

TECHNICAL DATA SHEET

KYNAR® 461 POWDER

FLUORINATED HOMOPOLYMER POWDER

KYNAR® resins are fluorinated thermoplastic homopolymers.

Outstanding characteristics: chemical resistance, imperviousness to UV, high barrier properties, high purity, good mechanical and thermo-mechanical properties.

KYNAR® 461 resin is a standard grade of powder for extrusion of tubes, cables and plaques, compression and transfer molding.

DESIGNATION

PVDF

DELIVERY FORM

• Powder

RHEOLOGICAL PROPERTIES

| 속성 | 값 | 테스트 표준 |
|--|----------------------------|------------|
| Melt volume flow rate (MVR), 230°C / 21.6 kg (445°F / 47.6 lb) | 5.6 cm ³ /10min | ISO 1133 |
| Melt flow index (MFR), 230°C / 21.6 kg (445°F / 47.6 lb) | 6-14 g/10min | ASTM D1238 |
| Shrinkage, Normal (t+24h) | 2 % | ISO 294-4 |
| Shrinkage, Parallel (t+24h) | 2 % | ISO 294-4 |
| Melt viscosity, 230°C (445°F) at 100 s-1 | 23.5 - 29.5 kPo | ASTM D3835 |
| Melt flow index (MFR), 235°C / 5 kg (455°F / 11 lb) | 6 - 14 g/10min | ASTM D1238 |

MECHANICAL PROPERTIES

| 속성 | 값 | 테스트 표준 |
|--|--------------------------------|---------------|
| Tensile modulus, 23°C (73°F) | 1380 MPa | ASTM D638 |
| Tensile modulus, 23°C (73°F) (slksölk) | 1030-1380 MPa | ASTM D638 |
| Yield stress, 23°C (73°F) | 34.5 - 51.7 MPa | ASTM D638 |
| Yield strain, 23°C (73°F), 50 mm/min | 13 % | ISO 527-1/-2 |
| Stress at break, 23°C (73°F) | 31 - 48.3 MPa | ASTM D638 |
| Strain at break, 23°C (73°F) | 10-15 % | ASTM D638 |
| Nominal strain at break | W50 % | ISO 527-1/-2 |
| Flexural modulus, 23°C (73°F) | 1380 - 1790 MPa | ASTM D790 |
| Taber abrasion resistance, Wheel CS 17, load 1 kg, 1000 cycles | 7-9 | ASTM G195-13A |
| Hardness, Shore D | 75 - 80 | ASTM D2240 |
| Stress at 5% strain, 23°C (73°F) | 48.3-62.1 MPa | ASTM D790 |
| Compression strength, 23°C (73°F) | 55.2 - 68.9 MPa | ASTM D695 |
| Charpy notched impact strength (Z axis), 23°C (73°F) | 0.0961-0.214 kJ/m ² | ASTM D256 |

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| 속성 | 값 | 테스트 표준 |
|---|--------------------------------|----------------|
| Charpy unnotched impact strength, 23°C (73°F) | 0.801-2.14 kJ/m ² | ASTM D256 |
| Coefficient of friction dynamic vs steel, 23°C (73°F) | 0.17 | ASTM D1895 |
| Coefficient of friction static vs steel, 23°C (73°F) | 0.23 | ASTM D1894 |
| Izod impact unnotched strength, 23°C (73°F) | 0.801 - 2.14 kJ/m ² | ASTM D256 |
| Izod impact notched strength, 23°C (73°F) | 0.0961 - 0.214 J/m | ASTM D256 |
| Nominal strain at break, 23°C (73°F), 50 mm/min | >50 % | ISO 527-1/-2 |
| Abrasion resistance, Wheel CS 17, load 1 kg, 1000 cycles | 7 - 9 mg | ASTM G195-13A |
| 속성 | 값 | 테스트 표준 |
| Glass transition temperature, 10°C/min | -40 °C | ISO 11357-1/-2 |
| Heat deflection temperature, 1.8 MPa | 85 °C | ISO 75-1/-2 |
| Heat deflection temperature, 1.8 MPa | 85 °C | ISO 75-1/-2 |
| Oxygen index | 43 % | ISO 4589-1/-2 |
| Limiting oxygen index (LOI) | 44 % | ASTM D2863 |
| Specific heat temperature, 23°C (73°F) | 745 - 958 | ISO 11357-1/-2 |
| Coefficient of linear thermal expansion, 23°C (73°F) | 90 - 126 10E-6 / °K | ASTM D696 |
| Heat deflection temperature, 1.8 MPa, 138°C/h | 80 - 90 °C | ASTM D648 |
| Heat deflection temperature, 0.45 MPa, 138°C/h | 112-140 °C | ASTM D648 |
| Thermal conductivity | 0.17 - 0.19 W/m-K | ASTM D433 |
| Melting temperature, 10°C/min | 161 °C | ISO 11357-1/-3 |
| Thermal Degradation temperature, Under air at 10°C/min | 375 °C | ISO 11357-1/-2 |
| Thermal Degradation temperature, Under nitrogen at 10°C/min | 410 °C | ISO 11357-1/-2 |

THERMAL PROPERTIES ELECTRICAL PROPERTIES

| 속성 | 값 | 테스트 표준 |
|------------------------------------|--------------------------|---------------|
| Relative permittivity, 1MHz | 6.7 | IEC 60250 |
| Relative permittivity, 100Hz | 9 | IEC 60250 |
| Dielectric constant, 1kHz | 4.5 - 9.5 | ASTM D150 |
| Dissipation factor | 0.01 - 0.21 | ASTM D150 |
| Dissipation factor, 100Hz | 1300 E-4 | IEC 60250 |
| Volumic (transversal) resistivity | 2E12 ohm*m | IEC 62631-3-1 |
| Surface resistivity, 23°C (73,4°F) | 5.1E+11 - 5.3E+11 ohm/sq | ASTM D257 |
| Dielectric strength, 23°C (73,4°F) | 1.6 kV/mm | IEC 60243-1 |
| Dissipation factor, 1MHz | 700 E-4 | IEC 60250 |

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OTHER PROPERTIES

| 속성 | 값 | 테스트 표준 |
|---|-------------------------------|--------|
| Water absorption, Saturated in water at 23°C (73°F) | 0.04 % | ISO 62 |
| Apparent density | 1760 % | |
| Specific gravity, 23°C (73°F) | 1.75 - 1.77 g/cm ³ | |

SPECIAL CHARACTERISTICS

- Flame & smoke

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