# TECHNICAL SHEET

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## HDPE (High Density Polyethylene)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Equivalence:** | ASTM D4976 – 12a | | | ---- | | | ---- | |
| **Available in:** | Plate | ---- | ---- | ---- | ---- | ---- | ---- | ---- |

| **Mechanical properties (approx. at room temperature):** | **Densisty, g/cm³** | **Tensile strength, MPa (ksi)** | **Elastic modulus, MPa (ksi)** |
|---|---|---|---|
| | 0.95 | 17 (2.46) | 450 (65.2) |

- The values indicated are minimum estimates, they are not mandatory, and should only be taken as reference in the general characteristics of polyethylene according to ASTM D4976 - 12a.
- Special values must be consulted and agreed upon with the manufacturer.

## CHARACTERISTICS

The most important characteristics of **HDPE** for industrial use are as follows:

- It is abrasion-resistant due to its linear molecular structure, which makes it difficult for molecules to detach from the material's surface. This molecular structure allows it to be used in applications involving high-speed handling of solid materials, such as in transportation equipment, hopper linings, and machinery parts.
- It also has good impact resistance, allowing it to withstand sudden shocks and forces without breaking.
- It is resistant to a wide range of chemicals, including acids, alkalis, and solvents, making it ideal for applications where the material will be in contact with aggressive chemicals.
- It has high corrosion resistance compared to other plastics, allowing it to be used in wet environments and corrosive settings.
- Similarly, it has low water absorption, which helps maintain its mechanical properties even in humid environments, preventing degradation.
- It has a low coefficient of friction, enabling it to have sliding applications.
- Its low density, approximately 0.94 g/cm$^3$, makes it lighter than other polymers.

## APPLICATIONS

HDPE is used in a wide range of industrial applications. Due to its wear resistance, it can be found in bearings, gears, wear plates, and seals. Thanks to its low reactivity with chemicals, it is employed in pipes and coatings for transporting chemicals, including water. Additionally, it is used as a coating in hoppers and other equipment where low adhesion and wear resistance are required.



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