



# UHMW PE / Ultra-high-molecular-weight polyethylene

## Alternative Designations

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## Key Features

Self-lubricating • Resistant to abrasion • Corrosion resistant • Durable • Low coefficient of friction

## Description

It is a type of thermoplastic made from ultrafine particles of polyethylene. It is used in a variety of applications where high wear resistance, low friction, and impact resistance are required. This plastic is extremely tough and has high resistance to abrasion and wear. It is corrosion resistant and self-lubricating. It has excellent mechanical properties even in sub-zero conditions. It is used in conveyor guides, wear pads, chemical tanks etc. it is available in either sheet or rod form and has easy machinability.

## Mechanical Properties

|                     |           |
|---------------------|-----------|
| Tensile modulus     | 551.5 MPa |
| Tensile strength    | 39.9 MPa  |
| Elongation at break | 300%      |
| Flexural strength   | 24.13 MPa |
| Flexural modulus    | 0.606 GPa |
| Hardness (Shore D)  | 64        |

## Thermal Properties

|  |       |
|--|-------|
| Melting temperature (20°C/min)         | 136°C |
| Heat deflection temperature (1.80 MPa) | 82°C  |
| Heat deflection temperature (0.45 MPa) | 95°C  |
| Softening temperature                  | 128°C |

## Physical Properties

|         |                        |
|---------|------------------------|
| Density | 0.93 g/cm <sup>3</sup> |
|---------|------------------------|

## Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit [Materialdatacenter.com](https://Materialdatacenter.com) for further information on this material.