

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/

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

DSM – Bright Science. Brighter Living.™

All information supplied by or on behalf of DSM in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and, in good faith, believed reliable, but DSM assumes no liability and makes no warranties of any kind, express or implied, including, but not limited to, those of title, merchantability, fitness for a particular purpose or non-infringement or any warranty arising from a course of dealing, usage, or trade practice whatsoever in respect of application, processing or use made of aforementioned information, or product. The user assumes all responsibility for the use of all information provided and shall verify quality and other properties or any consequences from the use of all such information. Arnitel® is a trademark of DSM.

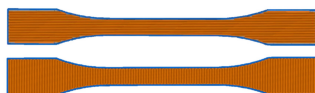
Copyright © DSM 2018. All rights reserved. No part of the information may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of DSM. Doc 0008-01

Arnitel® ID 2060-HT

TPC

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

Print Date: 2018-10-23



Upper figure: Flat X-X Direction
Lower figure: Flat Y-X Direction

Properties	Typical Data	Unit	Test Method
Mechanical properties		Value	
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
Thermal properties		Value	
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
Other properties		Value	
Humidity absorption	0.1	%	Sim. to ISO 62
Density	1270	kg/m ³	ISO 1183

Akulon®, Arnite®, Arnitel®, EcoPaXX®, ForTii®, Novamid®, Stanyl® and Xytron™ are trademarks of DSM.

All information supplied by or on behalf of DSM in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and, in good faith, believed reliable, but DSM assumes no liability and makes no warranties of any kind, express or implied, including, but not limited to, those of title, merchantability, fitness for a particular purpose or non-infringement or any warranty arising from a course of dealing, usage, or trade practice whatsoever in respect of application, processing or use made of the aforementioned information, or product. The user assumes all responsibility for the use of all information provided and shall verify quality and other properties or any consequences from the use of all such information.

Typical values are indicative only and are not to be construed as being binding specifications. This document replaces all previous versions relating to this subject.
Copyright © DSM 2018. All rights reserved. No part of the information may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of DSM.

Property Data (Provisional)

Arnitel[®] ID 2060-HT

Print Date: 2018-10-23

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

Akulon®, Arnite®, Arnitel®, EcoPaXX®, ForTii®, Novamid®, Stanyl® and Xytron™ are trademarks of DSM.

All information supplied by or on behalf of DSM in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and, in good faith, believed reliable, but DSM assumes no liability and makes no warranties of any kind, express or implied, including, but not limited to, those of title, merchantability, fitness for a particular purpose or non-infringement or any warranty arising from a course of dealing, usage, or trade practice whatsoever in respect of application, processing or use made of the aforementioned information, or product. The user assumes all responsibility for the use of all information provided and shall verify quality and other properties or any consequences from the use of all such information.

Typical values are indicative only and are not to be construed as being binding specifications. This document replaces all previous versions relating to this subject.

Copyright © DSM 2018. All rights reserved. No part of the information may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of DSM.