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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 | Values | Test Methods |
|---|---|---|
| Diameter | 1.75 ± 0.1 mm<br>2.85 ± 0.1 mm | INS-6712 |
| Density | 1.064 g/cm$^3$ | ISO 1183-1 |
| Moisture rate | < 0.5 % | INS-6711 |
| Melt flow index (MFI) | 16 - 24 g/10min | ISO 1133-1 (@200°C-10kg) |
| Glass transition temperature (Tg) | 107°C (225°F) | ISO 11357-1 DSC (10°C/min-20-220°C) |
| **Properties** | **Values** | **Test Methods** |
| Surface resistivity | $1 \times 10^7$ - $1 \times 10^{10}$ Ω/sq | ASTM D257 |
| Tensile Modulus | 1,207 MPa (175 ksi) | ISO 527-2/5A/50 |
| Tensile Strength | 27 MPa (3.9 ksi) | ISO 527-2/5A/50 |
| Tensile Strain at Strength | 2.9 % | ISO 527-2/5A/50 |
| Tensile Stress at Break | 18 MPa (2.6 ksi) | ISO 527-2/5A/50 |
| Tensile Strain at Break (type A) | 5.7 % | ISO 527 |
| Flexural Modulus | 957 MPa (141.7 ksi) | ISO 178 |
| Deformation at Flexural Strain | > 5 % | ISO 178 |
| Flexural Stress at Conventional Deflection (3.5% Strain)* | 33.8 MPa (4.90 ksi) | ISO 178 |
| Charpy Impact Resistance | 13.3 kJ/m$^2$ (6.32 ft-lbs/in$^2$) | ISO 179-1/1eA |
| Shore Hardness | 64.1 D | ISO 868 |

## PROCESSING

| Printing Direction | XY |
|---|---|
| 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) |

## SUSTAINABILITY

Can be recycled

Recyclable 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.

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