

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

产品

Zytel® HTN51G35HSL NC010是一种35% 玻纤增强, 高温尼龙, 高性能聚酰胺

总说明	数值	单位	测试标准
树脂鉴别	PA6T/XT-GF35	-	ISO 1043
产品标识码	PA6T/XT-GF35	-	ISO 11469
产品标识码	>PPA-GF35<	-	SAE J1344
流变性能	干态/调节后	单位	测试标准
模塑收缩率, 平行	0.2 / -	%	ISO 294-4, 2577
模塑收缩率, 垂直	0.6 / -	%	ISO 294-4, 2577
机械性能	干态/调节后	单位	测试标准
拉伸模量	12000 / 12000	MPa	ISO 527-1/-2
断裂应力	210 / 210	MPa	ISO 527-1/-2
断裂伸长率	2.4 / 2.2	%	ISO 527-1/-2
弯曲模量	10300 / 10300	MPa	ISO 178
弯曲强度	300 / 290	MPa	ISO 178
拉伸蠕变模量			ISO 899-1
1h	* / 11000	MPa	
1000h	* / 9500	MPa	
无缺口简支梁冲击强度			ISO 179/1eU
+23°C	70 / 55	kJ/m²	
-30°C	60 / 50	kJ/m²	
简支梁缺口冲击强度			ISO 179/1eA
+23°C	11 / 11	kJ/m²	
-30°C	10 / 10	kJ/m²	
-40°C	11 / -	kJ/m²	
悬臂梁缺口冲击强度			ISO 180/1A
23°C	11 / 11	kJ/m²	
-30°C	10 / 10	kJ/m²	
无缺口悬臂梁冲击, -30°C	50 / 40	kJ/m²	ISO 180/1U
洛氏硬度	108 / -	-	ISO 2039-2
洛氏硬度, Rockwell	124 / -	-	ISO 2039-2
滑动摩擦系数, 1h, 钢	- / 0.35	-	ASTM 1894
热性能	干态/调节后	单位	测试标准
熔融温度, 10°C/min	300 / *	°C	ISO 11357-1/-3
熔融温度	300 / *	°C	ISO 11357-1/-3
玻璃化转变温度, 10°C/min	135 / 95	°C	ISO 11357-1/-2
热变形温度			ISO 75-1/-2
1.80 MPa	264 / *	°C	
0.45 MPa	284 / *	°C	
维卡软化温度, 50°C/h 50N	290 / *	°C	ISO 306
线膨胀系数, 平行	18 / *	E-6/K	ISO 11359-1/-2
线膨胀系数			ISO 11359-1/-2
垂直	55 / *	E-6/K	
垂直, -40-23°C	55 / *	E-6/K	
平行, -40-23°C	18 / *	E-6/K	
熔体	0.25	W/(m K)	-
熔体的比热	1860	J/(kg K)	-
相对温度指数, 电气性能			UL 746B
0.75mm	150 / *	°C	
1.5mm	150 / *	°C	
3mm	150	°C	

修订: 2019-03-22

Page: 1 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

相对温度指数, 冲击性能			UL 746B
0.75mm	125	°C	
1.5mm	125 / *	°C	
3mm	130	°C	
相对温度指数, 强度			UL 746B
0.75mm	130	°C	
1.5mm	140 / *	°C	
3mm	150	°C	
燃烧性能	干态/调节后	单位	测试标准
1.5mm名义厚度时的燃烧性	HB / *	class	IEC 60695-11-10
测试用试样的厚度	1.5 / *	mm	IEC 60695-11-10
UL注册	yes / *	-	UL 94
厚度为h时的燃烧性	HB / *	class	IEC 60695-11-10
测试用试样的厚度	0.85 / *	mm	IEC 60695-11-10
UL注册	yes / *	-	UL 94
燃烧性 - 氧指数	24 / *	%	ISO 4589-1/-2
灼热丝可燃指数			IEC 60695-2-12
0.75mm	750 / -	°C	
1.5mm	750 / -	°C	
3mm	960 / -	°C	
灼热丝起燃温度			IEC 60695-2-13
1.5mm	775 / -	°C	
3mm	800 / -	°C	
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	23	mm/min	ISO 3795 (FMVSS 302)
电性能	干态/调节后	单位	测试标准
相对介电常数.			IEC 62631-2-1
100Hz	4 / -	-	
1MHz	4 / -	-	
介质损耗因子, 1MHz	120 / -	E-4	IEC 62631-2-1
体积电阻率	>1E13 / 1E13	Ohm*m	IEC 62631-3-1
表面电阻率	* / 1E14	Ohm	IEC 62631-3-2
介电强度	36 / 36	kV/mm	IEC 60243-1
相对漏电起痕指数	600 / 600	-	IEC 60112
其它性能	干态/调节后	单位	测试标准
吸水性, 2mm	4.5 / *	%	类似ISO 62
密度	1470 / -	kg/m³	ISO 1183
熔体密度	1230	kg/m³	-
VDA性能	数值	单位	测试标准
气味测试	4	class	VDA 270
注塑	数值	单位	测试标准
建议干燥	是	-	-
干燥温度	≥ 100	°C	-
干燥时间, 除湿干燥机	6 - 8	h	-
加工前水分含量	≤ 0.1	%	-
最优熔体温度	325	°C	-
注塑 熔体温度	320	°C	-
注塑 熔体温度	330	°C	-
最优模具温度	150	°C	-
模具温度	140 ⁽¹⁾	°C	-
模具温度	180	°C	-

1: Higher temperature needed for thinner sections.

典型数据

加工方法	• 注塑
供货形式	• 粒料

修订: 2019-03-22

Page: 2 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

添加剂	• 润滑剂	• 脱模助剂	
特殊性能	• 热稳定、耐热的		
地区供应	• 北美 • 欧洲	• 亚太 • 中南美洲	• 中东/非洲 • Global

成型

注塑

During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.

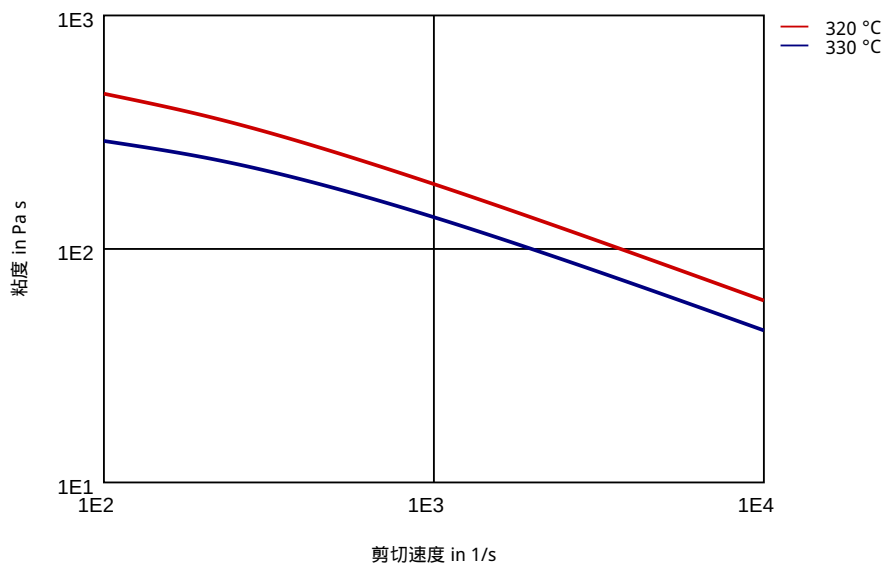


DuPont™ Zytel® HTN51G35HSL NC010

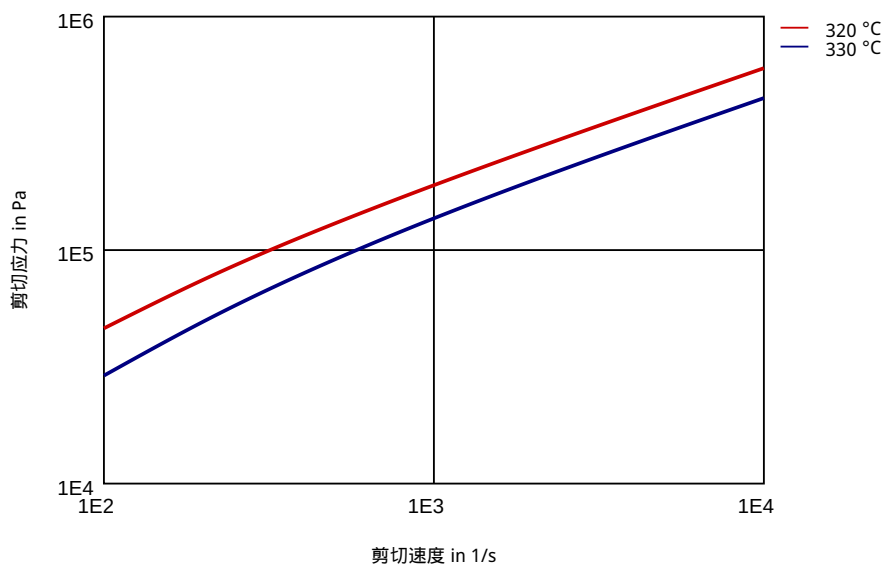
HIGH PERFORMANCE POLYAMIDE RESIN

图表

粘度 - 剪切速度



剪切应力 - 剪切速度



修订：2019-03-22

Page: 4 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China
Tel: +86 18551213137

Asia Pacific
Tel: +81 3 5521 8600

Europe/Middle East/Africa
Tel: +41 22 717 51 11

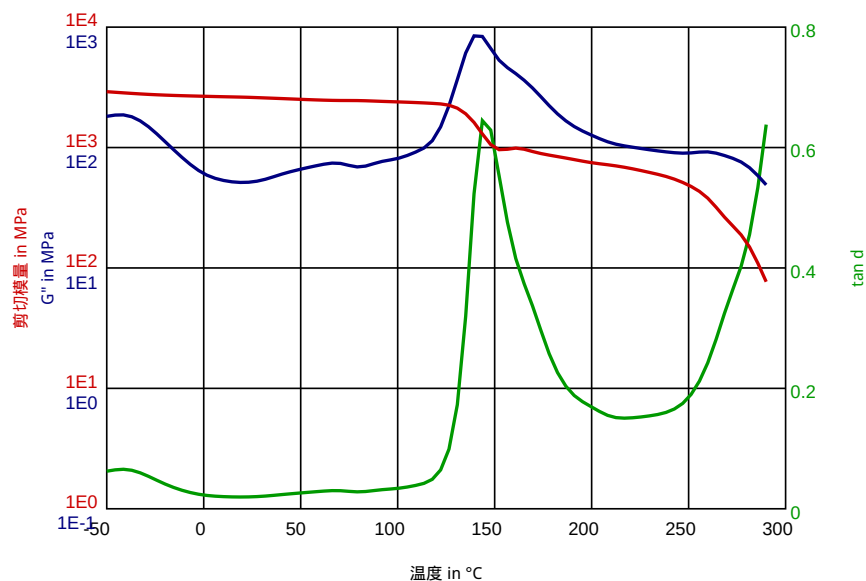


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

动态剪切模量 - 温度 (干)



修订：2019-03-22

Page: 5 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China
Tel: +86 18551213137

Asia Pacific
Tel: +81 3 5521 8600

Europe/Middle East/Africa
Tel: +41 22 717 51 11

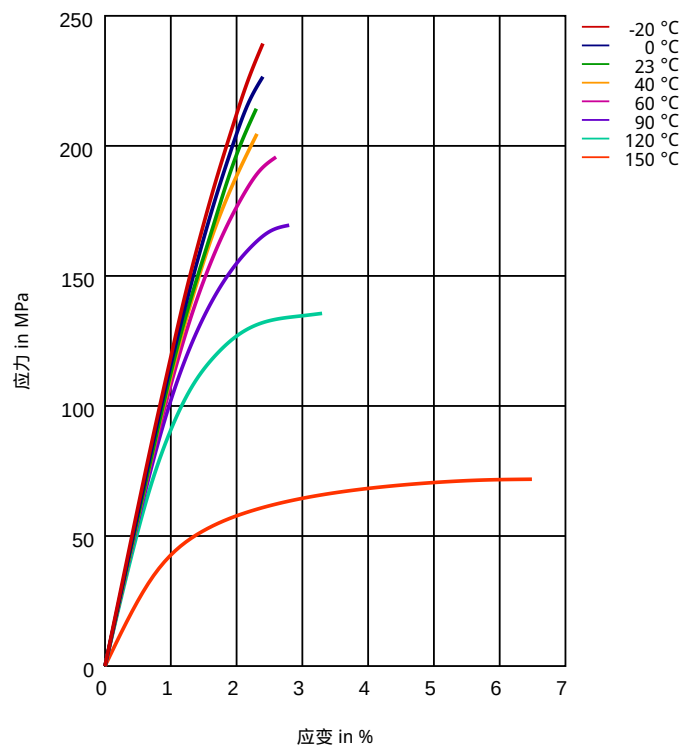


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

应力 - 应变. (干)



修订：2019-03-22

Page: 6 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

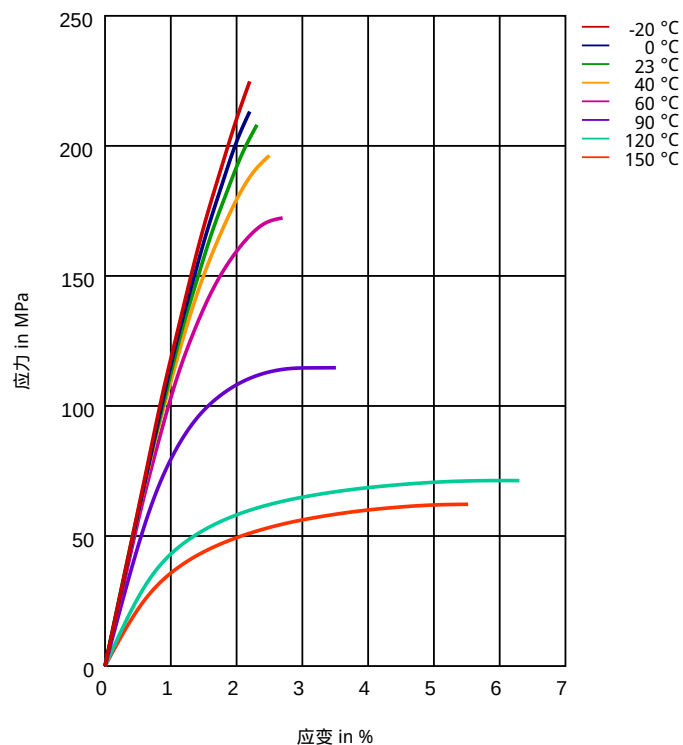


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

应力 - 应变. (湿)



修订：2019-03-22

Page: 7 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

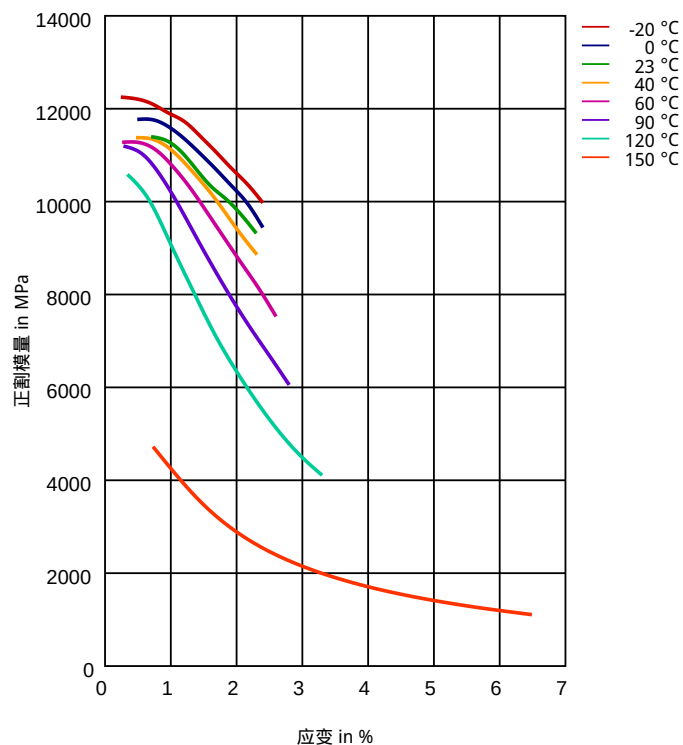


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

正割模量 - 应变. (干)



修订：2019-03-22

Page: 8 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

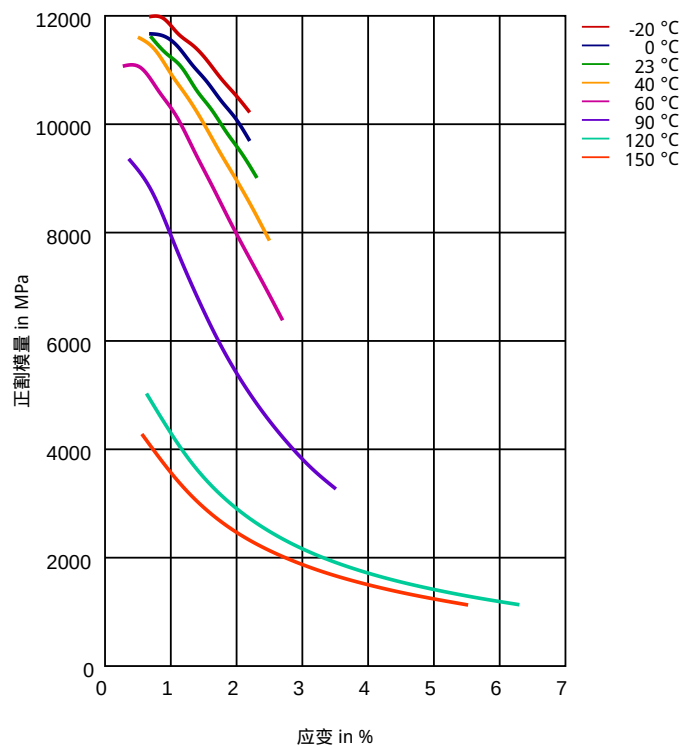


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

正割模量 - 应变. (湿)



修订：2019-03-22

Page: 9 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

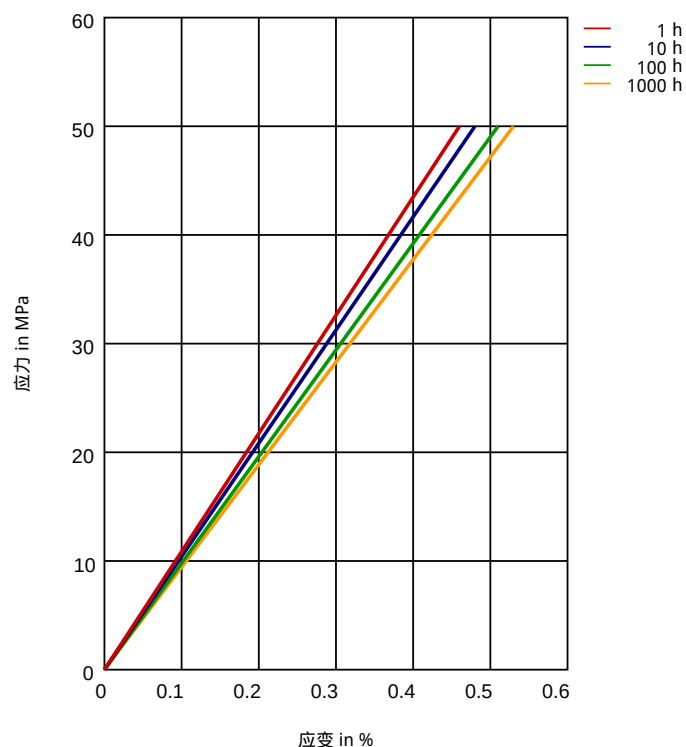


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

应力 - 应变(等时的) 23°C(湿)



修订：2019-03-22

Page: 10 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

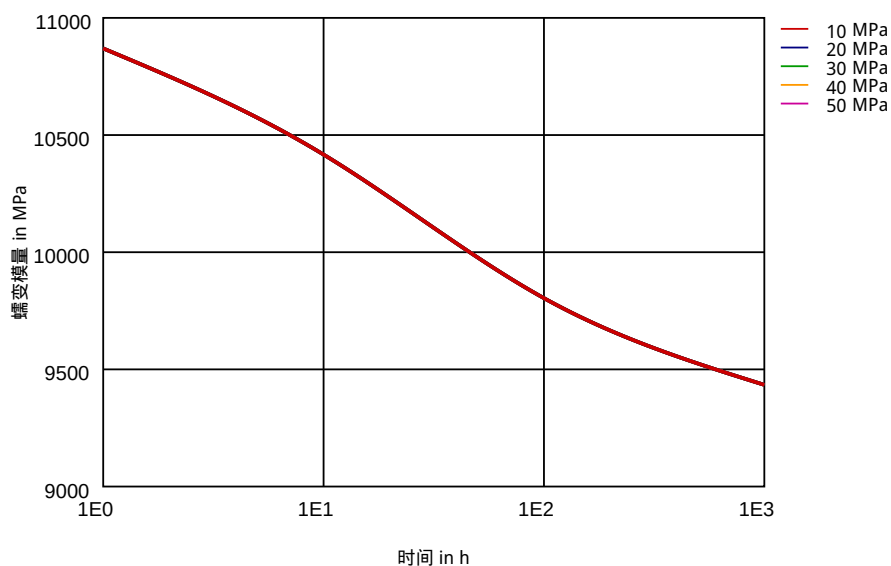


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

蠕变模量 - 时间, 23°C(湿)



修订：2019-03-22

Page: 11 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

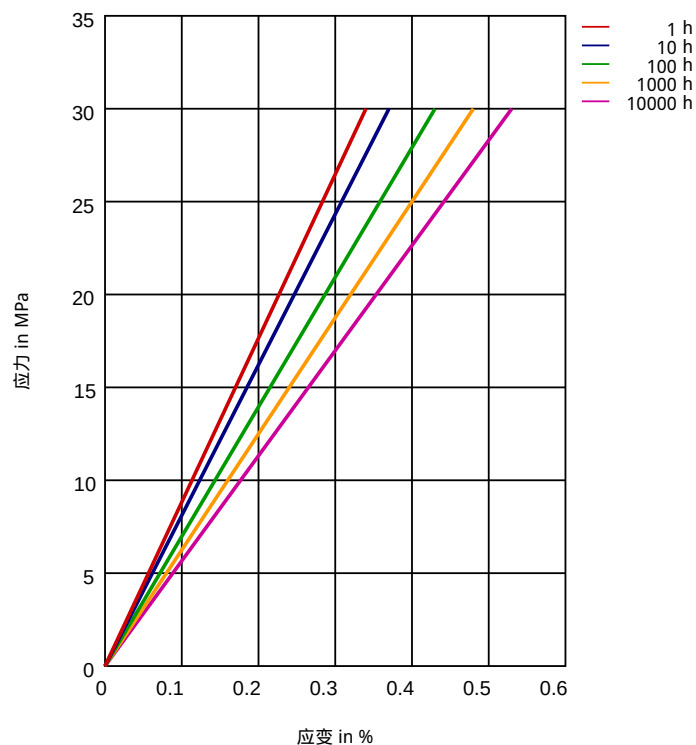


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

应力 - 应变(等时的) 100°C(干)



修订：2019-03-22

Page: 12 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

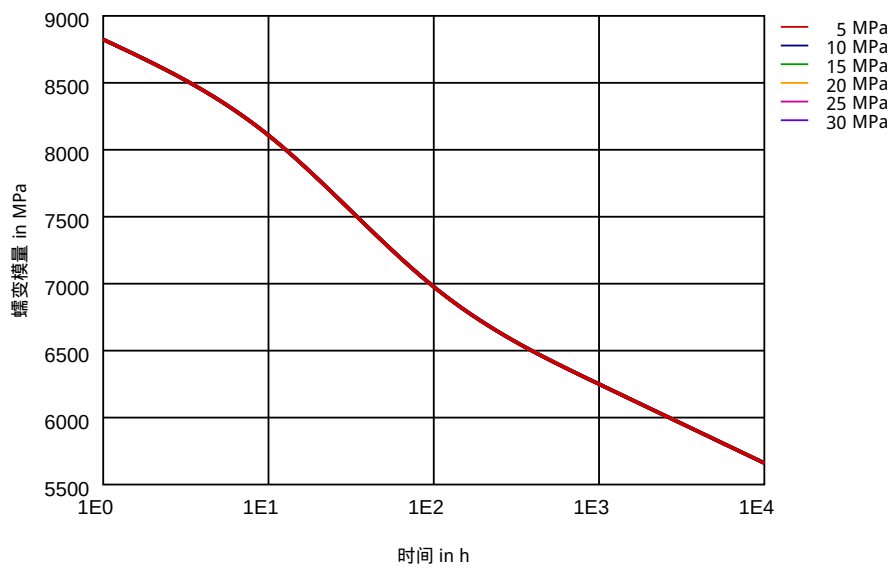


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

蠕变模量 - 时间. 100°C(干)



To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

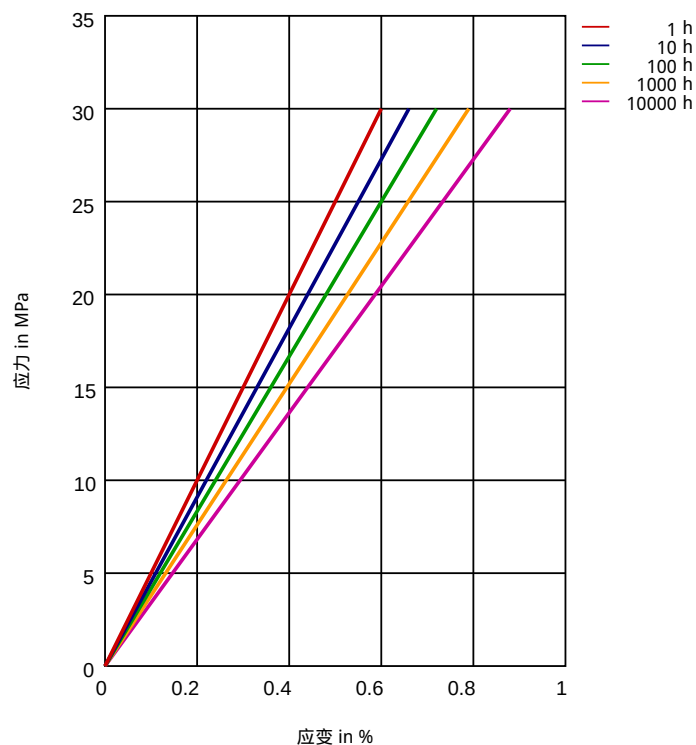
China	Asia Pacific	Europe/Middle East/Africa
Tel: +86 18551213137	Tel: +81 3 5521 8600	Tel: +41 22 717 51 11



DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

应力 - 应变(等时的) 150°C(干)



修订：2019-03-22

Page: 14 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

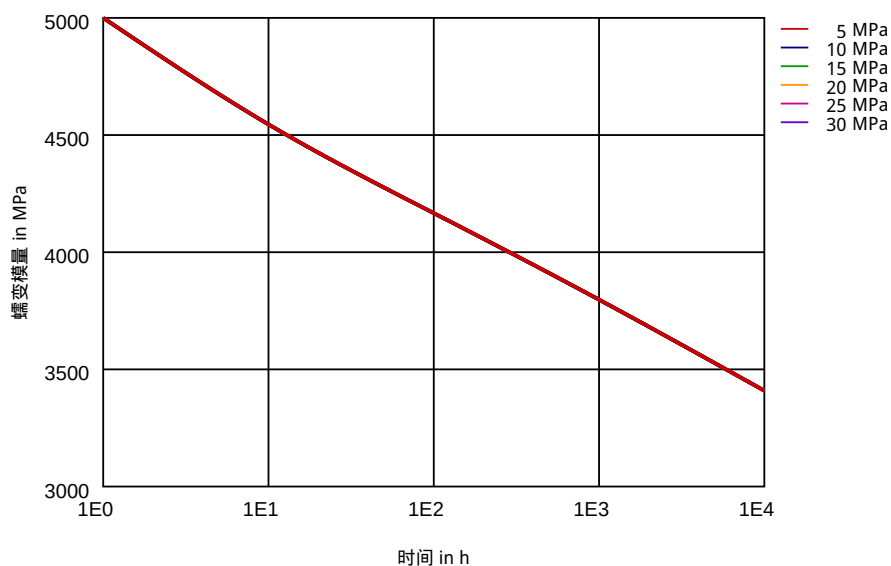


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

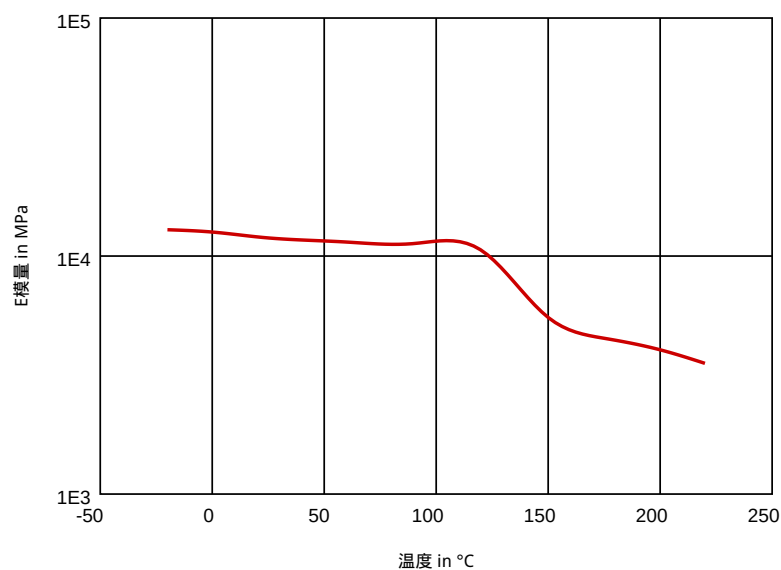
DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

蠕变模量 - 时间, 150°C(干)



拉伸模量 - 温度(干)



修订：2019-03-22

Page: 15 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

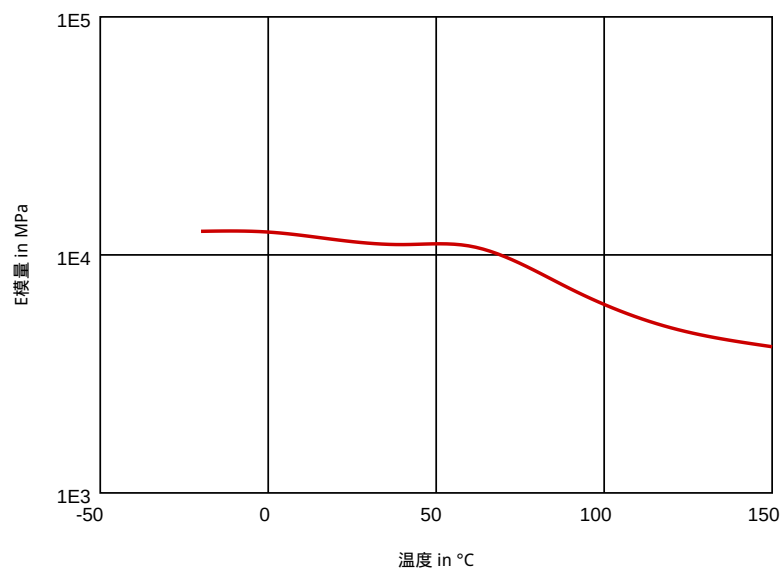


Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

拉伸模量 - 温度 (湿)



修订：2019-03-22

Page: 16 of 18

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

耐化学性

酸类

- ✓ 醋酸 (5g/100g) (23°C)
- ✓ 柠檬酸溶液 (10g/100g) (23°C)
- ✓ 乳酸 (10g/100g) (23°C)

矿物油

- ✓ SAE 10W40号多效润滑油 (23°C)
- ✓ SAE 10W40号多效润滑油 (130°C)
- ✓ SAE 89/90号变速箱润滑油 (130°C)
- ✓ 绝缘油 (23°C)
- ✓ 滑油OS206 304 Ref.Eng.Oil, ISP (135°C)
- ✓ 自动准双曲面齿轮油壳牌壳牌Donax (135°C)
- ✓ 水力油Pentosin CHF 202 (125°C)

标准燃油

- ✓ ISO 1817 燃油1号 (60°C)
- ✓ ISO 1817 燃油2号 (60°C)
- ✓ ISO 1817 燃油3号 (60°C)
- ✓ ISO 1817 燃油4号 (60°C)
- ✓ 不含酒精的标准燃油(优先使用C类ISO 1817 燃油) (23°C)
- ✓ 含酒精的标准燃油(优先使用4号ISO 1817 燃油) (23°C)
- ✓ 柴油(优先使用F类ISO 1817液体) (23°C)
- ✓ 柴油(优先使用F类ISO 1817液体) (90°C)
- ✓ 柴油(优先使用F类ISO 1817液体) (>90°C)
- ✓ 柴油EN590 (100°C)

其它

- ✓ 乙二醇水溶液 (50g/100g) (108°C)
- ✓ 水 (23°C)
- ✓ 去离子水 (90°C)
- ✓ 冷却Glysantin G48 , 1:1水环境 (125°C)

Symbols used:

- ✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

X not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

联系杜邦以获得材料安全物性数据表、一般指南和/或其他关于排风、处理、清洗、干燥等的相关信息。除非特别指定，ISO机械性能测试样条厚度为

修订：2019-03-22

Page: 17 of 18

To find out more, visit **DuPont Performance Polymers** or contact nearest DuPont location.

China

Tel: +86 18551213137

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



DuPont™ Zytel® HTN51G35HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

4mm (Hytrel® 2mm), IEC电性能测试样品厚度为2mm, 所有的ASTM性能测试样条厚度为3.2mm, 测试温度为23°C。

这里阐明的信息是免费提供的, 基于杜邦认为可靠的技术数据且在材料性能的通常范围内。仅供具有专业技能的人使用, 由其自行判断和承担风险。

这些数据不可以用作以建立技术说明规范, 或者作为设计依据单独使用; 我们提供处理预警信息是基于我们理解使用者会自行判断其特殊的使用条件不会对其产生健康或者安全危害。

由于产品使用和废弃的条件超出了本公司的控制范围, 本公司对于本信息的使用不做任何保证, 不论明示或暗示, 亦不承担任何责任。

对于任何材料, 制定规范前必须在终端使用条件下进行评估。

这里的任何信息不能作为使用专利或者侵犯专利权的许可。

警告: 不要用于涉及永久植入人体的医疗应用。

如果需要其他医疗方面的应用, 请联系杜邦销售代表并阅读医疗应用警告H-50103-5.

Copyright© 2017杜邦公司版权所有杜邦椭圆形商标, DuPont™, The miracles of science™ and 以及所有标有® 或™ 的产品是杜邦公司或其分支机构关联公司的商标或者注册商标。

