

Material: **Polyvinylchloride (hard)**
 Abbreviation: **PVC - U**

Short description of Material:

An amorphous thermoplastic without plasticizer additives. PVC-U has high hardness and stiffness and can be welded and glued to form complex components.

Application examples:

- pump parts
- fixtures
- valve bodies
- conveyor stars
- construction parts in chemical equipment

Colours: black, red, white, grey (\approx RAL 7011), transparent

Mechanical values

| | | dry | |
|--|------------|-------|-------------------|
| Density | ISO 1183 | 1,42 | g/cm ³ |
| Yield stress | ISO 527 | 58 | MPa |
| Elongation due to tearing | ISO 527 | 15 | % |
| Modulus of elasticity resulting from tensile test | ISO 527 | 3.000 | MPa |
| Modulus of elasticity resulting from bending test | ISO 178 | - | MPa |
| Flexural strength | ISO 178 | 82 | MPa |
| Impact strength ¹⁾ | ISO 179 | o.B. | kJ/m ² |
| Notched-bar impact strength | ISO 179 | 4 | kJ/m ² |
| Ball indentation hardness H _{358/30} | ISO 2039-1 | 130 | MPa |
| Creep rate stress at 1% elongation ²⁾ | DIN 53 444 | - | MPa |
| Sliding friction coefficient against steel (dry running) ³⁾ | — | 0,60 | — |
| Sliding wear against steel (dry running) ³⁾ | — | 56,0 | µm/km |

Thermal values

| | | | |
|--|------------|----------|-----------------------------------|
| Melting temperature | ISO 3146 | - | °C |
| Thermal conductivity | DIN 52 612 | 0,159 | W/(K·m) |
| Specific thermal capacity | — | 1,05 | J/(g·K) |
| Coefficient of linear expansion ⁴⁾ | — | 8 | 10 ⁻⁵ ·K ⁻¹ |
| Operating temperature range (long-term) ⁵⁾ | — | 0 / + 50 | °C |
| Operating temperature range (short-term) ⁵⁾ | — | + 70 | °C |
| Fire behaviour | UL 94 | V - 0 | — |

Electrical values

| | | | |
|--------------------------------------|---------|------------------|-------|
| Dielectric constant ⁶⁾ | IEC 250 | 3,3 | — |
| Dielectric loss factor ⁶⁾ | IEC 250 | 0,025 | — |
| Specific volume resistance | IEC 93 | 10 ¹⁶ | Ω·cm |
| Surface resistance | IEC 93 | 10 ¹³ | Ω |
| Dielectric strength | IEC 243 | 39 | KV/mm |
| Creep current resistance | IEC 112 | KA 3b | — |

Miscellaneous data

| | | | |
|---|------------|--------|---|
| Moisture absorption in normal climate until saturated | DIN 53 715 | < 0,01 | % |
| Water absorption until saturated | ISO 62 | < 0,01 | % |

¹⁾: Measured with a pendulum impact testing machine 0,1 DIN 51 222

²⁾: Tension resulting in 1% total elongation after 1.000 h

³⁾: against steel, hardened and ground, P = 0,05 MPa, V = 0,6 m/s, t = 60 °C near running surface

⁴⁾: For a temperature range of + 23 °C to + 60 °C

⁵⁾: Experience values established with finished parts that are not under any stress in heated air, depending on the type and form of heat exposure, short-term = max. 1 h, long-term = months

⁶⁾: at 10⁶ Hz

w.b. = without breakage
 1 MPa = 1 N/mm²
 1 g/cm³ = 1.000 kg/m³
 1 kV/mm = 1 MV/m

Licharz GmbH

Industriepark Nord 15

D - 53567 Buchholz/Germany

Phone: ++49 / (0) 26 83 / 9 77 -0

Fax: ++49 / (0) 26 83 / 9 77 -111

Internet: www.licharz.de

E-Mail: info@licharz.de