



Product information

Product full identity:

High Molecular Weight Polyethylene

PE500 is a versatile, food compliant material available in a wide range of colours. It's unique properties include a low coefficient of friction, high impact strength and abrasion resistance. PE500 has a wide operating temperature of -80°C to +80°C.

Properties

- » Economical alternative to PE 1000
- » Excellent wear and abrasion resistance
- » Good noise dampening properties
- » Food compliant

Applications

- » Cutting boards
- » Chutes
- » Liners
- » Food processing
- » Chain parts

This document contains

- » Technical Datasheet (Page 2)
- » Chemical Datasheet (Page 3)
- » Safety Datasheet (Pages 4-7)

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

Technical Properties

| Physical Properties | Test | Unit | Result |
|--|-------------|-------------------|------------------------|
| 1. Specific gravity | ISO 1183-1 | g/cm ³ | 0.96 |
| 2. Water absorption till saturation 23°C | - | % | 0.01 |
| 3. Maximum service temp. Upper temp limit - Short Term (no stronger mechanical stress involved) | - | °C | 120 |
| Long Term | - | °C | 80 |
| 5. Lower temp limit | - | °C | -80 |
| Mechanical Properties | Test | Unit | Result |
| 1. Tensile strength at yield | ISO 527 | MPa | >28 |
| 2. Elongation at yield | ISO 527 | % | 8 |
| 3. Abrasion (sand slurry test) | ISO 5527 | % | >200 |
| 4. Elongation | ISO 527 | % | 7650 |
| 5. Impact strength | ISO 179 | kJ/m ² | no break |
| 6. Notch impact strength | ISO 179 | kJ/m ² | 725 |
| 7. Ball indentation | ISO 2039-1 | MPa | 50 |
| 8. Shore-D | DIN 53505 | - | 63/65 |
| 9. Modulus of elasticity | ISO 527 | MPa | 1100 |
| Thermal Properties | Test Method | Unit | Result |
| 1. Vicat-softening point | ISO 306 | °C | 80 |
| 2. Coefficient of linear thermal expansion | ISO 11359 | %-1 | 1.5-2 10 ⁻⁴ |
| 3. Thermal conductivity | DIN 52612 | W/(m*K) | >0.4 |
| Electrical Properties | Test Method | Unit | Result |
| 1. Surface resistivity | IEC 6093 | Ω | 10 ¹⁴ |
| 2. Dielectric strength | IEC 60243 | kV/mm | 150 |
| Additional Data | Test Method | Unit | Result |
| 1. Bondability | - | - | - |
| 2. Food compliance | FDA | - | + |
| 3. Flammability | UL 94 | - | HB |

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

Key:

| Yes | Limited | No data |
|-----|---------|---------|
| + | 0 | - |

Chemical Properties

| Agent | Conc % | Working Temp | | Agent | Conc % | Working Temp | |
|------------------------|---------|--------------|------|----------------------------|-------------|--------------|---|
| | | 20°C | 60°C | | | | |
| Acetic Acid | 100 | o | o | Hydrofluoric acid | 40 | + | o |
| Acetone | 100 | + | o | Hydrogen peroxide | 10 | + | + |
| Ammonia | Conc. | + | + | Hydrogen Sulphide | | + | + |
| Ammonium chloride | | + | + | Isopropyl Alcohol | 100 | + | + |
| Amyl Alcohol | | + | o | Mercurochrome | | + | |
| Benzene | | o | - | Methyl alcohol | 100 | + | + |
| Bleaching Solution | 12,5 Cl | + | - | Methyl ethyl ketone | 100 | + | - |
| Boric Acid | 100 | + | + | Methylene chloride | 100 | o | o |
| Brake Fluid | | + | + | Nitric acid | 10 | + | o |
| Butyl Acetate | | + | - | Nitric acid | 50 | o | - |
| Calcium Chloride | | + | + | Nitrobenzine | | + | o |
| Carbon disulphide | 100 | o | - | Oxalic Acid | | + | + |
| Carbon Tetrachloride | | - | - | Ozone, gas | ca. 0,5 ppm | + | - |
| Chlorine, gas | 100 | - | - | Paraffin Oil | 100 | + | o |
| Chlorobenzene | 100 | o | - | Perchlorethylene | | o | - |
| Chloroform | | - | - | Petroleum | 100 | o | o |
| Citric Acid | 10 | + | + | Petroleum, aromatic free | 100 | + | o |
| Cresol | | + | o | Phenol, aqu | ca.9 | + | + |
| Cyclohexanone | 100 | + | o | Phosphoric Acid | 50 | + | + |
| Cyclohexene | 100 | - | - | Potassium hydroxide liquor | 50 | + | + |
| Diesel Fuel | | + | o | Propyl alcohol | | + | + |
| Ethyl acetate | 100 | o | - | Pyridine | | o | o |
| Ethyl alcohol | 96 | + | + | Silicone oil | | + | + |
| Ethylene Chloride | 100 | o | o | Sodium carbonate, aqu | | + | + |
| Formic Acid | 10 | + | + | Sodium chloride, aqu | | + | + |
| Frost protection agent | | + | + | Sodium Hydroxide liquor | 60 | + | + |
| Fuel, aromatic free | | o | o | Sodium hydrogen sulphite | | + | + |
| Glycerine | 100 | + | + | Sodium nitrate, aqu | | + | + |
| Glycol | 100 | + | + | Sodium thiosulfate | | + | + |
| Heating oil | | + | o | Sulphuric Acid | 96 | o | - |
| Heptane | 100 | + | - | Tetrahydrofuran | 100 | o | - |
| Hydrochloric acid | 10 | + | + | Toluene | 100 | o | - |
| Hydrochloric acid | conc. | + | + | Trichlorethylene | 100 | o | - |
| | | | | Xylene | | o | - |

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Key:

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

Safety Properties

Substance / preparation and company detail

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

Composition / indications to components

Chemical characterization

Description:

Polyethylene, high density
CAS 9002-88-4

Dangerous components: Void

Additional information: Can contain additives.

Possible dangers

Information pertaining to particular dangers for man and environment

The molten product adheres to the skin and causes burns.

Spilled material may present a slipping hazard.

Classification system

This product is, according to EEC directives 1999/45, 67/548,76/769 and following amendments, not classified as hazardous.

First-aid measures

General information

At room temperature the product is neither an irritant nor gives off hazardous vapours.

The measures listed below apply to critical situations (Fire, incorrect process conditions).

After inhalation: In case of excessive inhalation of fumes move the person to fresh air. Call for medical help.

After skin contact: After contact with the molten product, cool rapidly with cold water.

Do not pull solidified product away from the skin.

Seek immediate medical advice.

After eye contact: Rinse opened eye for several minutes under running water. If irritation persists, seek medical advice.

After swallowing: No specific measures have to be taken if the product is swallowed.

First-fighting measures

Suitable extinguishing agents

Water haze

Foam

Chemical powder

For safety reasons unsuitable extinguishing agents Water jet.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire it can release :

water (H₂O), carbon dioxide (CO₂), and when lacking oxygen (O₂), carbon monoxide (CO)

The products of the burning are dangerous.

Protective equipment:

Use a mask with universal filter.

Use self-contained breathing apparatus within confined rooms.

Additional information: Heat value: 12,2 kWh/kg

Safety Properties

Measures in case of unintended release

Person-related safety precautions:

Particular danger of slipping on leaked/spilled product.
See point 8

Measures for environmental protection:

No special measures required.
See points 12 and 13.

Measures for cleaning/collecting:

Recycle product or dispose properly.

Handling and storage

Handling**Information for safe handling:**

No special requirements necessary, if handled at room temperature.

Avoid spilling the product, as this might cause falls.

When bringing the material to processing temperatures gases might develop, forming:

Ethylene and alkenes of higher molecular weight.

traces of formaldehyde and acrylaldehyde

traces of acids (Formic acid, acetic acid)

Provide appropriate ventilation for such processing conditions.

Take precautionary measures against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

Prevent formation of dust.

Storage**Requirements to be met by storerooms and containers:**

Take precautionary measures to prevent the formation of static electricity.

Ground equipment electrically.

Open flames prohibited.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:

Protect from heat and direct sunlight.

Store under dry conditions.

Do not stack up the octabins.

Specific applications For safe stacking follow the storage recommendations specific for this product

Limitation of exposition

Components with limit values that require monitoring at the workplace: Not required.

- Additional exposure limit values for possible processing dangers:

107-02-8 acrylaldehyde

WEL () Short-term value: 0.7 mg/m³, 0.3 ppm

Long-term value: 0.23 mg/m³, 0.1 ppm

50-00-0 formaldehyde

WEL () Short-term value: 2.5 mg/m³, 2 ppm

Long-term value: 2.5 mg/m³, 2 ppm

64-18-6 formic acid

WEL () Long-term value: 9.6 mg/m³, 5 ppm

Additional information: Void

Personal protective equipment

General protective and hygienic measures: Do not eat, drink or smoke while working.

Breathing equipment: Use breathing protection in case of insufficient ventilation.

Protection of hands: Heat resistant gloves

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Not required.

Safety Properties

Physical and chemical characteristics

General Information

Form: Pellets

Colour: Neutral

various colours

Odour: Nearly odourless

Change in condition

Melting point/Melting range: 50-140°C

Boiling point/Boiling range: Not applicable

Flash point: Not applicable (see attachment to guideline 92/69/EEC, A.9) Ignition temperature: > 360°C

Danger of explosion: Product is not explosive.

Density at 20°C 0.9-0.97 g/cm³

Solubility in / Miscibility with water: Insoluble

Additional information: Soluble in boiling, aromatic chlorinated solvents.

Stability and reactivity

Thermal decomposition / conditions to be avoided:

The product is stable when handled and stored under normal conditions.

Decomposes over 360 °C.

Dangerous reactions: No dangerous reactions known

Dangerous products of decomposition: No hazardous decomposition products known at room temperature.

Toxic information

Acute toxicity:

Primary irritant effect:

On the skin: No irritant effect.

On the eye: No irritant effect.

Sensitization: No sensitizing effect known.

Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Ecological information

Other information: The product is not biodegradable.

Behaviour in environmental systems:

Mobility and bioaccumulation potential:

Floats on water.

There is no bioaccumulation.

General notes:

The product is not toxic, small particles can have physical effects on water and soil organisms.

Waste-disposal information

Reuse or recycle if possible.

Disposal through controlled incineration or authorised waste dump.

European waste catalogue 070213

Unclean packaging:

Recommendation: Disposal must be done according to official regulations.

Transport information

According to national and international guidelines, which regulate the road, rail, air and sea transport, this product is classified as not dangerous.

Safety Properties

Regulations

Not classified

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.