

TECHNICAL DATA SHEET

KEPSTAN® 8002

POLYETHERKETONEKETONE PELLET OR FLAKE

KEPSTAN® is a high performance thermoplastic material, based on PolyEtherKetoneKetone (PEKK) highly stable chemical backbone. Its semi crystalline structure in solid state offers an outstanding combination of mechanical and thermal strength together with chemical and fire resistance.

The 8000 Series offers the highest glass transition temperature and the highest degree of crystallinity, leading to the best tensile and compression strengths among both KEPSTAN® copolymers family and PAEK resins.

KEPSTAN® 8000 Series includes a very low flow grade, KEPSTAN® 8001, a medium flow grade, KEPSTAN® 8002, and a high flow grade KEPSTAN® 8003, all unfilled pure PEKK resins designed to meet the requirements of a broad range of melt processing technologies, including among others extrusion of stock shapes, tubes, films, extrusion compression, compression molding, compounding, injection molding of thick or complex and thin-walled parts.

KEPSTAN® is available in pellet form and as well as in flake. Standard packaging includes 20 kg boxes for pellets and 40 kg drums for flakes.

TYPE

PEKK

MAIN APPLICATIONS

- Oil And Gas - Others
- Cable
- Compounding

DELIVERY FORM

- Flakes
- Pellets

TRANSFORMATION PROCESSES

- Extrusion - General
- Film Extrusion
- Injection Molding

RHEOLOGICAL PROPERTIES

| PROPERTIES                                                 | VALUE | UNIT      | TEST STANDARD |
|------------------------------------------------------------|-------|-----------|---------------|
| Melt volume flow rate (MVR), 380°C / 1 kg (716°F / 2.2 lb) | 6     | cm³/10min | ISO 1133      |

MECHANICAL PROPERTIES

| PROPERTIES                                           | VALUE      | UNIT  | TEST STANDARD |
|------------------------------------------------------|------------|-------|---------------|
| Tensile modulus, 23°C (73°F), 1 mm/min(A12)          | 3800       | MPa   | ISO 527-1/-2  |
| Yield stress, 23°C (73°F), 25 mm/min(A12)            | 116        | MPa   | ISO 527-1/-2  |
| Yield strain, 23°C (73°F), 25 mm/min(A12)            | 5.2        | %     | ISO 527-1/-2  |
| Nominal strain at break, 23°C (73°F), 25 mm/min(A12) | 20         | %     | ISO 527-1/-2  |
| Yield stress, 125°C (255°F), 25 mm/min               | 63         | MPa   | ISO 527-1/-2  |
| Compression modulus, 23°C (73°F), 1 mm/min           | 3800       | MPa   | ISO 604       |
| Compression strength(23°C (73°F), 5mm/min)           | 152        | MPa   | ISO 604       |
| Flexural modulus, 23°C (73°F)                        | 3900       | MPa   | ISO 178       |
| Flexural strength, 23°C (73°F)                       | 180        | MPa   | ISO 178       |
| Charpy unnotched impact strength, 23°C (73°F)        | 10% B @ 87 |       | ISO 179 1eU   |
| Charpy unnotched impact strength, -30°C (-22°F)      | 30% B @ 86 |       | ISO 179 1eU   |
| Charpy notched impact strength, 23°C (73°F)          | 6          | kJ/m2 | ISO 179 1eA   |

# KEPSTAN® 8002

| PROPERTIES                                                                      | VALUE | UNIT  | TEST STANDARD |
|---------------------------------------------------------------------------------|-------|-------|---------------|
| Charpy notched impact strength, -30°C (-22°F)                                   | 5.5   | kJ/m2 | ISO 179 1eA   |
| Nominal strain at break, 125°C (255°F), 25 mm/min(125°C (255°F) and above, A12) | >100  | %     | ISO 527-1/-2  |

## THERMAL PROPERTIES

| PROPERTIES                                                                        | VALUE | UNIT       | TEST STANDARD |
|-----------------------------------------------------------------------------------|-------|------------|---------------|
| Melting temperature, 20°C/min(DSC, 2nd Heating)                                   | 360   | °C         |               |
| Glass transition temperature, 20°C/min(DSC)                                       | 165   | °C         |               |
| Specific heat temperature, 23°C (73°F)(DSC)                                       | 1.02  | J/g/K      |               |
| Heat deflection temperature, 1.8 MPa                                              | 164   | °C         | ISO 75-1/-2   |
| Heat deflection temperature, 0.45 MPa                                             | 260   | °C         | ISO 75-1/-2   |
| Coefficient of linear thermal expansion, from -100°C (-148°F) to Tg(DMA, Tension) | 23    | 10E-6 / °K |               |
| Coefficient of linear thermal expansion, Tg to 300°C (572°F)(DMA, Tension)        | 225   | 10E-6 / °K |               |
| Oxygen index(3.2mm)                                                               | 38    | %          | ISO 4589-1/-2 |

## ELECTRICAL PROPERTIES

| PROPERTIES                                | VALUE               | UNIT   | TEST STANDARD |
|-------------------------------------------|---------------------|--------|---------------|
| Dielectric strength(100µm Thickness)      | 84                  | kV/mm  | IEC 60243-1   |
| Relative permittivity, 1MHz(1MHz)         | 3                   |        | IEC 62631-2-1 |
| Surface resistivity                       | 1000000000000000000 | ohm/sq | ASTM D257     |
| Volumic (transversal) resistivity(ohm.cm) | 1000000000000000000 |        | ASTM D257     |

## OTHER PROPERTIES

| PROPERTIES                                                      | VALUE | UNIT              | TEST STANDARD |
|-----------------------------------------------------------------|-------|-------------------|---------------|
| Moisture absorption, At equilibrium at 23°C (73°F) / 50%RH(2mm) | 0.4   | %                 | ISO 62        |
| Moisture absorption, After 24h at 23°C (73°F)/50%RH(2mm)        | 0.05  | %                 | ISO 62        |
| Water absorption, 23°C (73°F), immersion, equilibrium(2mm)      | 0.7   | %                 | ISO 62        |
| Water absorption, 23°C (73°F)(After 24h, immersion, 2mm)        | 0.11  | %                 | ISO 62        |
| Apparent density, 23°C (73°F)                                   | 1.29  | g/cm <sup>3</sup> |               |

## PACKAGING

Available packaging:

- 20 kg / 44 lb boxes

# KEPSTAN® 8002

## SHELF LIFE

Indefinite when stored properly (sealed bags, appropriate UV protection and temperature)

## PROCESSING CONDITIONS:

- Typical melt temperature (Min / Recommended / Max) - Injection Molding:Rear 350°C / Center 375°C / Front 375°C / Nozzle 385°C (660°F / 710°F / 710°F / 725°F)
- Typical mold temperature - Injection molding:220-240°C (430-465°F), to facilitate skin & core cristallization
- Drying time and temperature:150°C (300°F) / 3-4 hours

## SPECIAL CHARACTERISTICS

- Halogen Free Flame Retardant (HFFR)

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