



Product information

Product full identity:

Polyoxymethethylene Copolymer

Extruded Acetal C offers high stiffness, tensile strength and surface hardness. Acetal C is more resistant against hydrolysis, strong alkalis and thermal-oxidative degradation than Acetal H. This material is food compliant.

Properties

- » Better to machine than all Nylons
- » 10% better properties than Homopolymer, in hot waters
- » Good UV resistance in black
- » Low absorption and dimensional stability
- » Food Compliant

Applications

- » Seals
- » Gears
- » Marine
- » Insulators
- » Medical instrument handles
- » Steam cleaning
- » Bearings
- » Impellers

This document contains

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For any further information regarding food, fire and water certificates then please contact the sales team on 0114 256 0889

Technical Properties

| Physical Properties | Test | Unit | Result |
|--|---------------|-----------------------------------|------------------|
| 1. Specific gravity | ISO 1183 | g/cm ³ | 1.41 |
| 2. Water absorption | ISO 62 | % | 0.8 |
| 3. Maximum service temp. Upper temp limit - Short Term (no stronger mechanical stress involved) | - | °C | 140 |
| | - | °C | 105 |
| 5. Lower temp limit | - | °C | -40 |
| Mechanical Properties | Test | Unit | Result |
| 1. Tensile stress at yield | ISO 527-2 | MPa | 63 |
| 2. Elongation at yield | ISO 527-2 | % | - |
| 3. Tensile strength at break | ISO 527-2 | MPa | 63 |
| 4. Elongation at break | ISO 527-2 | % | 31 |
| 5. Impact strength | ISO 179-1/1eU | kJ/m ² | 220 |
| 6. Notch impact strength | ISO 179-1/1eA | kJ/m ² | 8 |
| 7. Ball indentation / Rockwell hardness | ISO 2039-1/-2 | MPa | 140 / M84 |
| 8. Shore-D | - | - | - |
| 9. Flexural modulus of elasticity | ISO 178 | MPa | 2500 |
| 10. Tensile modulus of elasticity | ISO 527 | MPa | 2600 |
| Thermal Properties | Test Method | Unit | Result |
| 1. Vicat-softening point VST/B/50 | ISO 306 | °C | 150 |
| 2. Heat deflection temperature HDT/A | ISO 75-2 | °C | 96 |
| 3. Coefficient of linear thermal expansion | ISO 11359 | k ⁻¹ *10 ⁻⁴ | 1.1 |
| 4. Thermal conductivity at 23 °C | DIN 52612 | W/(m*K) | 0.31 |
| Electrical Properties | Test Method | Unit | Result |
| 1. Volume resistivity | VDE 0303 | Ω x m | - |
| 2. Surface resistivity | IEC 6093 | Ω | 10 ¹³ |
| 3. Dielectric constant at 1MHz | IEC 60250 | - | 3.8 |
| 4. Dielectric dissipation factor at 1 MHz | IEC 60250 | 10 ⁶ Hz | 0.008 |
| 5. Electrical strength | IEC 60243-1 | kV/mm | 20 |
| 6. Comparative tracking index (CTI) | IEC 60112 | - | 600 |
| 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 | - | Hydrofluoric acid | 40 | - | |
| Acetone | 100 | + | o | Hydrogen peroxide | 10 | + | - |
| Ammonia | Conc. | + | + | Hydrogen Sulphide | | + | |
| Ammonium chloride | | + | o | Isopropyl Alcohol | 100 | + | + |
| Amyl Alcohol | | +/o | | Mercurochrome | | - | |
| Benzene | | + | o | Methyl alcohol | 100 | + | + |
| Bleaching Solution | 12,5 Cl | o | - | Methyl ethyl ketone | 100 | o | o |
| Boric Acid | 100 | - | - | Methylene chloride | 100 | - | - |
| Brake Fluid | | o/- | | Nitric acid | 50 | - | - |
| Butyl Acetate | | + | o | Nitrobenzine | | o | |
| Calcium Chloride | | + | + | Oxalic Acid | | - | |
| Carbon disulphide | 100 | + | + | Ozone, gas | ca. 0,5 ppm | - | - |
| Carbon Tetrachloride | | + | o | Paraffin Oil | 100 | + | + |
| Chlorine, gas | 100 | | | Perchloroethylene | | + | o |
| Chlorobenzene | 100 | o | o | Petroleum | 100 | + | |
| Chloroform | | | - | Petroleum, aromatic free | 100 | + | + |
| Citric Acid | 10 | o | - | Phenol, aqu | ca.9 | - | - |
| Cresol | | | | Phosphoric Acid | 50 | - | - |
| Cyclohexanone | 100 | + | | Potassium hydroxide liquor | 50 | o | |
| Cyclohexene | 100 | + | | Propyl alcohol | | | |
| Diesel Fuel | | + | + | Pyridine | | | |
| Ethyl acetate | 100 | + | o | Silicone oil | | + | + |
| Ethyl alcohol | 96 | | | Sodium carbonate, aqu | | + | + |
| Ethylene Chloride | 100 | + | - | Sodium chloride, aqu | | + | + |
| Formic Acid | 10 | + | | Sodium Hydroxide liquor | 15 | + | o |
| Frost protection agent | Petrol | + | + | Sodium Hydroxide liquor | 60 | o | |
| Fuel, aromatic free | | + | o | Sodium hydrogen sulphite | | - | - |
| Glycerine | 100 | + | + | Sodium nitrate, aqu | | + | + |
| Glycol | 100 | + | + | Sodium thiosulfate | | | |
| Heating oil | | - | - | Sulphuric Acid | 96 | - | - |
| Heptane | 100 | - | - | Tetrahydrofuran | 100 | o | o |
| Hydrochloric acid | 100 | - | - | Toluene | 100 | + | + |
| Hydrochloric acid | conc. | - | - | Trichloroethylene | 100 | - | - |
| | | | | Xylene | | - | - |

Safety Properties

Substance / preparation and company detail

Acetal MD
Direct Plastics Limited
Rother Valley Way,
Holbrook,
Sheffield,
S20 3RW
0114 2560889

Composition / indications to components

Chemical characterization : Polyoxymethylene-Copolymer (POM-C)

Hazardous substances : Product contains no hazardous ingredients liable to be disclosed.

Possible dangers

Classification : Not classified

Physical/ chemical hazards : Flammable

Health risks : Dust can cause mechanical irritation.

Hazards for the environment: Based on our information, there is no danger to the environment.

The product is according to Directive 1999/45/EC and its annexes are not classified as dangerous.

First-aid measures

General information : The product is being classified as non-toxic.

In case of inhalation : In case the plastic burns and combustion gases are inhaled, remove person to fresh air and keep warm and get medical help if necessary.

In case of skin contact : Burns caused by molten material on skin need to be rapidly cooled down with water; do not attempt removal of plastic without medical assistance. If irritation develops, seek medical attention.

In case of eye contact : Flush eyes well with copious quantities of water. Seek medical attention, if irritation persists.

In case of ingestion : The product is non-toxic; no first aid procedures are required.

Fire-fighting measures

Suitable extinguishing media : Water, foam, gaseous and dry extinguishing media

Particular endangerments by : Hazardous combustion products may emerge, apart from harmless

Fire fighting and hazardous Water (H₂O); carbon dioxide (CO₂), carbon monoxide (CO) and combustion products oxygen how hydrogen cyanide (HCN). Formation of further decomposition and oxidation products depends upon the fire conditions. Under special fire conditions traces of other toxic substances are possible. Fire fighting: Approved pressure demand breathing apparatus and protective clothing should be used for all fires. Additional Information: Residues after the fire, after appropriate rules dispose.

Marking and transport information

Personal precautions : N/A

Environmental precaution : N/A

Methods for cleaning up : Mechanical removal

Handling and storage

Advice on safe handling: During machining of the stock shapes, evacuate swarf to prevent slipping or tripping.

Storage: Store inert product dry and cool. Keep storage and working areas sufficiently ventilated. Keep away from source of flame, heat and ignition. Due to the risk of collapsing, do not stack more than 2 pallets on to of each other. Pallets should not stack on to of each other along aisles.

Safety Properties

Limitation of exposition

Ingredients with : CAS-Nr. 50-00-0 (Formaldehyde)

Occupational exposure Occupational exposure limit (TRGS 900) 0,5 ml/m³ 0,62 mg/m³

Limits to be monitored High limit / Exceedance factor = 1

Limit values can be fractionally under run by adequate ventilation

The MAK-Wert for Formaldehyde (TRGS 900) was abrogated with the amendment in January 2006. This information only serves as a benchmark.

General protection : Keep the workplace sufficiently ventilated

Hygiene measures : Eating and drinking are not allowed.

Continuous supply of fresh air to the workplace together with removal of processing fumes through exhaust systems is recommended. Avoid breathing in gaseous degradation products and dust that may result by material overheating.

Hand protection : Safety gloves in case of contact with warm material

Eye protection : Safety goggles or shield during machining

Body protection : Working clothes

Respiratory protection : Adequate ventilation at workplace is required

Physical and chemical characteristics

Aggregate : solid

Colour : product-specific

Odour : slight, product specific

Safety related facts

Boiling point : N/A

Melting point : 160 - 175 °C (DIN/EN/ISO 3146)

Corrosion temperature : N/A

Flash point : N/A

Self ignition temperature : 320 - 340 °C (ASTM D1929)

Explosion hazard or limit : non explosive

Oxidizing characteristics : None

Density (20 °C) : 1.41 g/cm³ (ISO 1183)

Solubility (in Water 20 °C) : insoluble

Viscosity : N/A

Additional Information : None

Stability and reactivity

Conditions to avoid : Temperatures above melting point

Material to avoid : Strong oxidant

Hazardous decomposition: Formaldehyde CAS-Nr. 50-00-0

Products : Carbon monoxide CAS-Nr. 630-08-0

Do not machine together with PVC or other polymers which contain halogenated flame retardants.

Toxic information

Toxicology : Based on our experience and information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Primary Irritation on skin : N/A

Primary Irritation on eyes : N/A

Sensitization : not known

Practical Tests : N/A

Additional information : N/A

Ecological information

The material does not harm the environment but is not biologically degradable.

Safety Properties

Waste-disposal information

The product must be disposed in accordance with the local authorities.

Transport information

The product must be disposed in accordance with the local authorities.

Regulations

The product does not require a hazard warning label in accordance with EC directives.

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.