

# KYNAR FLEX®

## TECHNICAL DATA SHEET

### KYNAR FLEX® 3120-50

#### FLUORINATED COPOLYMER PELLET

KYNAR FLEX® resins are fluorinated thermoplastic copolymers.  
KYNAR FLEX® 3120-15 resin has been specifically designed for use in wire and cable constructions which require a 150°C rating and improve flame and smoke resistance.  
KYNAR FLEX® 3120-15 resin is easily processed and has excellent physical, mechanical, thermal and flame resistant characteristics. Its low viscosity allows easy processing.

- Additional Characteristics:
- Excellent thermal stability
  - Excellent abrasion resistance
  - High Limiting Oxygen Index
  - Extremely low smoke emission characteristics

#### TYPE

PVDF

#### MAIN APPLICATIONS

- Plenum Conduit
- Plenum Cable

#### DELIVERY FORM

- Pellets

#### ADDITIVES

- Lubricants

#### RHEOLOGICAL PROPERTIES

| PROPERTIES                                                     | VALUE     | UNIT      | TEST STANDARD |
|----------------------------------------------------------------|-----------|-----------|---------------|
| Melt viscosity, 230°C (445°F) at 100 s-1                       | 20 - 26   | kPo       | ASTM D3835    |
| Melt flow index (MFR), 235°C / 5 kg (455°F / 11 lb)            | 2.5 - 7.5 | g/10min   | ASTM D1238    |
| Melt volume flow rate (MVR), 230°C / 12.5 kg (445°F / 27.5 lb) | 0.5       | cm³/10min | ISO 1133      |

#### MECHANICAL PROPERTIES

| PROPERTIES                                            | VALUE       | UNIT | TEST STANDARD |
|-------------------------------------------------------|-------------|------|---------------|
| Yield stress, 23°C (73°F)                             | 24.1 - 34.5 | MPa  | ASTM D638     |
| Yield strain, 23°C (73°F), 50 mm/min                  | 15          | %    | ISO 527-1/-2  |
| Stress at break, 23°C (73°F)                          | 34.5 - 48.3 | MPa  | ASTM D638     |
| Nominal strain at break, 23°C (73°F), 50 mm/min       | >50         | %    | ISO 527-1/-2  |
| Compression strength, 23°C (73°F)                     | 31 - 41.4   | MPa  | ASTM D695     |
| Izod impact unnotched strength, 23°C (73°F)           | No Break    |      | ASTM D256     |
| Izod impact notched strength, 23°C (73°F)             | No Break    |      | ASTM D256     |
| Charpy notched impact strength, 23°C (73°F)           | No Break    |      | ISO 179 1eA   |
| Hardness, Shore D                                     | 65 - 70     |      | ASTM D2240    |
| Flexural modulus, 23°C (73°F)                         | 621 - 827   | MPa  | ASTM D790     |
| Tensile modulus, 23°C (73°F)                          | 700         | MPa  | ASTM D638     |
| Coefficient of friction dynamic vs steel, 23°C (73°F) | 0.3         |      | ASTM D1895    |

# KYNAR FLEX® 3120-50

| PROPERTIES                                               | VALUE   | UNIT | TEST STANDARD |
|----------------------------------------------------------|---------|------|---------------|
| Coefficient of friction static vs steel, 23°C (73°F)     | 0.31    |      | ASTM D1894    |
| Abrasion resistance, Wheel CS 17, load 1 kg, 1000 cycles | 16 - 19 | mg   | ASTM G195-13A |

## THERMAL PROPERTIES

| PROPERTIES                                           | VALUE        | UNIT       | TEST STANDARD  |
|------------------------------------------------------|--------------|------------|----------------|
| Glass transition temperature, 10°C/min               | -40          | °C         | ISO 11357-1/-2 |
| Limiting oxygen index (LOI)                          | 42           | %          | ASTM D2863     |
| Yellow card available                                | yes          |            |                |
| Coefficient of linear thermal expansion, 23°C (73°F) | 126 - 185    | 10E-6 / °K | ASTM D696      |
| Specific heat temperature, 23°C (73°F)               | 745 - 958    |            | ISO 11357-1/-2 |
| Heat deflection temperature, 1.8 MPa                 | 50           | °C         | ISO 75-1/-2    |
| Heat deflection temperature, 1.8 MPa, 138°C/h        | 43.3 - 54.4  | °C         | ASTM D648      |
| Heat deflection temperature, 0.45 MPa, 138°C/h       | 54.4-76.7    | °C         | ASTM D648      |
| Thermal conductivity                                 | 0.144 - 0.18 | W/m-K      | ASTM D433      |
| Melting temperature, 10°C/min                        | 165          | °C         | ISO 11357-1/-3 |

## ELECTRICAL PROPERTIES

| PROPERTIES                         | VALUE             | UNIT   | TEST STANDARD |
|------------------------------------|-------------------|--------|---------------|
| Dielectric constant, 1kHz          | 3.2 - 10.2        |        | ASTM D150     |
| Surface resistivity, 23°C (73,4°F) | 5.3E+11 - 5.5E+11 | ohm/sq | ASTM D257     |
| Dielectric strength, 23°C (73,4°F) | 1.3 - 1.5         | kV/mm  | ASTM D149     |
| Relative thermal index             | 150               |        |               |
| Dissipation factor                 | 0.02 - 0.19       |        | ASTM D150     |

## OTHER PROPERTIES

| PROPERTIES                                          | VALUE       | UNIT  | TEST STANDARD |
|-----------------------------------------------------|-------------|-------|---------------|
| Specific gravity, 23°C (73°F)                       | 1.75 - 1.77 | g/cm³ |               |
| Water absorption, Saturated in water at 23°C (73°F) | 0.03        | %     | ISO 62        |

## PACKAGING

Available packaging:

- 1000 kg / 2205 lb rigid container
- 25 kg / 55 lb rigid container
- 500 kg big bag
- 680 kg / 1500 lb big bag
- 680 kg /1500 lb rigid container
- 750 kg / 1650 lb rigid containers

## SPECIAL CHARACTERISTICS

- Flame & smoke