

# Arnitel® ID2060 HT

**Arnitel® ID2060 HT is a new high-performance Thermoplastic Copolyester (TPC) for 3D printing using Fused Filament Fabrication (FFF). This filament is the first to offer a unique balance of flexibility, chemical resistance against exhaust gas recirculation (EGR) condensate and prolonged high temperature resistance for printing demanding automotive air-fuel and industrial applications.**

Arnitel® ID2060 HT is the first high performance TPC FFF material combining flexibility with prolonged high temperature use, chemical resistance and strength. This combination makes it suitable to print cold charge air ducts for demanding automotive under the hood applications as well as components for end-of-arm tooling. Parts printed can resist sustained high-temperature of 175°C (1000 hrs) or 190°C (500 hrs) and chemicals such as EGR condensate.

## Key Benefits & Properties

- First high temperature TPC filament on the market
- A unique balance of flexibility, sustained high temperature and chemical resistance
- Prolonged high temperature performance: 175°C (1000 hrs), 190°C (500 hrs)
- Excellent chemical resistance against EGR condensates
- Hardness of Shore D 61

## Applications

- Air-fuel management systems, engine shields and covers for automotive
- Shutter system and front-end module components for automotive
- Gaskets and seals for automotive
- Aluminium & rubber replacement for light weighting applications in automotive under the hood
- End-of-arm tooling
- Tubes for home appliances

*Air duct printed in Arnitel®  
ID2060 HT*



### Tested

DSM Additive Manufacturing collaborated with equipment partners to extensively test Arnitel® 1D2060 HT, offering customers fully proven materials for open 3D printing platforms. Tests have been conducted on Massportal, Ultimaker and GermanRepRap FFF printers.

### Availability

Arnitel® 1D2060 HT is available in spools of 1.75 and 2.85 mm at DSM AM distributors and resellers.

### More information

For more information and buying options, please visit [www.dsm.com/additive-manufacturing/](http://www.dsm.com/additive-manufacturing/)

## Technical Data

### Material specific properties

Material property	Value	Unit	Test Method
Tensile modulus (3D printed: flat X-X direction)	230	MPa	ISO 527-1/-2
Stress at break (3D printed: flat X-X direction)	21	MPa	ISO 527-1/-2
Strain at break (3D printed: flat X-X direction)	245	%	ISO 527-1/-2
Tensile modulus (3D printed: on-edge X-Z direction)	240	MPa	ISO 527-1/-2
Stress at break (3D printed: on-edge X-Z direction)	35	MPa	ISO 527-1/-2
Strain at break (3D printed: on-edge X-Z direction)	510	%	ISO 527-1/-2
Tensile modulus (3D printed: upright Z direction)	220	MPa	ISO 527-1/-2
Stress at break (3D printed: upright Z direction)	20	MPa	ISO 527-1/-2
Strain at break (3D printed: upright Z direction)	55	%	ISO 527-1/-2

### Mechanical properties (TPE)

Shore A Hardness (3s)	98	-	ISO 868
Shore D Hardness (3s)	61	-	ISO 868

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# Arnitel<sup>®</sup> ID 2060-HT

## TPC

3D printing grade, 100% Recyclable, for High Temperature Applications

Print Date: 2018-10-23



Properties	Typical Data	Unit	Test Method
<b>Mechanical properties</b>		<b>Value</b>	
Tensile modulus (3D printed: flat X-X direction)	230	MPa	ISO 527-1/-2
Stress at break (3D printed: flat X-X direction)	21	MPa	ISO 527-1/-2
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Strain at break (3D printed: upright Z direction)	55	%	ISO 527-1/-2
<b>Thermal properties</b>		<b>Value</b>	
Melting temperature (10°C/min)	208	°C	ISO 11357-1/-3
Glass transition temperature (10°C/min)	-10	°C	ISO 11357-1/-2
Vicat softening temperature (50°C/h 10N)	190	°C	ISO 306
Vicat softening temperature (50°C/h 50N)	90	°C	ISO 306
<b>Other properties</b>		<b>Value</b>	
Humidity absorption	0.1	%	Sim. to ISO 62
Density	1270	kg/m <sup>3</sup>	ISO 1183

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## Property Data (Provisional)

# Arnitel<sup>®</sup> ID 2060-HT

Print Date: 2018-10-23

Properties	Typical Data	Unit	Test Method
<b>Material specific properties</b>	<b>Value</b>		
Shore D Hardness (3s)	61	-	ISO 868

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