

## PRODUCT DESCRIPTION

LOW DENSITY POLYETHYLENE (LDPE) is a lightweight material (SG 0.92) with low water absorption and good chemical resistance. It is renowned for its low stiffness with high impact strength at low temperatures (-50°C to +80°C). The material is easily processed by most traditional methods and is food compliant.



### KEY CHARACTERISTICS

- Machines well to a polished finish
- Solvent cemented and welded
- Relatively less expensive than other plastics
- Strong and stiff
- Flame retardant grades available

### APPLICATIONS

- Machine guards
- Corrosive fluid handling
- Valves
- Tanks and water applications
- Pulleys

## TECHNICAL PROPERTIES

| KEY: TECHNICAL | YES | LIMITED | NO/NO DATA |
|----------------|-----|---------|------------|
|                | +   | O       | ---        |

| PHYSICAL PROPERTIES   | TEST     | UNIT              | RESULT |
|---|----------|-------------------|--------|
| Specific gravity  | ISO 1183 | g/cm <sup>3</sup> | 0.93   |
| Water absorption  | ISO 62   | %                 | 0.01   |
| Maximum service temp. Upper temp limit (no stronger mechanical stress involved) | N/A      | °C                | 50     |
| Lower temp limit  | N/A      | °C                | -40    |

| MECHANICAL PROPERTIES                | UNIT              | RESULT   |
|--------------------------------------|-------------------|----------|
| Tensile strength at yield            | MPa               | 11       |
| Elongation at yield                  | %                 | ---      |
| Tensile strength at break            | MPa               | 11       |
| Elongation at break                  | %                 | 605      |
| Impact strength                      | kJ/m <sup>2</sup> | No break |
| Notch impact strength                | kJ/m <sup>2</sup> | 44       |
| Ball indentation / Rockwell hardness | MPa               | 44       |
| Shore-D                              | N/A               | 49       |
| Flexural strength                    | MPa               | ---      |
| Modulus of elasticity                | MPa               | 220      |

| THERMAL PROPERTIES                      | TEST      | UNIT                   | RESULT |
|---|-----------|------------------------|--------|
| Vicat-softening point VST/B/50          | ISO 306   | °C                     | 88     |
| Heat deflection temperature HDT/B       | ISO 75    | °C                     | 39     |
| Heat deflection temperature HDT/A       | N/A       | °C                     | ---    |
| Coefficient of linear thermal expansion | DIN 53752 | $k^{-1} \cdot 10^{-4}$ | ---    |
| Thermal conductivity at 20 °C           | DIN 52612 | W/(m*K)                | ---    |

| ELECTRICAL PROPERTIES           | TEST      | UNIT              | RESULT |
|---------------------------------|-----------|-------------------|--------|
| Volume resistivity              | VDE 0303  | $\Omega \times m$ | 1014   |
| Surface resistivity             | N/A       | $\Omega$          | 1014   |
| Dielectric constant at 1MHz     | N/A       | N/A               | 2.18   |
| Dielectric loss factor at 1 MHz | DIN 53483 | N/A               | 0.0007 |
| Dielectric strength             | VDE 0303  | kV/mm             | 19.7   |
| Tracking resistance             | IEC 60112 | N/A               | ---    |

| ADDITIONAL DATA | TEST  | UNIT | RESULT |
|-----------------|-------|------|--------|
| Bondability     | N/A   | N/A  | O      |
| Food compliance | FDA   | N/A  | +      |
| Flammability    | UL 94 | N/A  | HB     |

All the above information is for guide purposes only. The data has been taken from standard test results provided by our manufacturers.

## CHEMICAL PROPERTIES

| KEY: CHEMICAL | YES | LIMITED | NO/NO DATA |
|---------------|-----|---------|------------|
|               | +   | O       | ---        |

| CHEMICAL PROPERTIES |         |              |       |                      |         |              |       |
|---------------------|---------|--------------|-------|----------------------|---------|--------------|-------|
| Agent               | Conc. % | Working Temp |       | Agent                | Conc. % | Working Temp |       |
|                     |         | 20 °C        | 60 °C |                      |         | 20 °C        | 60 °C |
| Acetic Acid         | 100     | O            | ---   | Calcium Chloride     |         | +            | +     |
| Acetone             | 100     | O            | ---   | Carbon Disulphate    | 100     | ---          | ---   |
| Ammonia             | Conc.   | +            | +     | Carbon Tetrachloride |         | ---          | ---   |
| Ammonium Chloride   |         | +            | +     | Chlorine, Gas        | 100     | ---          | ---   |
| Amyl Alcohol        |         | O            | O     | Chlorobenzene        | 100     | ---          | ---   |
| Benzene             |         | ---          |       | Chloroform           |         | ---          | ---   |
| Bleaching Solution  | 12.5Cl  |              |       | Citric Acid          | 10      | +            | +     |
| Boric Acid          | 100     | +            | +     | Cresol               |         |              |       |
| Brake Fluid         |         | O            | ---   | Cyclohexanone        | 100     | ---          | ---   |
| Butyl Acetate       |         | +            | O     | Cyclohexene          | 100     | ---          | ---   |

| CHEMICAL PROPERTIES    |         |              |       |                            |             |              |       |
|------------------------|---------|--------------|-------|----------------------------|-------------|--------------|-------|
| Agent                  | Conc. % | Working Temp |       | Agent                      | Conc. %     | Working Temp |       |
|                        |         | 20 °C        | 60 °C |                            |             | 20 °C        | 60 °C |
| Diesel Fuel            |         | +            | ---   | Oxalic Acid                |             | +            | +     |
| Ethyl Acetate          | 100     | O            | ---   | Ozone, Gas                 | ca. 0,5 ppm | ---          | ---   |
| Ethyl Alcohol          | 96      | +            | +     | Paraffin Oil               | 100         | +            | O     |
| Ethylene Chloride      | 100     | ---          | ---   | Perchloroethylene          |             | ---          | ---   |
| Formic Acid            | 10      | +            | +     | Petroleum                  | 100         | O            | ---   |
| Frost Protection Agent |         |              |       | Petroleum, aromatic free   | 100         |              |       |
| Fuel, aromatic free    |         | O            | ---   | Phenol, aqu                | ca.9        | O            | ---   |
| Glycerine              | 100     | +            | +     | Phosphoric Acid            | 50          | +            | +     |
| Glycol                 | 100     |              |       | Potassium Hydroxide Liquor | 50          | +            | +     |
| Heating Oil            |         |              |       | Propyl Alcohol             |             | +            | +     |
| Heptane                | 100     | ---          | ---   | Pyridine                   |             |              |       |
| Hydrochloric Acid      | 10      | +            | +     | Silicone Oil               |             | +            | +     |
| Hydrochloric Acid      | Conc.   | +            | +     | Sodium Carbonate, aqu      |             | +            | +     |
| Hydrofluoric Acid      | 40      | +            | +     | Sodium Chloride, aqu       |             | +            | +     |
| Hydrogen Peroxide      | 10      | +            | O     | Sodium Hydroxide Liquor    | 60          |              |       |
| Hydrogen Sulphide      |         | +            | +     | Sodium Hydrogen Sulphite   |             | +            | +     |
| Isopropyl Alcohol      | 100     | O            | ---   | Sodium Nitrate, aqu        |             | +            | +     |
| Mercurochrome          |         |              |       | Sodium Thiosulfate         |             |              |       |
| Methyl ethyl ketone    | 100     |              |       | Sulphuric Acid             | 96          | O            | ---   |
| Methylene Chloride     | 100     | ---          | ---   | Tetrahydrofuran            | 100         | ---          | --    |
| Nitric Acid            | 10      | +            | +     | Toluene                    | 100         | ---          | ---   |
| Nitric Acid            | 50      | +            | O     | Trichloroethylene          | 100         | ---          | ---   |
| Nitrobenzene           |         | ---          | ---   | Xylene                     |             | ---          | ---   |

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