



LICHARZ

HIGH PERFORMANCE PLASTICS

The competitive edge through engineered components made of plastic

Polyvinylidene fluoride is a high crystalline thermoplastic with good mechanical, thermal and electrical properties. As a fluoroplastic, polyvinylidene fluoride has excellent chemical resistance without the disadvantages of low mechanical values and difficult workability of other fluoroplastics. The polyvinylidene fluoride finished products that we offer consist of high density polyvinylidene fluoride types produced by extrusion or moulding processes.

Main properties

- Low density in comparison to other fluoroplastics
- Good mechanical stability compared to other fluoroplastics
- Can be used continuously at high temperatures (+140 °C in air)
- Absorbs practically no water
- Good dimensional stability
- High chemical resistance
- Good hydrolytic stability
- Weather resistant
- Radiation resistant
- Good electric insulator
- Fire resistant (UL 94 V 0)
- Physiologically safe
- High abrasion resistance

Colours

natural (white to ivory)

Sliding properties

PVDF has good sliding properties, is resistant to wear and is very suitable for chemically stressed sliding applications that are also subjected to thermal influences. However, in component design, the relatively high coefficient of thermal expansion should be considered.

Resistance to radiation/Weathering effects

PVDF is resistant to both β -rays and γ -rays as well as UV rays in connection with atmospheric oxygen. Hence PVDF is ideal for use in the pharmaceutical and nuclear industries and under weathering effects.

Chemical resistance

PVDF is resistant to acids and alkaline solutions, salts and salt solutions, aliphatic and aromatic hydrocarbons, alcohols and aromatics. PVDF is not resistant to ketones, amines, fuming sulphuric acid, nitric acid or to several hot alkalis (concentration related). Dimethyl formamide and dimethyl acetamide dissolve PVDF.

Behaviour in fire

Even without additives, PVDF is rated in the highest category as fire resistant. When the source of ignition is removed, PVDF extinguishes itself. At 78%, the oxygen index (= the concentration of oxygen required for combustion) is very high compared to other plastics.

Areas of use

- Chemical and petrochemical industries
- Pharmaceutical industry
- Textile industry
- Paper industry
- Food industry

Applications

- Pump parts
- Fittings and fitting components
- Valves and valve components
- Seals
- Friction bearings
- Component parts in plant/apparatus engineering

Machining

In addition to its good welding suitability, PVDF can also be machined on machine tools. With the respective surface treatment, PVDF can be bonded with a special solvent adhesive. Fluoropolymers degrade at temperatures above approx. 360 °C and form highly aggressive and toxic hydrofluoric acid. As polymer dust can form when the material is being machined, smoking should not be permitted at the workplace.