

## Fiche Technique

# KIMYA ABS-ESD 3D FILAMENT

## ESD ABS additive manufacturing filament

### DESCRIPTION

Kimya ABS-ESD is a 3D printing filament made from ABS (Acrylonitrile Butadiene Styrene) with added ESD (Electrostatic Discharge) protection. As part of the styrenic polymer family, it combines the mechanical strength and rigidity of standard ABS with the ability to safely dissipate static electricity. This makes it particularly useful for sensitive electronic applications. Kimya ABS-ESD is lightweight, impact-resistant, and easy to print, offering a reliable solution for functional parts where electrostatic protection is essential.

### BENEFITS

- ESD Protection.
- Strong Yet Lightweight.
- Impact Resistant.

### TECHNICAL DATA

#### Properties

|                                   |                                |
|-----------------------------------|--------------------------------|
| Diameter                          | 1.75 ± 0.1 mm<br>2.85 ± 0.1 mm |
| Density                           | 1.064 g/cm <sup>3</sup>        |
| Moisture rate                     | < 0.5 %                        |
| Melt flow index (MFI)             | 16 - 24 g/10min                |
| Glass transition temperature (Tg) | 107°C (225°F)                  |

#### Values

|                                |
|--------------------------------|
| 1.75 ± 0.1 mm<br>2.85 ± 0.1 mm |
| 1.064 g/cm <sup>3</sup>        |
| < 0.5 %                        |
| 16 - 24 g/10min                |
| 107°C (225°F)                  |

#### Test Methods

|                                     |
|-------------------------------------|
| INS-6712                            |
| ISO 1183-1                          |
| INS-6711                            |
| ISO 1133-1 (@200°C-10kg)            |
| ISO 11357-1 DSC (10°C/min-20-220°C) |

#### Properties

|                                                           |                                                       |
|-----------------------------------------------------------|-------------------------------------------------------|
| Surface resistivity                                       | 1 × 10 <sup>7</sup> - 1 × 10 <sup>10</sup> Ω/sq       |
| Tensile Modulus                                           | 1,207 MPa (175 ksi)                                   |
| Tensile Strength                                          | 27 MPa (3.9 ksi)                                      |
| Tensile Strain at Strength                                | 2.9 %                                                 |
| Tensile Stress at Break                                   | 18 MPa (2.6 ksi)                                      |
| Tensile Strain at Break (type A)                          | 5.7 %                                                 |
| Flexural Modulus                                          | 957 MPa (141.7 ksi)                                   |
| Deformation at Flexural Strain                            | > 5 %                                                 |
| Flexural Stress at Conventional Deflection (3.5% Strain)* | 33.8 MPa (4.90 ksi)                                   |
| Charpy Impact Resistance                                  | 13.3 kJ/m <sup>2</sup> (6.32 ft-lbs/in <sup>2</sup> ) |
| Shore Hardness                                            | 64.1 D                                                |

#### Values

|                                                       |
|-------------------------------------------------------|
| 1 × 10 <sup>7</sup> - 1 × 10 <sup>10</sup> Ω/sq       |
| 1,207 MPa (175 ksi)                                   |
| 27 MPa (3.9 ksi)                                      |
| 2.9 %                                                 |
| 18 MPa (2.6 ksi)                                      |
| 5.7 %                                                 |
| 957 MPa (141.7 ksi)                                   |
| > 5 %                                                 |
| 33.8 MPa (4.90 ksi)                                   |
| 13.3 kJ/m <sup>2</sup> (6.32 ft-lbs/in <sup>2</sup> ) |
| 64.1 D                                                |

#### Test Methods

|                 |
|-----------------|
| ASTM D257       |
| ISO 527-2/5A/50 |
| ISO 527-2/5A/50 |
| ISO 527-2/5A/50 |
| ISO 527-2/5A/50 |
| ISO 527         |
| ISO 178         |
| ISO 178         |
| ISO 178         |
| ISO 179-1/1eA   |
| ISO 868         |

### PROCESSING

#### Printing Direction

|                    |                                                       |
|--------------------|-------------------------------------------------------|
| Printing Speed     | Initial layers: 10-20 mm/s, further layers 25-50 mm/s |
| Nozzle Temperature | 255°C - 270°C (491°F - 518°F)                         |
| Bed Temperature    | 90°C - 100°C (194°F - 212°F)                          |

#### XY

|                                                       |
|-------------------------------------------------------|
| Initial layers: 10-20 mm/s, further layers 25-50 mm/s |
| 255°C - 270°C (491°F - 518°F)                         |
| 90°C - 100°C (194°F - 212°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.