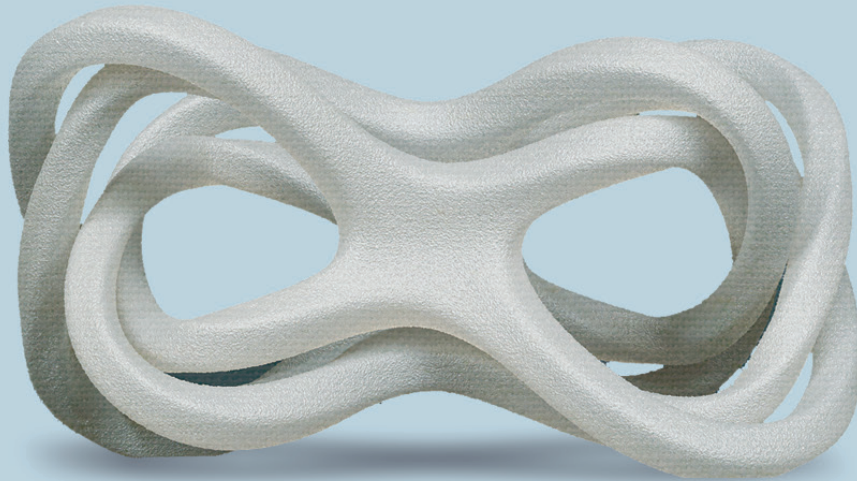




KIMYA **HIPS-R**



KIMYA BREAKAWAY SUPPORT MATERIAL HIPS-R is made of 100% recycled material.

| BREAKAWAY SUPPORT MATERIAL FOR HIGH PERFORMANCE MATERIALS | 100% RECYCLED MATERIAL

FILAMENT PROPERTIES

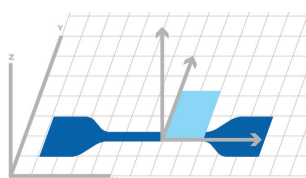
| DESCRIPTION | TEST METHODS | UNITS | VALUES |
|-----------------------------------|-------------------------------------|-------------------|--------------|
| Diameter | INS-6712 | mm | 1.75 +/- 0.1 |
| Density | ISO 1183-1 | g/cm ³ | 1.03 |
| Moisture rate | INS-6711 | % | <1 |
| Melt Flow Index (MFI) | ISO 1133-1 (200°C - 5 kg) | g/10min | 4.7 - 7.1 |
| Glass transition temperature (Tg) | ISO 11357-1 (10°C/min - 20 à 260°C) | °C | 97 |

PRINT PARAMETERS AND SPECIMENS DIMENSIONS

| | |
|----------------------------|--------------------|
| PRINTING DIRECTION | XY |
| PRINTING SPEED | 50 mm/s |
| INFILL | 100% - rectilinear |
| CHAMBER TEMPERATURE | N/A |
| BED TEMPERATURE | 95°C |
| NOZZLE TEMPERATURE | 250°C |

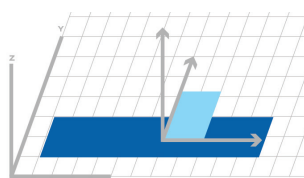
RESULTS

TENSILE TEST



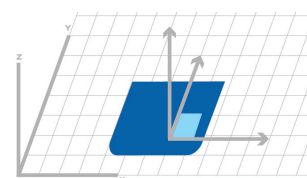
Dim.(mm): 75x12.5x2
Specimen type: ISO 527-5A

BENDING TEST - CHARPY IMPACT



Dim. (mm): 80x10x4

HARDNESS



Dim.(mm): 45x45x4

PRINTED SPECIMENS PROPERTIES

| | PROPERTIES | TEST METHODS | UNITS | VALUES |
|------------------------------|--|-----------------|-------------------|--------|
| MECHANICAL PROPERTIES | Tensile Modulus | ISO 527-2/5A/50 | MPa | 1,273 |
| | Tensile Strength | ISO 527-2/5A/50 | MPa | 23,7 |
| | Tensile strain at strength | ISO 527-2/5A/50 | % | 1,5 |
| | Tensile stress at break | ISO 527-2/5A/50 | MPa | 16,7 |
| | Tensile strain at break | ISO 527-2/5A/50 | % | 11,5 |
| | Flexural modulus | ISO 178 | MPa | 1,533 |
| | Flexural stress at conventional deflection (3,5% strain)** | ISO 178 | MPa | 36,2 |
| | Charpy impact resistance | ISO 179-1/1EA | kJ/m ² | 7,3 |
| | Shore Hardness | ISO 868 | Shore D | 76,6 |

*According to ISO 178, end of the test at 5% strain even if there is no specimen break.

** The data should be considered as indicative values - Properties can be influenced by production conditions.