# AKROTEK®
# PK-VM ICF 15 black (6074)

PK CF15

AKROTEK® PK-VM ICF 15 black (6074) is a 15% carbon fibre reinforced polyketon with good sliding properties.

**Features**

hydrolysis / chemically stabilised

**Properties**

| Modulus | Strength | Impact |
|---|---|---|
| 9.000 MPa | 90 MPa | 30 kJ/m² |

## Sustainability

| | |
|---|---|
| **Recycled content** | **15 %** |

## Mechanical Properties

| | | |
|---|---|---|
| **Tensile modulus**<br>ISO 527-2 | 1 mm/min \| d.a.m.<br>1 mm/min \| conditioned | **9000 MPa**<br>**8800 MPa** |
| **Tensile stress at break**<br>ISO 527-2 | 5 mm/min \| d.a.m.<br>5 mm/min \| conditioned | **90 MPa**<br>**90 MPa** |
| **Tensile strain at break**<br>ISO 527-2 | 5 mm/min \| d.a.m.<br>5 mm/min \| conditioned | **1,5 %**<br>**1,5 %** |
| **Flexural modulus**<br>ISO 178 | 2 mm/min \| d.a.m. | **8600 MPa** |
| **Flexural strength**<br>ISO 178 | 2 mm/min \| d.a.m. | **120 MPa** |
| **Flexural strain at break**<br>ISO 178 | 2 mm/min \| d.a.m. | **2 %** |

| | | |
|---|---|---|
| **Charpy impact strength**<br>ISO 179-1/1eU | 23°C \| d.a.m.<br>23°C \| conditioned | **30 kJ/m²**<br>**30 kJ/m²** |

## Thermal Properties

| | | |
|---|---|---|
| **Melting temperature**<br>ISO 11357-3 | DSC, 10K/min | **220 °C** |

## General Properties

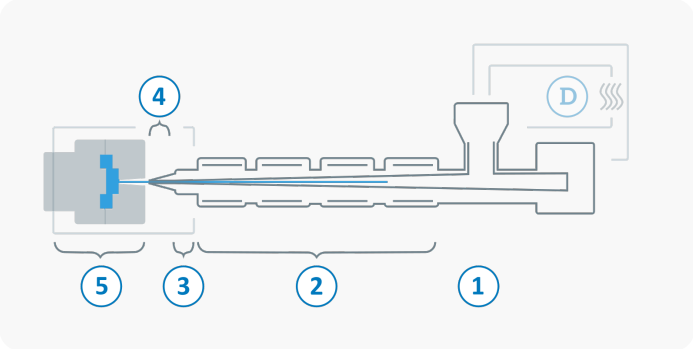
| | | |
|---|---|---|
| **Density**<br>ISO 1183 | 23°C | **1,26 g/cm³** |
| **Humidity absorption**<br>ISO 1110 | 70°C, 62% r.H. | **0,7 - 0,8 %** |
| **Molding shrinkage**<br>ISO 294-4 | flow<br>transverse | **0,4 - 0,6 %**<br>**1,0 - 1,2 %** |

## Electrical Properties

| | | |
|---|---|---|
| **Surface resistivity**<br>IEC 62631-3-2 | d.a.m. | **$10^4$ Ω** |

## Processing

The values mentioned are recommendations. We only recommend desiccant / dry air dryers or vacuum dryers. Too long a drying time and the resulting residual moisture content below the lower limit can lead to filling problems and surface defects. The specified drying time refers to closed and undamaged bagged material. When processing from previously opened bags or from octabins with polyolefin inliners, a longer drying time may be necessary. It is recommended to check the residual moisture content after the drying process.




| | | |
|---|---|---|
| D | Drying time | 0 - 4 h |
| | Drying temperature (τ <= -30°C) | 80 °C |
| | Processing moisture | 0,02 - 0,1 % |
| 1 | Feed section | 60 - 80 °C |
| 2 | Temperature Zone 1 - Zone 4 | 220 - 260 °C |
| 3 | Nozzle temperature | 230 - 260 °C |
| 4 | Melt temperature | 230 - 260 °C |
| 5 | Mold temperature | 60 - 120 °C |
| → | Holding pressure, spec. | 300 - 800 bar |
| ← | Back pressure, spec. | 30 - 70 bar |
| | Injection speed | medium to high |
| | Screw speed | 8 - 15 m/min |

Polyketones crosslink depending on time and temperature, crosslinking is noticed by an increase of viscosity and/or dark spots in natural colored compounds. The melt temperature should be at or below 260 °C and under no circumstances go beyond 270 °C because crosslinking speed will increase. The use of a hot runner system is not recommended when processing polyketone. However, if it is used, it should be noted that the residence time in the barrel including the hot runner should not exceed 10 min. If interruptions of more than 10 minutes are expected, the barrel and hot runner need to be purged and cleaned with polyolefins. The molding machine needs to be purged with polyolefines before and after processing of AKROTEK® PK! There is a risk of cross linking caused by reactions with POM or PA as well as unsuitable masterbatches or cleaning compounds! Crosslinking is noticed by an increase of viscosity and or dark spots in natural colored compounds. In this case purge immediately with polyolefines. Further processing instructions are available on request.