

## Fiche Technique

# KIMYA ABS KEVLAR 3D FILAMENT

## ABS/Aramid Fibre additive manufacturing filament

### DESCRIPTION

Kimya ABS Kevlar is a 3D printing filament made from ABS (Acrylonitrile Butadiene Styrene) reinforced with aramid fibers. As part of the styrenic polymer family, this composite material retains the toughness of standard ABS while offering enhanced performance thanks to the aramid fiber reinforcement. The result is a filament with significantly improved abrasion resistance and mechanical durability. Kimya ABS Kevlar is ideal for producing tools and finished parts that require long-term wear resistance and strength under stress.

### BENEFITS

- High Abrasion Resistance.
- Enhanced Mechanical Durability.
- Reliable for End-Use Parts.

### TECHNICAL DATA

#### Properties

|                                   |                                |
|-----------------------------------|--------------------------------|
| Diameter                          | 1.75 ± 0.1 mm<br>2.85 ± 0.1 mm |
| Density                           | 1.036 g/cm <sup>3</sup>        |
| Moisture rate                     | < 0.5 %                        |
| Melt flow index (MFI)             | 35 g/10min                     |
| Glass transition temperature (Tg) | 108°C (226°F)                  |

#### Values

|                                |
|--------------------------------|
| 1.75 ± 0.1 mm<br>2.85 ± 0.1 mm |
| 1.036 g/cm <sup>3</sup>        |
| < 0.5 %                        |
| 35 g/10min                     |
| 108°C (226°F)                  |

#### Test Methods

|                                     |
|-------------------------------------|
| INS-6712                            |
| ISO 1183-1                          |
| INS-6711                            |
| ISO 1133-1 (@220°C-10kg)            |
| ISO 11357-1 DSC (10°C/min-20-280°C) |

#### Properties

|                                                           |                                                       |
|-----------------------------------------------------------|-------------------------------------------------------|
| Tensile Modulus                                           | 2,168 MPa (314 ksi)                                   |
| Tensile Strength                                          | 34.1 MPa (4.94 ksi)                                   |
| Tensile Strain at Strength                                | 2.1 %                                                 |
| Tensile Stress at Break                                   | 30 MPa (4.35 ksi)                                     |
| Tensile Strain at Break (type A)                          | 6.5 %                                                 |
| Flexural Modulus                                          | 1,976 MPa (286.6 ksi)                                 |
| Flexural Stress at Conventional Deflection (3.5% Strain)* | 56.36 MPa (8.2 ksi)                                   |
| Charpy Impact Resistance                                  | 7.54 kJ/m <sup>2</sup> (3.58 ft-lbs/in <sup>2</sup> ) |
| Shore Hardness                                            | 73.5 D                                                |

#### Values

|                                                       |
|-------------------------------------------------------|
| 2,168 MPa (314 ksi)                                   |
| 34.1 MPa (4.94 ksi)                                   |
| 2.1 %                                                 |
| 30 MPa (4.35 ksi)                                     |
| 6.5 %                                                 |
| 1,976 MPa (286.6 ksi)                                 |
| 56.36 MPa (8.2 ksi)                                   |
| 7.54 kJ/m <sup>2</sup> (3.58 ft-lbs/in <sup>2</sup> ) |
| 73.5 D                                                |

#### Test Methods

|                 |
|-----------------|
| ISO 527-2/5A/50 |
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| ISO 527-2/5A/50 |
| ISO 178         |
| ISO 178         |
| ISO 179-1/1eA   |
| ISO 868         |

### PROCESSING

#### Printing Direction

|                    |
|--------------------|
| Printing Speed     |
| Nozzle Temperature |
| Bed Temperature    |

#### XY

|                                                       |
|-------------------------------------------------------|
| Initial layers: 10-15 mm/s, further layers 30-50 mm/s |
| 210°C - 230°C (410°F - 446°F)                         |
| 85°C - 95°C (185°F - 203°F)                           |

### SUSTAINABILITY

Can be  
recycledRecyclable  
packaging

### NOTES

- \*According to ISO 178, end of the test at 5% deformation even if there is no specimen break.
- The data should be considered as indicative values - Properties can be influenced by production conditions.