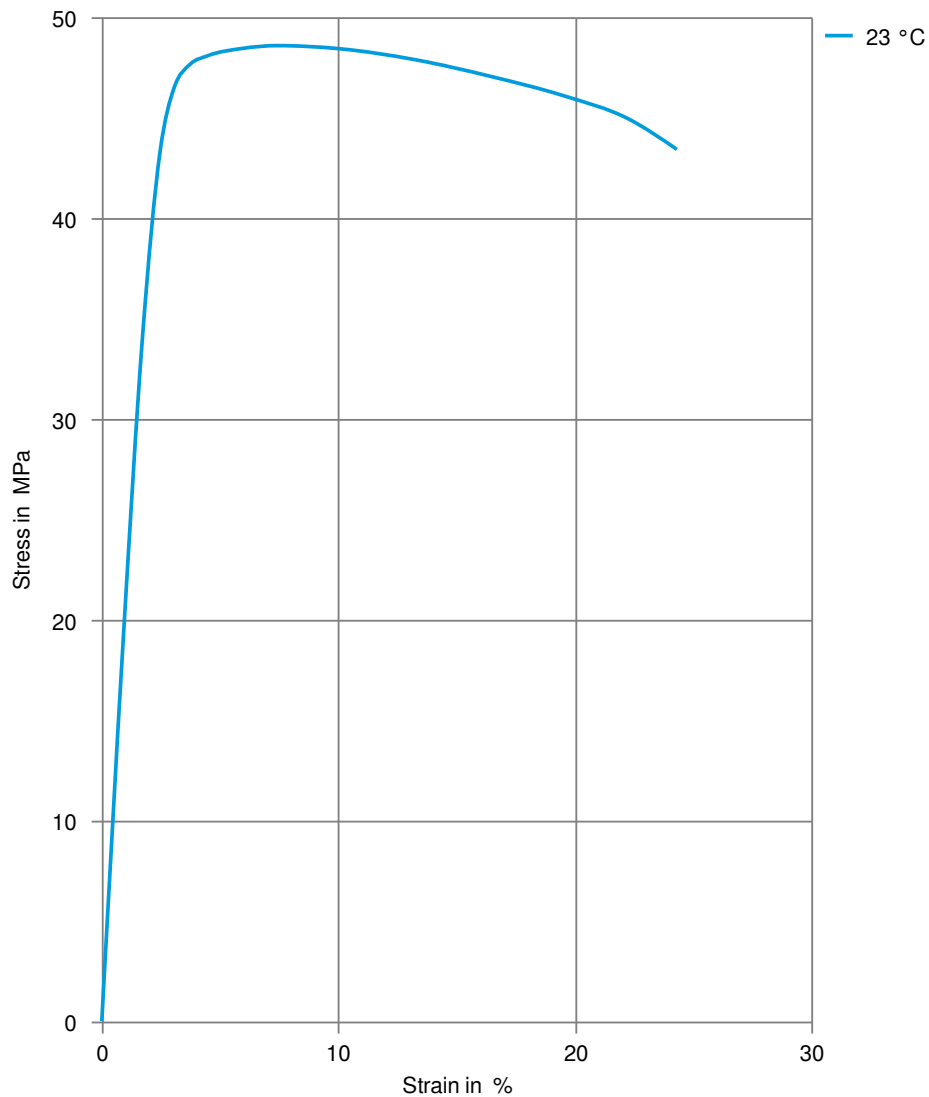
### Storage

For subsequent storage of the material in the dryer until processed (≤ 60 h) it is necessary to lower the temperature to 100° C.

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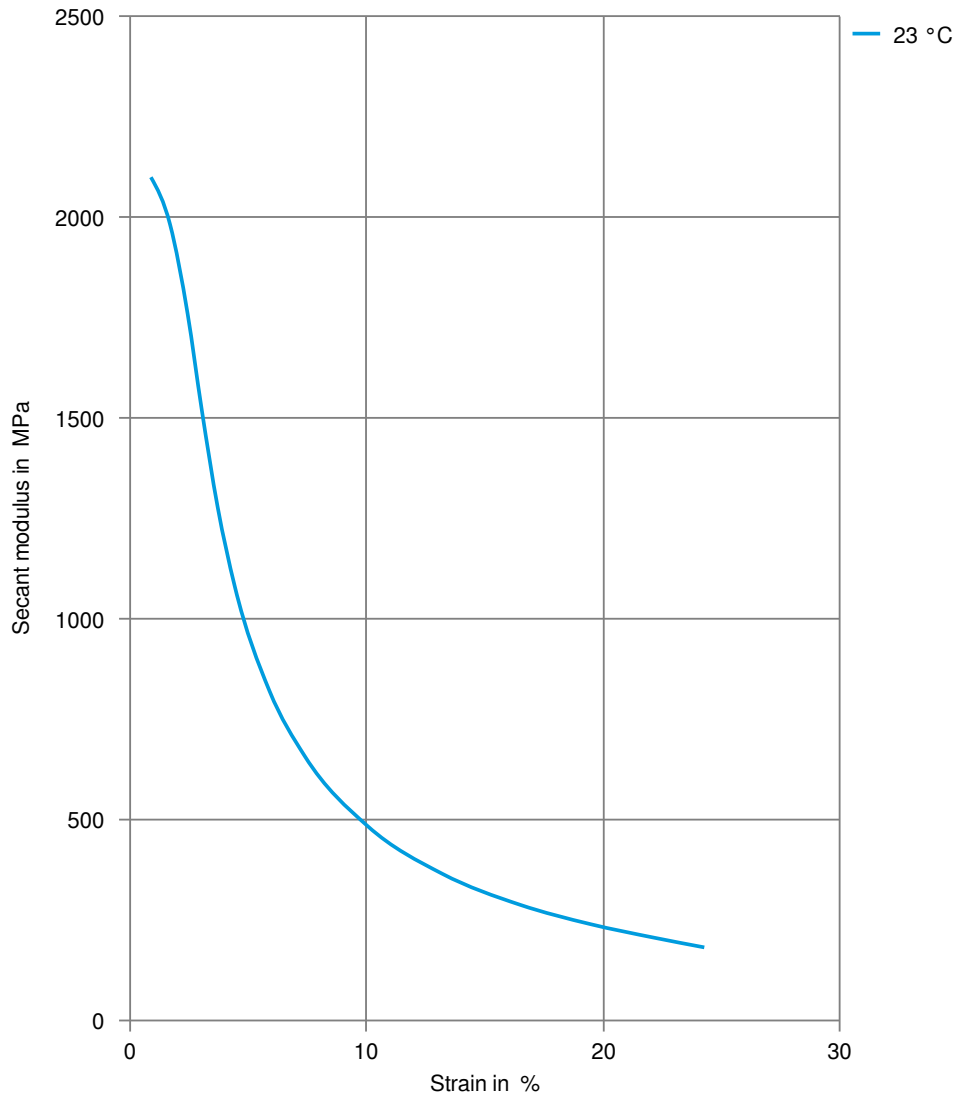
## Stress-strain



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## Secant modulus-strain



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