

UHMW-PE

(ultra high molecular weight polyethylene)

POLYSTONE® M



Polyethylene is a low cost, chemically resistant plastic material that can be used for a wide variety of applications. The versatility of polyethylene has made it one of the world's most popular plastics. Polyethylene is available in a number of grades according to its molecular weight.

UHMW-PE (ultra high molecular weight polyethylene) is an extremely tough and abrasion resistant thermoplastic that is used for applications that require durability and/or abrasive wear resistance.

UHMW sheet is often used for lining chutes and hoppers in order to protect metal surfaces and promote the flow of solid materials such as sand, wood chips, or coal. UHMW is also used for packaging, conveyor, and food processing machinery parts including star wheels, idler sprockets, and under-chain wear strips.



KEY CHARACTERISTICS:

- Extremely tough and durable
- Low friction
- Excellent abrasion resistance
- Good chemical resistance
- Low water absorption
- Easy to fabricate
- Reprocessed grades available
- Enhanced bearing and wear grades available
- FDA compliant grades available

APPLICATIONS:

- Chute liners and hopper liners
- Wear strips
- Star wheels
- Idler sprockets
- Packaging machinery components
- Food processing machinery components

POLYETHYLENE TYPICAL PROPERTIES:

| | UNITS | ASTM TEST | LDPE | HDPE | UHMW-PE |
|---|---------------------------|-----------|----------|---------|---------|
| Tensile strength | psi | D-638 | 1,400 | 4,000 | 3,100 |
| Flexural modulus | psi | D-790 | 30,000 | 200,000 | 110,000 |
| Izod impact (notched) | ft-lbs/in of notch | D-256 | no break | 1.3 | 18.0* |
| Heat deflection temperature @66 psi | °F | D-648 | 122 | 172 | - |
| Maximum continuous service temperature in air | °F | | - | - | 180 |
| Water absorption (immersion 24 hours) | % | D-570 | 0.10 | 0.10 | slight |
| Coefficient of linear thermal expansion | in/in/°Fx10 ⁻⁵ | D-696 | - | 7.0 | 11.1 |