KYNAR® MED

TECHNICAL DATA SHEET

# KYNAR® 720 MED

## FLUORINATED HOMOPOLYMER PELLET

KYNAR® resins are fluorinated thermoplastic homopolymers.
Outstanding characteristics: chemical resistance, resistance to UV, high barrier properties, high purity, good mechanical and thermo-mechanical properties, resistant to gamma, steam and ETO sterilization.
KYNAR® 720 MED resin is a standard grade of pellets for extrusion and injection molding. This product is compliant with the EU positive list. Upon request, letters regarding USP Class VI and ISO10993 part 4 and 5 compliance can be provided.

### TYPE

PVDF

### MAIN APPLICATIONS

- Medical
- Pharmaceutical

### DELIVERY FORM

- Pellets

### TRANSFORMATION PROCESSES

- Injection Molding

## RHEOLOGICAL PROPERTIES

| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Melt viscosity, 230°C (446°F) at 100 s-1 | 4 - 8 | kPo | ASTM D3835 |
| Shrinkage, Normal (t+24h) | 2 | % | ISO 294-4 |
| Shrinkage, Parallel (t+24h) | 2 | % | ISO 294-4 |
| Melt flow index (MFR), 230°C / 5 kg (446°F / 11 lb) | 19 - 35 | g/10min | ASTM D1238 |
| Melt volume flow rate (MVR), 230°C / 5 kg (446°F / 11 lb) | 11 | $cm^3$/10min | ISO 1133 |

## MECHANICAL PROPERTIES

| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Yield stress, 23°C (73°F) | 44.8 - 55.2 | MPa | ASTM D638 |
| Stress at break, 23°C (73°F) | 34.5 - 55.2 | MPa | ASTM D638 |
| Compression strength, 23°C (73°F) | 68.9 - 103 | MPa | ASTM D695 |
| Izod impact unnotched strength, 23°C (73°F) | 1070-4270 | J/m | ASTM D256 |
| Izod impact notched strength, 23°C (73°F) | 80-214 | J/m | ASTM D256 |
| Charpy unnotched impact strength, 23°C (73°F) | 192 | kJ/m2 | ISO 179 1eU |
| Charpy unnotched impact strength, -30°C (-22°F) | 208 | kJ/m2 | ISO 179 1eU |
| Charpy notched impact strength, 23°C (73°F) | 8 | kJ/m2 | ISO 179 1eA |
| Charpy notched impact strength, -30°C (-22°F) | 5 | kJ/m2 | ISO 179 1eA |
| Hardness, shore D | 76 - 80 | | ASTM D2240 |
| Nominal strain at break, 23°C (73°F) | >50 | % | ISO 527-1/-2 |
| Yield strain, 23°C (73°F) | 9 | % | ISO 527-1/-2 |
| Flexural modulus, 23°C (73°F) | 1380 - 2310 | MPa | ASTM D790 |
| Tensile modulus, 23°C (73°F) | 2300 | MPa | ASTM D638 |

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| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Coefficient of friction dynamic vs steel, 23°C (73°F) | 0.14 | | ASTM D1895 |
| Coefficient of friction static vs steel, 23°C (73°F) | 0.2 | | ASTM D1894 |
| Abrasion resistance, Wheel CS 17, load 1 kg, 1000 cycles | 5 - 9 | mg | ASTM G195-13A |

## THERMAL PROPERTIES

| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Glass transition temperature, 10°C/min | -40 | °C | ISO 11357-1/-2 |
| Vicat softening temperature, 50N at 50°C/h | 140 | °C | ISO 306 |
| Limiting oxygen index (LOI) | 44 | % | ASTM D2863 |
| Yellow card available | yes | | |
| Coefficient of linear thermal expansion, 23°C (73°F) | 119 - 144 | 10E-6 / °K | ASTM D696 |
| Specific heat temperature, 23°C (73°F) | 665 - 958 | | ISO 11357-1/-2 |
| Heat deflection temperature, 0.45 MPa | 130 | °C | ISO 75-1/-2 |
| Heat deflection temperature, 1.8 MPa | 110 | °C | ISO 75-1/-2 |
| Heat deflection temperature, 1.8 MPa, 138°C/h | 105 - 115 | °C | ASTM D648 |
| Heat deflection temperature, 0.45 MPa, 138°C/h | 125-140 | °C | ASTM D648 |
| Thermal conductivity | 0.17 - 0.19 | W/m-K | ASTM D433 |
| Melting temperature, 10°C/min | 168 | °C | ISO 11357-1/-3 |

## ELECTRICAL PROPERTIES

| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Dielectric constant, 1kHz | 4.5 - 9.5 | | ASTM D150 |
| Dielectric strength, 23°C (73,4°F) | 1.7 | kV/mm | ASTM D149 |
| Relative permittivity, 100Hz | 9 | | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 6 | | IEC 62631-2-1 |
| Relative thermal index | 150 | | |
| Dissipation factor, 100Hz | 350 | E-4 | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 2060 | E-4 | IEC 62631-2-1 |
| Dissipation factor | 0.01 - 0.21 | | ASTM D150 |

## OTHER PROPERTIES

| PROPERTIES | TYPICAL VALUE | UNIT | TEST STANDARD |
|---|---|---|---|
| Water absorption, Saturated in water at 23°C (73°F) | 0.03 | % | ISO 62 |
| Density, 23°C (73°F) | 1.77 - 1.79 | g/cm³ | ISO 1183-1 |

## PROCESSING CONDITIONS:

- Typical melt temperature (Min / Recommended / Max) - Injection Molding: 180°C / 210°C / 240°C (355°F / 410°F / 465°F)
- Typical mold temperature - Injection molding: 20-80°C (70-175°F)

## SPECIAL CHARACTERISTICS

- Flame & smoke

# KYNAR® 720 MED

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