

Technical Data Sheet

LDPE L1922T
Low Density Polyethylene

Low-density polyethylene (LDPE) is a thermoplastic made from the monomer ethylene. It was the first grade of polyethylene. LDPE is defined by a density range of 0.917–0.930 g/cm³.

LDPE has more branching (on about 2% of the carbon atoms) than HDPE, so its intermolecular forces (instantaneous-dipole induced-dipole attraction) are weaker, its tensile strength is lower, and its resilience is higher. Also, because its molecules are less tightly packed and less crystalline due to the side branches, its density is lower. LDPE uses majorly revolve around manufacturing containers, dispensing bottles, wash bottles, tubing, plastic bags for computer components, and various molded laboratory equipments.

Applications:

The grade especially developed for applications requiring a good balance between flow properties and mechanical properties, e.g. toys, houseware, snap-on lids.

| PROPERTIES | | UNIT | TYPICAL VALUE |
|-----------------------|--|----------|---------------|
| Polymer properties | Density | Kg/m3 | 919 |
| | Melt flow rate (190 °C, 2.16 kg) | dg/min | 22 |
| | Melt flow rate (190 °C, 5 kg) | dg/min | 75 |
| | Melt Volume rate (190 °C, 2.16 kg) | dg/10min | 29 |
| | Melt flow rate (190 °C, 5 kg) | dg/10min | 98 |
| Mechanical Properties | Stress at yield | Mpa | 8 |
| | Stress at break | Mpa | 7 |
| | Strain at break | % | 400 |
| | Tensile modulus | Mpa | 175 |
| | Creep modulus after 1 hour | Mpa | 80 |
| | Creep modulus after 1000 hour | Mpa | 45 |
| | Notched Izod at +23°C | KJ/M2 | 42 |
| | Notched Izod at -30°C | KJ/M2 | 5 |
| | Notched tensile impact strength | KJ/M2 | 86 |
| | Elongation at break | % | 8.4 |
| | Maximum tension | Mpa | 16 |
| | Hardness Shore D | - | 45 |
| | Applied load | N | 49 |
| | Ball indentation hardness | Mpa | 16 |
| | ESCR | h | 3 |
| Thermal properties | Heat deflection temperature at 0.45 MPA(HDT/B) | °C | 39 |
| | Vicat softening temperature at 10 n (VST/A) | °C | 82 |
| DSC TEST | Melting point | °C | 105 |
| | Enthalpy change | J/g | 104 |