Dr. Dietrich Müller GmbH
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# Technical films

## Ultrason® PES TC 00211

**Description:**

Ultrason® PES TC 00211 is a special injection molding grade, medium viscosity for applications with high requirements on their own colour, transparency and freedom of spots. Abbreviated designation according to ISO 1043-1: PESU.

**Delivery form:**

Ultrason® PES TC 00211 granules are supplied in bags and / or octabins. The bulk density is 700 to 800 g/l. In undamaged packaging Ultrason® PES TC 00211 has a long shelf life. Ultrason® PES TC 00211 granules contain moisture. It must therefore be dried for at least 4h at 130° C to 150° C (vacuum or dry air dryer) before processing.

**Storage conditions:**

In undamaged packaging Ultrason® PES TC 00211 has a long shelf life. Ultrason® PES TC 00211 granules contain moisture. It must therefore be dried for at least 4h at 130° C to 150° C (vacuum or dry air dryer) before processing.

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# Ultrason® PES TC 00211

**Product Safety:**

When handled and used properly, the product according to our experience and information, has no adverse health effects. The high processing temperature of Ultrason® PES TC 00211 requires - even more than other thermoplastics - increased caution when handling machines, tools, parts and melt remainders. Where there is uncertainty regarding the thermal capacity of plant and machinery, consultation should definitely be held with the responsible machine manufacturers. During injection molding, decomposed product must be removed by spraying into the open while at the same time reducing the cylinder temperature. Rapid cooling of the damaged material, for example in a water bath, reduces the odor. When the draining out of decomposed product fails, maybe in the cylinder, especially when nozzles are used to build an increased gas pressure, which can release suddenly in the nozzle or funnel area. Therefore, in this case when draining with deflagration, it is to be expected. With proper processing of Ultrason ® PES 00 211 TC and compliance with the temperature limits (maximum 390 ° C), there are no harmful fumes. As with all thermoplastic polymers decomposed Ultrason ® PES TC 00 211 contributes to high thermal stress, for example due to high melt temperatures, by too long melt residence times in the plasticizing and cleaning of plasticizing by cutting, forming gaseous decomposition products. In further processing the general dust limit value is in accordance with MAK – Value - compliance requirements. For ventilation of the workplace, general care is to be taken, preferably by an extractor hood over the cylinder unit. Regardless, accident prevention regulations must be observed. Under no circumstances may the plasticizing unit be dismantled under temperature.

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# Ultrason® PES TC 00211

| Properties | Norm | Unit | Value |
|---|---|---|---|
| Abbreviation | - | - | PESU |
| Density | ISO 1183 | kg/m³ | 1370 |
| Viscosity Index (in 0.01 g/ml Phenol/1.2, ortho-Dichlorbenzol, 1:1) | ISO 307, 1157, 1628 | cm³/g | 56 |
| Water Absorption, Equilibrium in water at 23 ° C | Similar to ISO 62 | % | 2.2 |
| Moisture Absorption, Saturation in standard atmosphere 23°C/50%r.F. | Similar to ISO 62 | % | 0.8 |
| Glass Transition Temperature, DSC (10°C/min) | ISO 11357-1/-2 | °C | 225 |
| Processing: Injection molding(M), extrusion(E), blow(B) | - | - | M, E, B |
| Melt Volume Rate MVR 360°C/10 kg | ISO 1133 | cm³/10min | 70 |
| Melt Temperature Range, Injection / Extrusion | - | °C | 340 – 390 |
| Mold Temperature Range, Injection Molding | - | °C | 140 – 180 |
| Shrinkage, Parallel | ISO 2577, 294-4 | % | 0.82 |

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# Ultrason® PES TC 00211

| | | | |
|---|---|---|---|
| Shrinkage, Vertical | ISO 2577, 294-4 | % | 0.86 |
| Testing according to UL-Standard at d = 1.6 mm thick | UL-94 | Class | V-0 |
| Tensile Modulus of Elasticity | ISO 527-1/-2 | MPa | 2700 |
| Tensile Strength at Yield, 50mm/min | ISO 527-1/-2 | MPa | 90 |
| Elongation at Yield, 50 mm/min | ISO 527-1/-2 | % | 6.7 |
| Charpy Impact Strength (23°C) | ISO 179/1eU | kJ/m² | N |
| Charpy Impact Strength (-30°C) | ISO 179/1eU | kJ/m² | N |
| Charpy- Notched Impact Strength (23°C) | ISO 179/1eA | kJ/m² | 6.5 |
| Charpy- Notched Impact Strength (-30°C) | ISO 179/1eA | kJ/m² | 7 |
| Izod- Notched Impact Strength (23°C) | ISO 180/A | kJ/m² | 6.5 |
| Izod- Notched Impact Strength (-30°C) | ISO 180/A | kJ/m² | 7 |
| ball Indentation Hardness at 358 N/30 s | ISO 2039-1 | MPa | 154 |
| Distortion Temperature under 1.8 MPa load (HDT A) | ISO 75-1/-2 | °C | 205 |
| Max. Working Temperature. up to several hours | - | °C | 220 |
| Temperature Index at Loss. To 50% of tensile strength after 20000 h | IEC 216 | °C | 180 |
| Therm. Coefficient of Linear Expansion, longitudinal (23-80 ° C) | ISO 11359-1/-2 | E-4/°C | 0.52 |
| Therm. Coefficient of Linear Expansion, longitudinal (180 ° C) | DIN 53752 | E-4/°C | 0.59 |
| Dielectric Constant (100Hz) | IEC 60250 | - | 3.9 |
| Dielectric Constant (1MhZ) | IEC 60250 | - | 3.8 |
| Dielectric. Loss Factor (100Hz) | IEC 60250 | E-4 | 17 |
| Dielectric. Loss Factor (1MHz) | IEC 60250 | E-4 | 140 |
| Dielectric Strength K20/K20 | IEC 60243-1 | kV/mm | 35 |
| Comparative Tracking Index, CTI, Test Solution A | IEC 60112 | - | 100 |
| Comparative Tracking Index, CTI, Test Solution B | IEC 60112 | - | 100 |
| Specific Volume Resistance | IEC 60093 | Ohm*m | >1E13 |
| Refractive Index (specimen thickness = 1 mm) | ISO 489 | - | 1.630 |
| Light Transmission Index (specimen thickness = 2 mm) | DIN 5036-3 | % | 88 |

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# Ultrason® PES TC 00211

**Trademark Information:** Ultrason® is a registered trademark of BASF.

**Please note:**

The information in this data sheet is based on our current knowledge and experience. They do not disengage the fabricator and user from own tests and inspections because of the plenty of possible effects. There is no judicial binding assurance of certain properties or of the qualification for a concrete application in our declaration. We recommend consulting us in individual cases. The acceptor of our products has to observe possible industrial property rights as well as present laws by himself.