

TECHNICAL DATA SHEET

KYNAR® 1000 HD

FLUORINATED HOMOPOLYMER PELLET

KYNAR® resins are fluorinated thermoplastic homopolymers. Outstanding characteristics:chemical resistance, imperviousness to UV, high barrier properties, high purity, good mechanical andThermo mechanical properties KYNAR® 1000 HD resin is a standard grade of granules for compression and transfer molding, for extrusion of thick walled parts: blocks, rods, plaques, tubes

TYPE

PVDF

MAIN APPLICATIONS

- Hi Purity
  - CPI - Distribution
  - Molding
  - Tubing
  - Plenum Pipe
  - CPI - Stock Shape

DELIVERY FORM

- Pellets

TRANSFORMATION PROCESSES

- Injection Molding

RHEOLOGICAL PROPERTIES

| PROPERTIES                                                | VALUE   | UNIT      | TEST STANDARD |
|-----------------------------------------------------------|---------|-----------|---------------|
| Melt viscosity, 230°C (445°F) at 100 s-1                  | 15 - 20 | kPo       | ASTM D3835    |
| Shrinkage, Normal (t+24h)                                 | 2.0     | %         | ISO 294-4     |
| Shrinkage, Parallel (t+24h)                               | 2.0     | %         | ISO 294-4     |
| Melt flow index (MFR), 235°C / 5 kg (455°F / 11 lb)       | 1 - 3   | g/10min   | ASTM D1238    |
| Melt volume flow rate (MVR), 230°C / 5 kg (446°F / 11 lb) | 1.1     | cm³/10min | ISO 1133      |

MECHANICAL PROPERTIES

| PROPERTIES                                      | VALUE       | UNIT  | TEST STANDARD |
|-------------------------------------------------|-------------|-------|---------------|
| Yield stress, 23°C (73°F)                       | 44.8 - 55.2 | MPa   | ISO 527-1/-2  |
| Yield strain, 23°C (73°F), 50 mm/min            | 9           | %     | ISO 527-1/-2  |
| Stress at break, 23°C (73°F)                    | 34.5 - 55.2 | 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)               | 68.9 - 103  | MPa   | ASTM D695     |
| Charpy unnotched impact strength, 23°C (73°F)   | No Break    |       | ISO 179 1eU   |
| Charpy unnotched impact strength, -30°C (-22°F) | No Break    |       | ISO 179 1eU   |
| Charpy notched impact strength, 23°C (73°F)     | 22          | 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    |
| Flexural modulus, 23°C (73°F)                   | 1450 - 2310 | MPa   | ISO 178       |
| Tensile modulus, 23°C (73°F), 1 mm/min          | 2000        | MPa   | ISO 527-1/-2  |

# KYNAR® 1000 HD

## THERMAL PROPERTIES

| PROPERTIES                                           | VALUE       | UNIT       | TEST STANDARD  |
|------------------------------------------------------|-------------|------------|----------------|
| Glass transition temperature, 10°C/min               | -40         | °C         | ISO 11357-1/-2 |
| Vicat softening temperature, 50N at 50°C/h           | 138         | °C         | ISO 306        |
| Limiting oxygen index (LOI)                          | 60          | %          | ASTM D2863     |
| Coefficient of linear thermal expansion, 23°C (73°F) | 11.9 - 14.4 | 10E-6 / °K | ASTM D696      |
| Specific heat temperature, 23°C (73°F)               | 745 - 958   |            | ISO 11357-1/-2 |
| Heat deflection temperature, 1.8 MPa                 | 104         | °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                        | 172         | °C         | ISO 11357-1/-3 |

## ELECTRICAL PROPERTIES

| PROPERTIES                   | VALUE | UNIT | TEST STANDARD |
|------------------------------|-------|------|---------------|
| Comparative tracking index   | 600   |      | IEC 60112     |
| Relative permittivity, 100Hz | 10.5  |      | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 7     |      | IEC 62631-2-1 |
| Relative thermal index       | 150   |      |               |
| Dissipation factor, 100Hz    | 270   | E-4  | IEC 62631-2-1 |
| Dissipation factor, 1MHz     | 2400  | E-4  | IEC 62631-2-1 |

## OTHER PROPERTIES

| PROPERTIES                                                 | VALUE       | UNIT              | TEST STANDARD |
|------------------------------------------------------------|-------------|-------------------|---------------|
| Moisture absorption, At equilibrium at 23°C (73°F) / 50%HR | 0.015       | %                 | ISO 62        |
| Specific gravity, 23°C (73°F)                              | 1.77 - 1.79 | g/cm <sup>3</sup> |               |
| 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 bags
- 25 kg / 55 lb rigid container
- 680 kg /1500 lb rigid container
- 800 kg / 1765 lb big bag

## SPECIAL CHARACTERISTICS

- Flame & smoke