



PE300 Rod Extruded

Natural / Black

PE300 is a lightweight (SG 0.96) and strong material that has excellent sliding properties, good chemical resistance, low moisture absorption and high impact strength at low temperatures (-50°C to +80°C). Easily processed by most traditional methods and is food compliant.

product information

| | |
|---------------|---------------------------|
| Name: | High Density Polyethylene |
| Other names: | PE-HD |
| Abbreviation: | PE300, HDPE |

key characteristics

- » Good low temperature resistance
- » Low density
- » Low water absorption
- » Good electrical properties
- » Food compliant

applications

- » Pumps
- » Tank construction
- » Gaskets
- » Medical applications
- » Components for the food industry

this document contains

- » Technical Datasheet (Page 1)
- » Chemical Datasheet (Page 2)
- » Safety Datasheet (Pages 3-4)

For any further information regarding food, fire and water certificates then please contact the sales team on 0116 232 1010

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technical properties

| Physical Properties | Test | Unit | Result |
|---|----------|-------------------|--------|
| 1. Specific gravity | ISO 1183 | g/cm ³ | 0.95 |
| 2. Water absorption in saturation | ISO 62 | % | 0.2 |
| 3. Maximum service temp. Upper temp limit (no stronger mechanical stress involved) | - | °C | 80 |
| Lower temp limit | - | °C | -100 |

| Mechanical Properties | Test | Unit | Result |
|---|------------|-------------------|--------|
| 1. Tensile strength at yield | ISO 527 | MPa | - |
| 2. Elongation at yield | ISO 527 | % | 10 |
| 3. Tensile strength at break | ISO 527 | MPa | - |
| 4. Elongation at break | ISO 527 | % | 750 |
| 5. Impact strength | ISO 179 | kJ/m ² | - |
| 6. Notch impact strength | ISO 179 | kJ/m ² | 105 |
| 7. Ball indentation / Rockwell hardness | ISO 2039-1 | MPa | - |
| 8. Shore-D | DIN 53505 | - | 66 |
| 9. Flexural strength | ISO 178 | MPa | - |
| 10. Modulus of elasticity | ISO 527 | MPa | - |

| Thermal Properties | Test Method | Unit | Result |
|--|-------------|--------------|--------|
| 1. Vicat-softening point VST/B/50 | ISO 306 | °C | 80 |
| 2. Heat deflection temperature 1.8 MPa | ISO 75 | °C | 44 |
| HDT/A | - | °C | - |
| 3. Coefficient of linear thermal expansion at 23°C | ASTMD 696 | µm/ (m * °K) | 160 |
| 4. Thermal conductivity at 23°C | DIN 52612 | W / (K *m) | 0.4 |

| Electrical Properties | Test Method | Unit | Result |
|------------------------------------|-------------|-------|-------------------|
| 1. Volume resistivity | IEC 6093 | Ω x m | >10 ¹⁶ |
| 2. Surface resistivity | IEC 6094 | Ω | >10 ¹³ |
| 3. Dielectric constant at 1MHz | IEC 60250 | abs | 2.4 |
| 4. Dielectric loss factor at 1 MHz | IEC 60250 | tan | 0.0002 |
| 5. Dielectric strength | IEC 60243 | kV/mm | 45 |
| 6. Tracking resistance | IEC 60112 | - | - |

| Additional Data | Test Method | Unit | Result |
|--------------------|-------------|------|--------|
| 1. Bondability | - | - | - |
| 2. Food compliance | FDA | - | + |
| 3. Flammability | UL 94 | - | HB |

Key:

| | | |
|-----|---------|---------------|
| Yes | Limited | No or no data |
| + | o | - |

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

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chemical properties

| Agent | Conc % | Working Temp | |
|------------------------|---------|--------------|------|
| | | 20°C | 60°C |
| Acetic Acid | 100 | + | o |
| Acetone | 100 | + | +/o |
| Ammonia | Conc. | + | + |
| Ammonium chloride | | + | + |
| Amyl Alcohol | | + | + |
| Benzene | | +/o | o/- |
| Bleaching Solution | 12,5 Cl | o | - |
| Boric Acid | 100 | + | + |
| Brake Fluid | | + | + |
| Butyl Acetate | | + | o |
| Calcium Chloride | | + | + |
| Carbon disulphide | 100 | o | - |
| Carbon Tetrachloride | | o/- | - |
| Chlorine, gas | 100 | o | - |
| Chlorobenzene | 100 | o | - |
| Chloroform | | o/- | - |
| Citric Acid | 10 | + | + |
| Cresol | | + | + |
| Cyclohexanone | 100 | + | +/o |
| Cyclohexene | 100 | + | + |
| Diesel Fuel | | + | + |
| Ethyl acetate | 100 | o | +/o |
| Ethyl alcohol | 96 | + | + |
| Ethylene Chloride | 100 | +/o | |
| Formic Acid | 10 | + | + |
| Frost protection agent | | + | + |
| Fuel, aromatic free | | + | + |
| Glycerine | 100 | + | + |
| Glycol | 100 | + | + |
| Heating oil | | + | + |
| Heptane | 100 | - | - |
| Hydrochloric acid | 10 | + | + |
| Hydrochloric acid | Conc. | + | + |

| Agent | Conc % | Working Temp | |
|----------------------------|-------------|--------------|------|
| | | 20°C | 60°C |
| Hydrofluoric acid | 40 | + | o |
| Hydrogen peroxide | 10 | + | + |
| Hydrogen Sulphide | | + | +/o |
| Isopropyl Alcohol | 100 | + | + |
| Mercurochrome | | + | +/o |
| Methyl alcohol | 100 | + | + |
| Methyl ethyl ketone | 100 | + | - |
| Methylene chloride | 100 | o/- | - |
| Nitric acid | 10 | + | + |
| Nitric acid | 50 | o | o/- |
| Nitrobenzine | | + | +/o |
| Oxalic Acid | | + | + |
| Ozone, gas | ca. 0,5 ppm | +/o | - |
| Paraffin Oil | 100 | + | + |
| Perchlorethylene | | o | - |
| Petroleum | 100 | + | o |
| Petroleum, aromatic free | 100 | | |
| Phenol, aqu | ca.9 | + | + |
| Phosphoric Acid | 50 | + | + |
| Potassium hydroxide liquor | 50 | + | + |
| Propyl alcohol | | + | + |
| Pyridine | | + | +/o |
| Silicone oil | | + | + |
| Sodium carbonate, aqu | | + | + |
| Sodium chloride, aqu | | + | + |
| Sodium Hydroxide liquor | 60 | + | + |
| Sodium hydrogen sulphite | | + | + |
| Sodium nitrate, aqu | | + | + |
| Sodium thiosulfate | | + | + |
| Sulphuric Acid | 96 | o | - |
| Tetrahydrofuran | 100 | o/- | - |
| Toluene | 100 | o/- | - |
| Trichlorethylene | 100 | - | - |
| Xylene | | - | - |

Key:

| Resistant | Partly Resistant | Non-Resistant |
|-----------|------------------|---------------|
| + | o | - |

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

safety properties

Substance/preparation and Company detail

High Density Polyethylene

Oadby Plastics
68 Scudamore Road,
Braunstone Frith Industrial Estate,
Leicester,
LE3 1UA
0116 232 1010

Composition / Indications to components

Chemical characteristics: polymer of ethylene
CAS-number: not necessary

Possible dangers

Unknown

First-aid measures

General comment: medical aid is not necessary
First-aid measures: none
Routes of exposure: none
Symptoms / effects: none

Fire-fighting measures

Suitable fire-fighting appliance: water fog, foam, fire fighting powder, carbon dioxide
Hazard warning notice: not applicable

Measures in case of unintended release

Person-related measures: none
Environmental protection measures: not applicable
Cleaning equipment: not applicable
Unsuitable cleaning products: not applicable

Handling and storage

Handling: no special regulations must be observed
Storage: unlimited good storage property

Limitation of exposition

Special design of techn. processing facilities: not required
Tolerance levels: none
Exposure measurement procedures: none
Respiratory protection: not required
Eye protection: not required
Body protection: not required

Physical and chemical characteristics

Phenotype

Phenotype / form: semi-finished product, solid state
Colour: natural
Smell: not applicable

Change of state

Crystalline melting range: 126-130 °C
Flash point: not applicable

Other remarks

Density: 0.947 g/cm³

safety properties

Stability and reactivity

Thermal decomposition: above appr. 300 °C

Dangerous decomposition products:

Besides carbon black also carbon dioxide and water as well as low molecular parts of PE will develop during the burning process. In case of incomplete burning also carbon monoxide may arise.

Use of stabilisers: none

Exothermic reactions: none

Notices regarding state of aggregation: none

Conditions to be avoided: none

Substances/media to be avoided: none

Toxic information

During several years of usage no effects being harmful for the health were observed.

Ecological information

No biodegradation, no solubility in water, no effects being harmful to the environment must be expected.

Mobility: not applicable

Accumulation: not applicable

Eco-toxicity: not applicable

Waste-disposal information

Can be recycled or can be disposed of together with household rubbish (acc. To local regulations).

Waste key for the unused product: EAK-Code 120 105

Waste name: waste of Polyolefine.

Transport information

No dangerous product in respect to / according to transport regulations

Notice/symbol transport containers: none

Special marking for containers: none

Regulations

Marking according to GefStoffV/EG: no obligation for marking

Water danger class: class 0 (self classification)

Domestic requirements to be observed: none

Further information

The information is based on our current knowledge. They are meant to describe our products in respect to safety requirements. They do not represent any guarantee of the described product in the sense of the legal guarantee regulations.