

# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

### 产品

Zytel® 尼龙树脂的共性包括良好的机械和物理性能，例如高机械强度，刚性和韧性之间良好的平衡，良好的高温性能、电性能和阻燃性能，优异的耐磨损和耐化学品性能。另外，Zytel® 尼龙树脂有不同改性和增强规格为特殊加工和终端客户提供定制的性能。Zytel® 尼龙树脂，包括大多数阻燃规格，提供了染色可能性。

Zytel® 尼龙树脂良好的热稳定性能通常使正确处理的生产废弃物回收成为可能。如果不能回收使用，杜邦建议的优先选择是在合适的装置中焚烧进行能量回收（基体树脂-31 kJ/g）。废弃处理需遵守当地法规。

Zytel® 尼龙树脂通常应用于要求严苛的汽车、家具、家用电器、运动器材和建筑行业。

Zytel® 70G43L NC010是一种43% 玻纤增强 尼龙66

总说明	数值	单位	测试标准
树脂鉴别	PA66-GF43	-	ISO 1043
产品标识码	PA66-GF43	-	ISO 11469
流变性能	干态/调节后	单位	测试标准
模塑收缩率, 平行	0.3 / -	%	ISO 294-4, 2577
模塑收缩率, 垂直	1.0 / -	%	ISO 294-4, 2577
机械性能	干态/调节后	单位	测试标准
拉伸模量	14000 / 11000	MPa	ISO 527-1/-2
断裂应力	225 / 160	MPa	ISO 527-1/-2
断裂伸长率	3 / 4	%	ISO 527-1/-2
弯曲模量	12000 / 8900	MPa	ISO 178
弯曲强度	340 / 260	MPa	ISO 178
Poisson's ratio	0.33 / 0.34	-	ISO 527-1/-2
拉伸蠕变模量			ISO 899-1
1h	* / 10800	MPa	
1000h	* / 7960	MPa	
无缺口简支梁冲击强度			ISO 179/1eU
+23°C	100 / 105	kJ/m <sup>2</sup>	
-30°C	85 / 75	kJ/m <sup>2</sup>	
简支梁缺口冲击强度			ISO 179/1eA
+23°C	16 / 19	kJ/m <sup>2</sup>	
-30°C	12 / 12	kJ/m <sup>2</sup>	
-40°C	11 / 11	kJ/m <sup>2</sup>	
悬臂梁缺口冲击强度			ISO 180/1A
23°C	14 / 16	kJ/m <sup>2</sup>	
-30°C	12 / 11	kJ/m <sup>2</sup>	
-40°C	11 / 11	kJ/m <sup>2</sup>	
无缺口悬臂梁冲击强度			ISO 180/1U
23°C	105 / 90	kJ/m <sup>2</sup>	
-30°C	105 / 65	kJ/m <sup>2</sup>	
洛氏硬度	105 / 90	-	ISO 2039-2
洛氏硬度, Rockwell	125 / 118	-	ISO 2039-2
热性能	干态/调节后	单位	测试标准
熔融温度, 10°C/min	262 / *	°C	ISO 11357-1/-3
玻璃化转变温度, 10°C/min	80 / -	°C	ISO 11357-1/-2
热变形温度			ISO 75-1/-2
1.80 MPa	255 / *	°C	
0.45 MPa	262 / *	°C	
维卡软化温度, 50°C/h 50N	255 / *	°C	ISO 306
线膨胀系数, 平行	15 / *	E-6/K	ISO 11359-1/-2

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Page: 1 of 23

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线膨胀系数			ISO 11359-1/-2
垂直	79 / *	E-6/K	
垂直, -40-23°C	61 / *	E-6/K	
垂直, 55-160°C	130 / *	E-6/K	
平行, -40-23°C	20 / *	E-6/K	
平行, 55-160°C	9 / *	E-6/K	
熔体	0.25	W/(m K)	-
熔体的比热	2050	J/(kg K)	-
有效导热率 <sup>a</sup>	9.5E-8	m <sup>2</sup> /s	-
相对温度指数, 电气性能			UL 746B
0.75mm	130 / *	°C	
1.5mm	130 / *	°C	
3mm	130	°C	
相对温度指数, 冲击性能			UL 746B
0.75mm	120	°C	
1.5mm	120 / *	°C	
3mm	120	°C	
相对温度指数, 强度			UL 746B
0.75mm	130	°C	
1.5mm	130 / *	°C	
3mm	130	°C	
<b>燃烧性能</b>	<b>干态/调节后</b>	<b>单位</b>	<b>测试标准</b>
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	0.71 / *	mm	IEC 60695-11-10
UL注册	yes / *	-	UL 94
燃烧性 - 氧指数	23 / *	%	ISO 4589-1/-2
灼热丝可燃指数			IEC 60695-2-12
0.75mm	650 / -	°C	
1.5mm	650 / -	°C	
3mm	825 / -	°C	
灼热丝起燃温度			IEC 60695-2-13
0.75mm	675 / -	°C	
1.5mm	675 / -	°C	
3mm	700 / -	°C	
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	27	mm/min	ISO 3795 (FMVSS 302)
<b>电性能</b>	<b>干态/调节后</b>	<b>单位</b>	<b>测试标准</b>
相对介电常数.			IEC 62631-2-1
100Hz	4.5 / -	-	
1MHz	4.1 / 4.9	-	
介质损耗因子			IEC 62631-2-1
100Hz	100 / -	E-4	
1MHz	145 / 600	E-4	
体积电阻率	>1E13 / 1E10	Ohm*m	IEC 62631-3-1
表面电阻率	* / 1E12	Ohm	IEC 62631-3-2
介电强度	27 / -	kV/mm	IEC 60243-1
介电强度, 短期	27 / -	kV/mm	IEC 60243-1
<b>其它性能</b>	<b>干态/调节后</b>	<b>单位</b>	<b>测试标准</b>
吸湿性, 2mm	1.5 / *	%	类似ISO 62
吸水性, 2mm	4.7 / *	%	类似ISO 62
密度	1490 / -	kg/m <sup>3</sup>	ISO 1183
熔体密度	1290	kg/m <sup>3</sup>	-
吸水性, 浸泡 24小时	0.9 / *	%	类似ISO 62

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Page: 2 of 23

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注塑	干态/调节后	单位	测试标准
建议干燥	是	-	-
干燥温度	≥ 80	°C	-
干燥时间, 除湿干燥机	2 - 4	h	-
加工前水分含量	≤ 0.2	%	-
最优熔体温度	295	°C	-
注塑 熔体温度	285	°C	-
注塑 熔体温度	305	°C	-
螺杆最大切线速度	0.2 / *	m/s	-
最优模具温度	100	°C	-
模具温度	70	°C	-
模具温度	120	°C	-
保压范围	50 - 100	MPa	-
保压时间	3	s/mm	-
喷射温度	210	°C	-

典型数据			
加工方法	• 注塑		
供货形式	• 粒料		
添加剂	• 润滑剂	• 脱模助剂	
地区供应	• 北美	• 亚太	• 中东/非洲
	• 欧洲	• 中南美洲	• Global

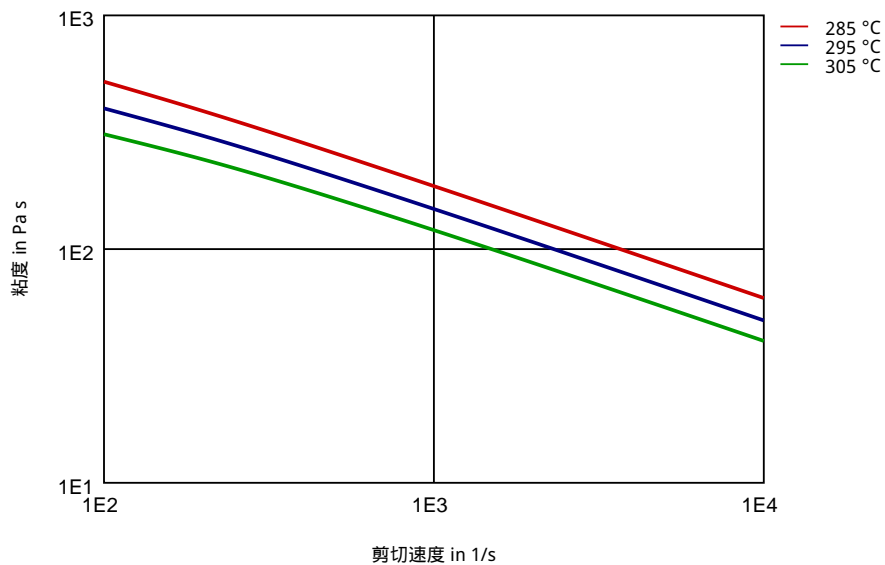


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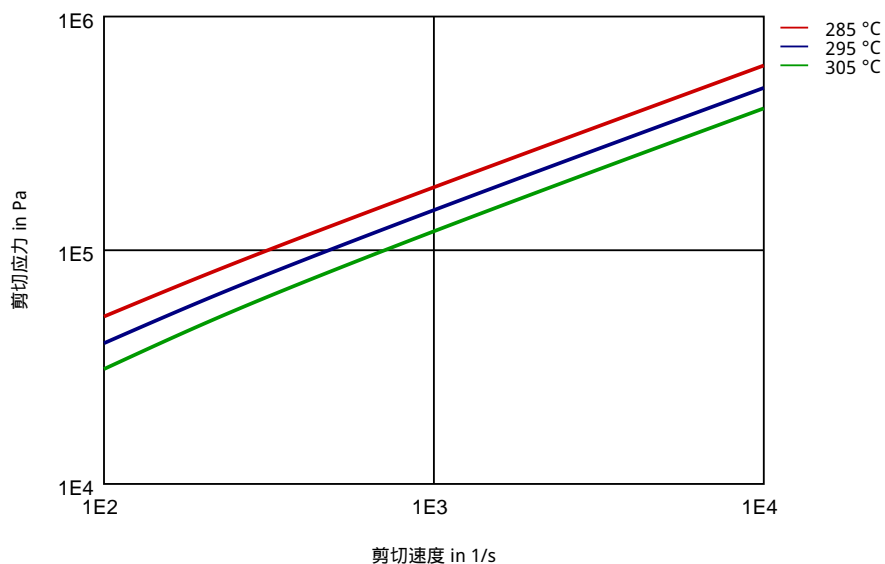
## NYLON RESIN

图表

粘度 - 剪切速度



剪切应力 - 剪切速度



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Page: 4 of 23

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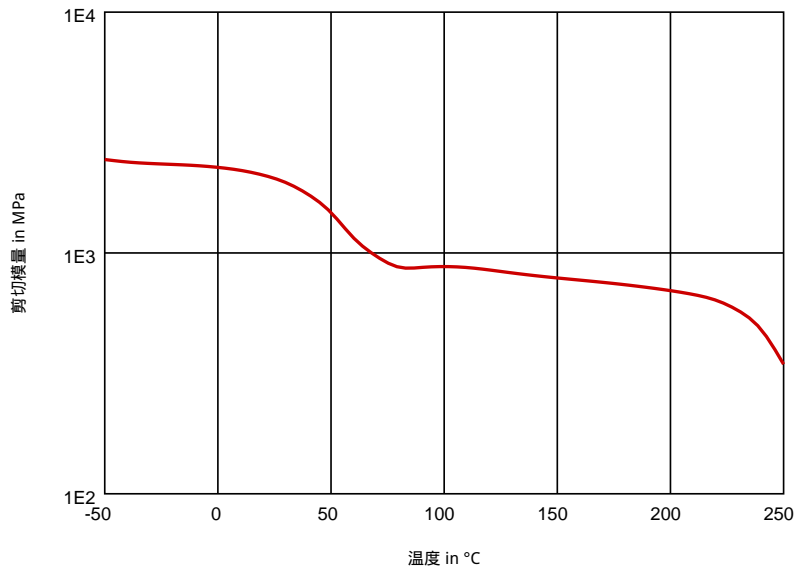


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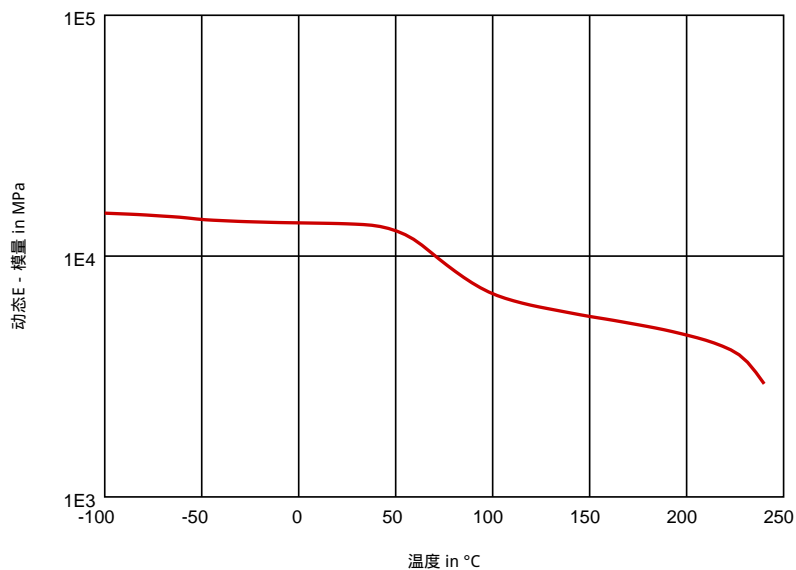
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## NYLON RESIN

### 动态剪切模量 - 温度 (干)



### 动态E - 模量 - 温度 (干)



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Page: 5 of 23

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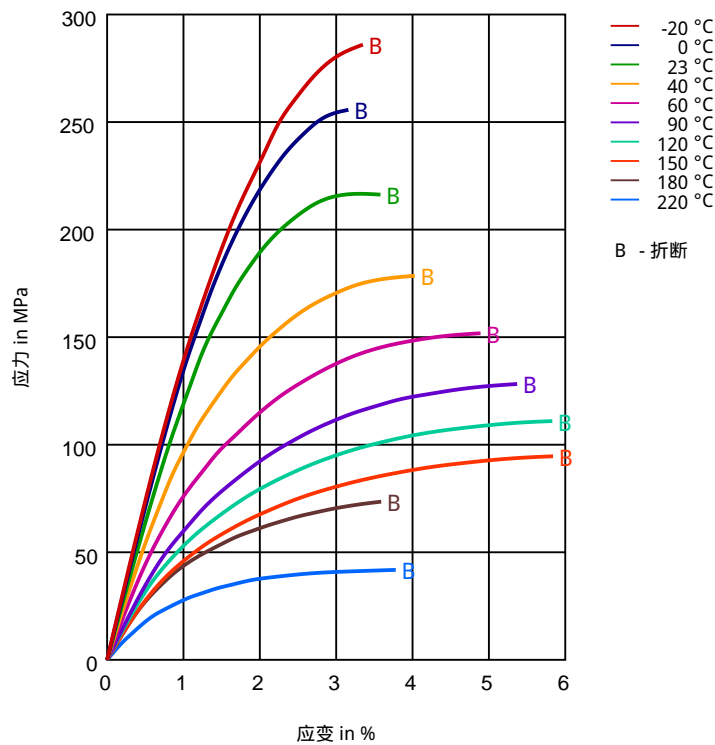
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NYLON RESIN

应力 - 应变. (干)



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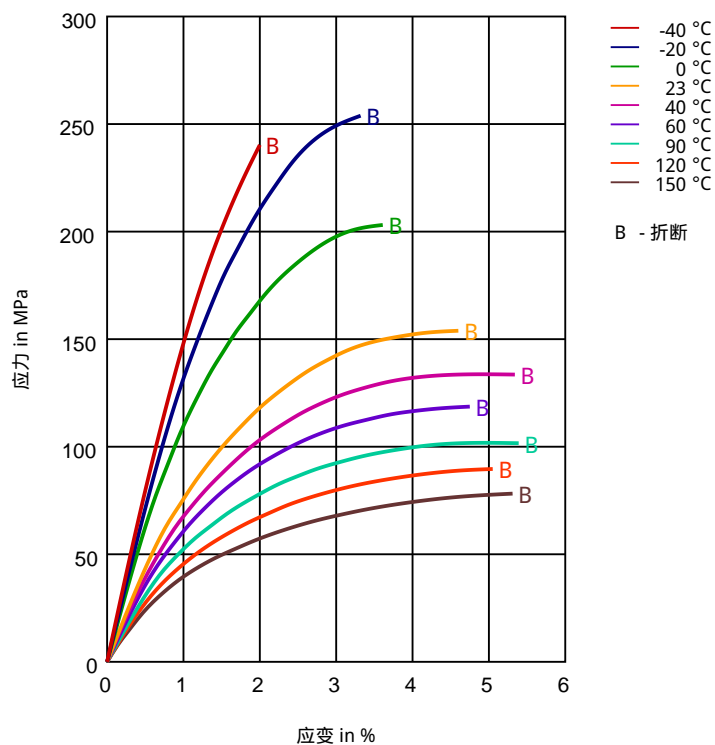
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## NYLON RESIN

应力 - 应变. (湿)



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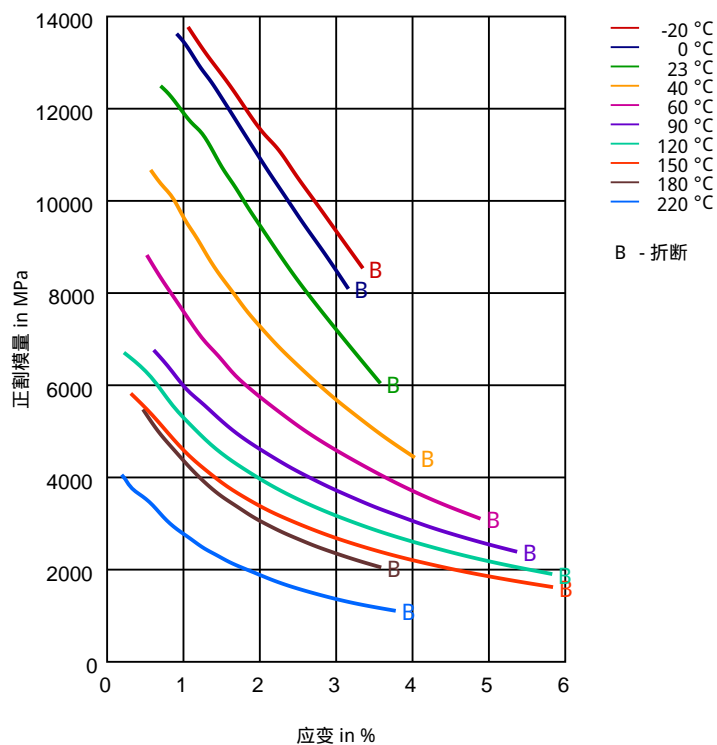
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# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

正割模量 - 应变. (干)



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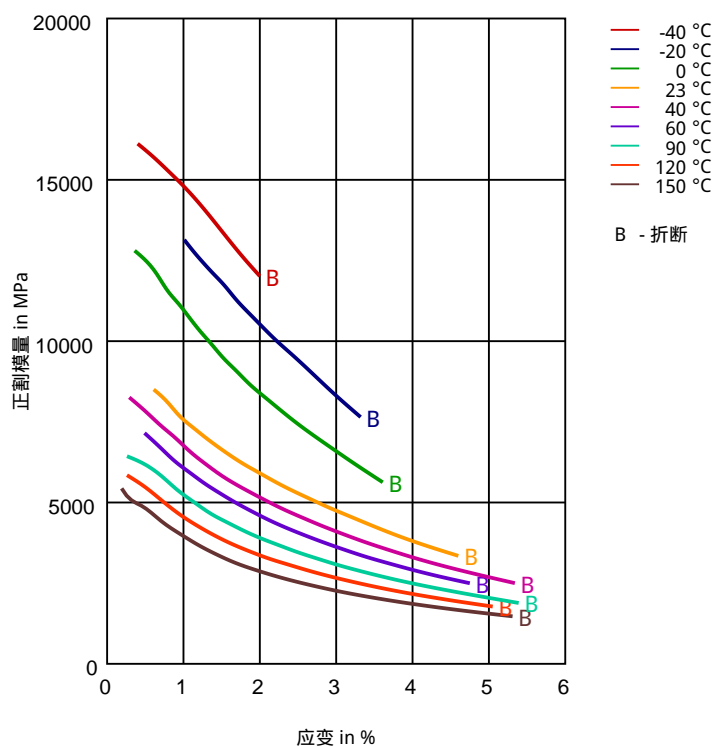




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## NYLON RESIN

正割模量 - 应变. (湿)



修订：2018-03-27

Page: 9 of 23

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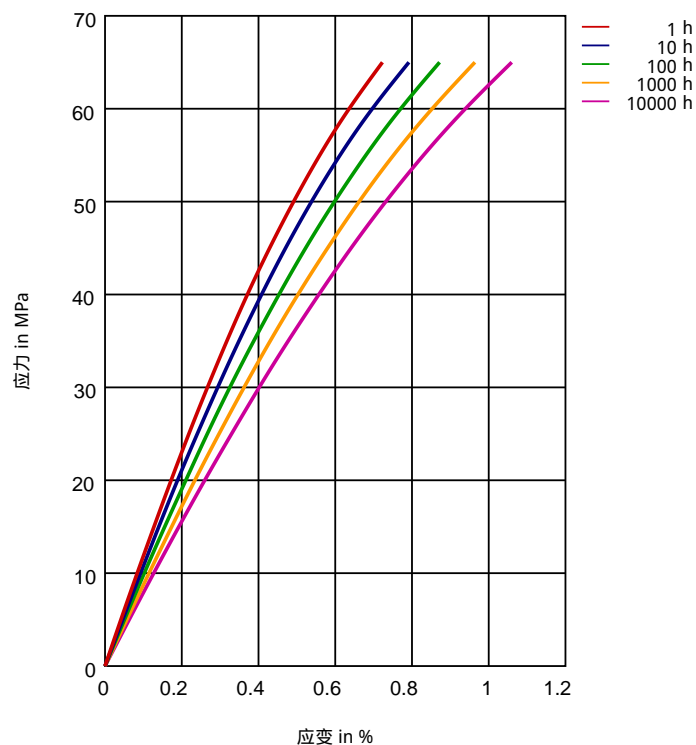
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# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

应力 - 应变(等时的) 23°C(湿)



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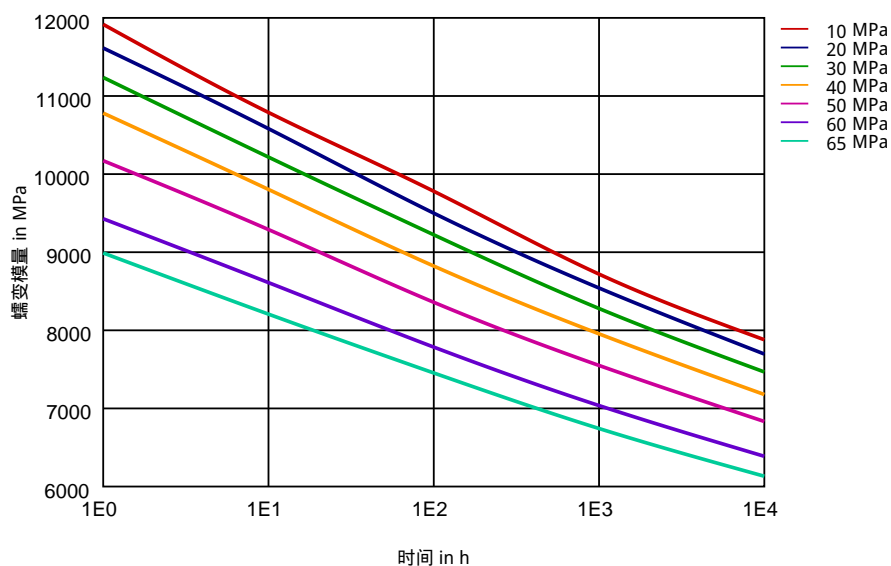
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## NYLON RESIN

蠕变模量 - 时间, 23°C(湿)



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Page: 11 of 23

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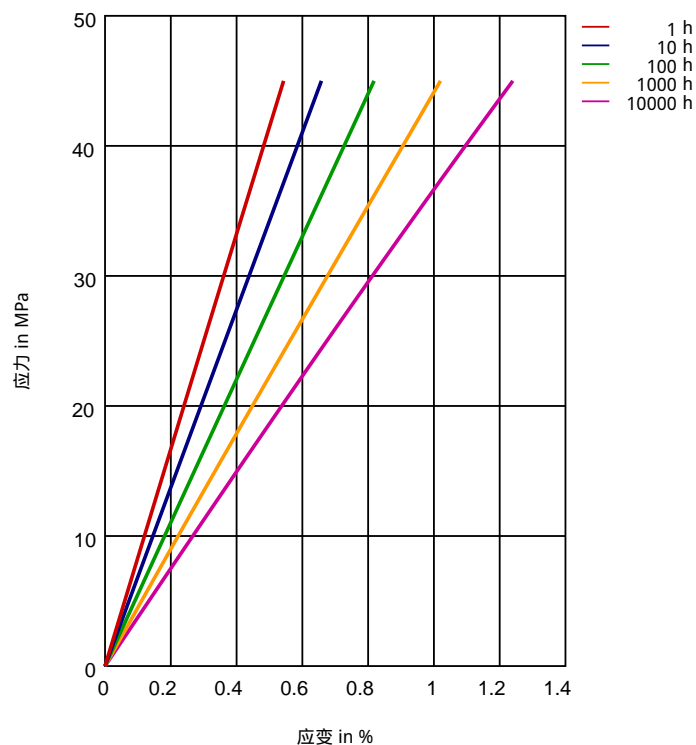


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# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

应力 - 应变(等时的) 60°C(湿)



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Page: 12 of 23

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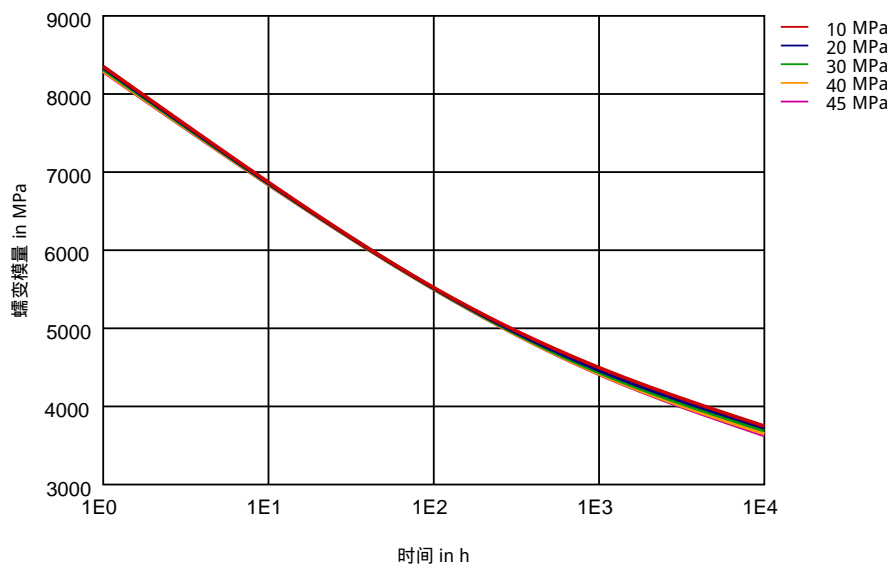


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## NYLON RESIN

蠕变模量 - 时间. 60°C(湿)



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Page: 13 of 23

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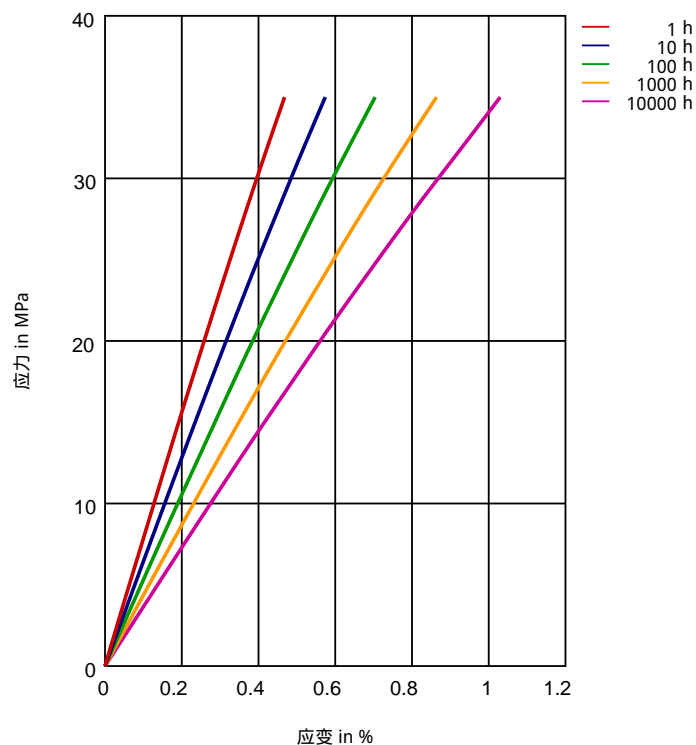


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# DuPont™ Zytel® 70G43L NC010

NYLON RESIN

应力 - 应变(等时的) 90°C(湿)



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Page: 14 of 23

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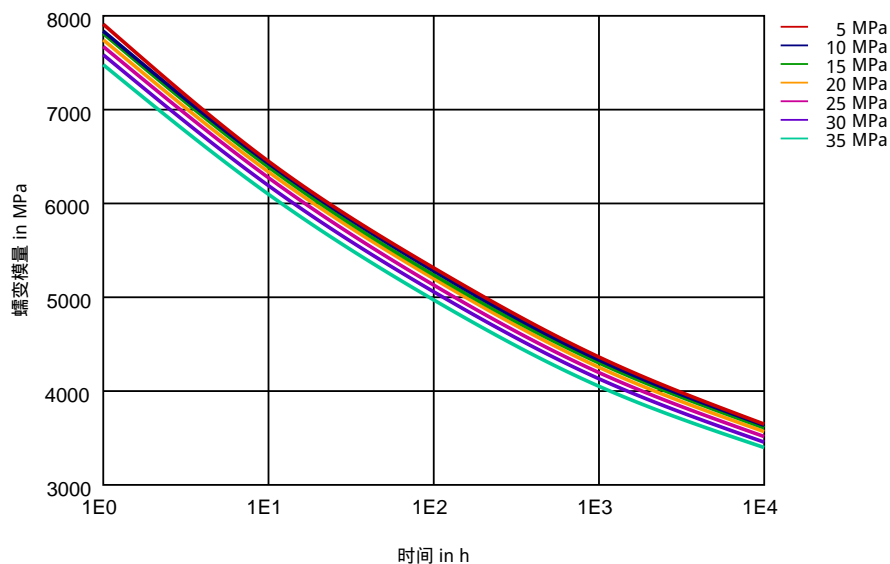


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## NYLON RESIN

蠕变模量 - 时间. 90°C(湿)



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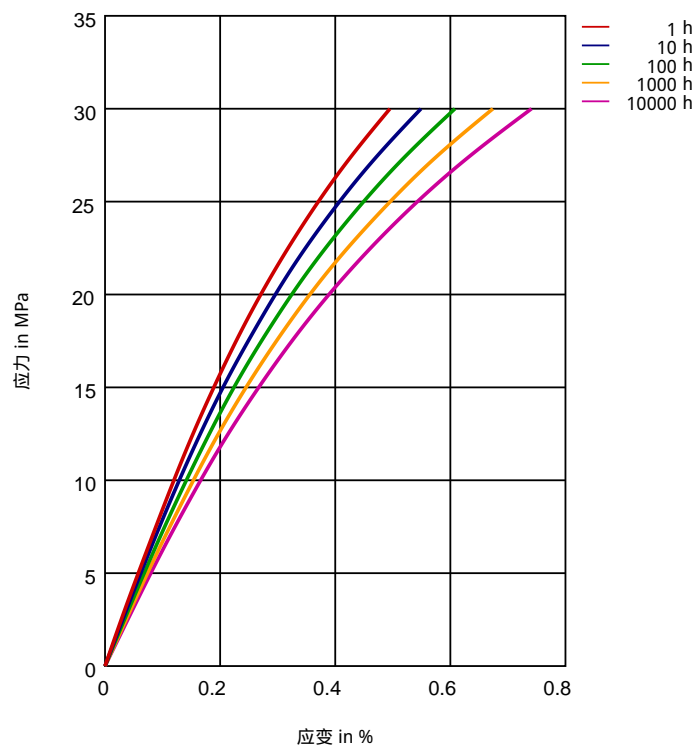


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NYLON RESIN

应力 - 应变(等时的) 100°C(湿)



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Page: 16 of 23

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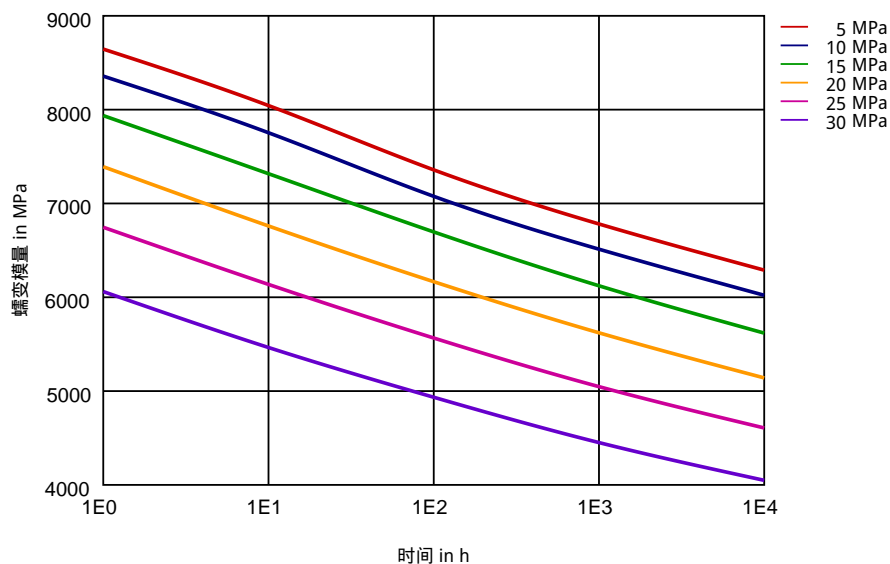
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## NYLON RESIN

蠕变模量 - 时间, 100°C(湿)



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Page: 17 of 23

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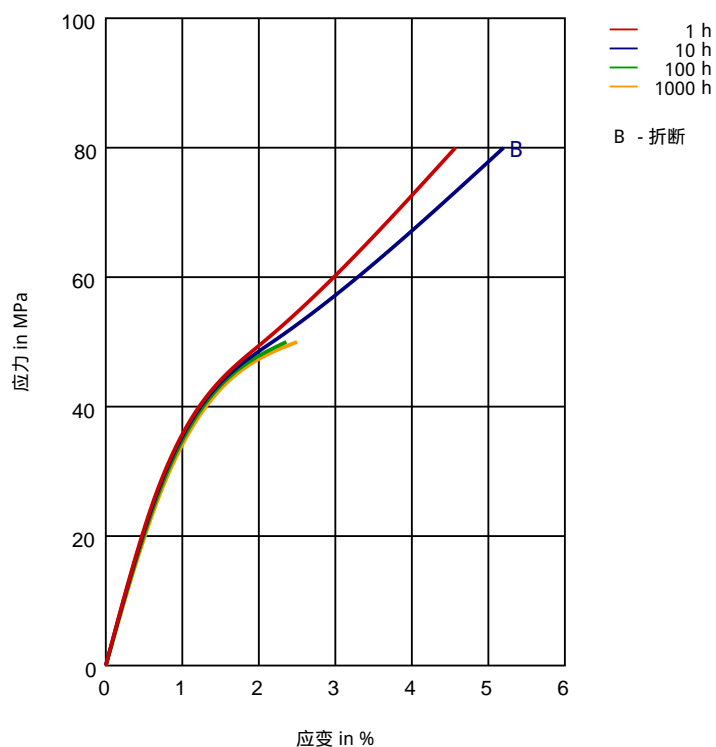


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应力 - 应变(等时的) 150°C(湿)



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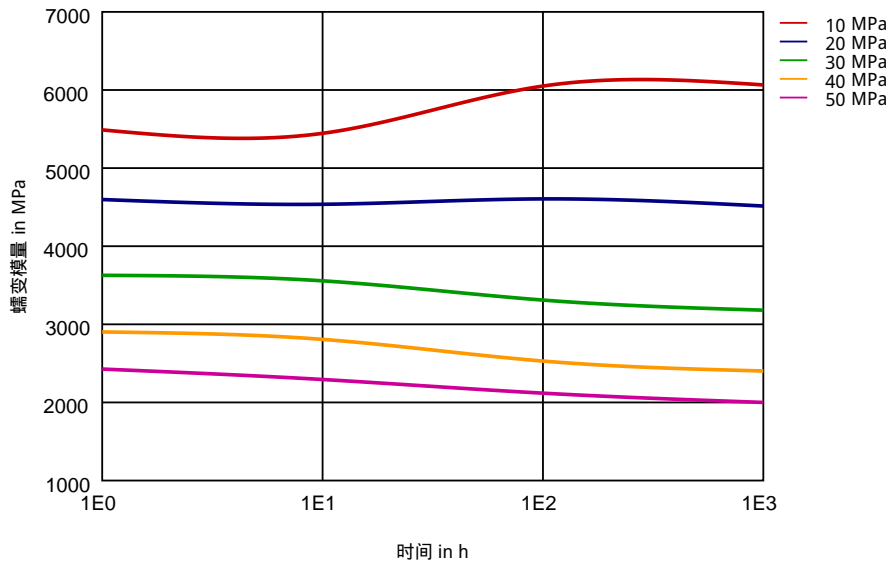
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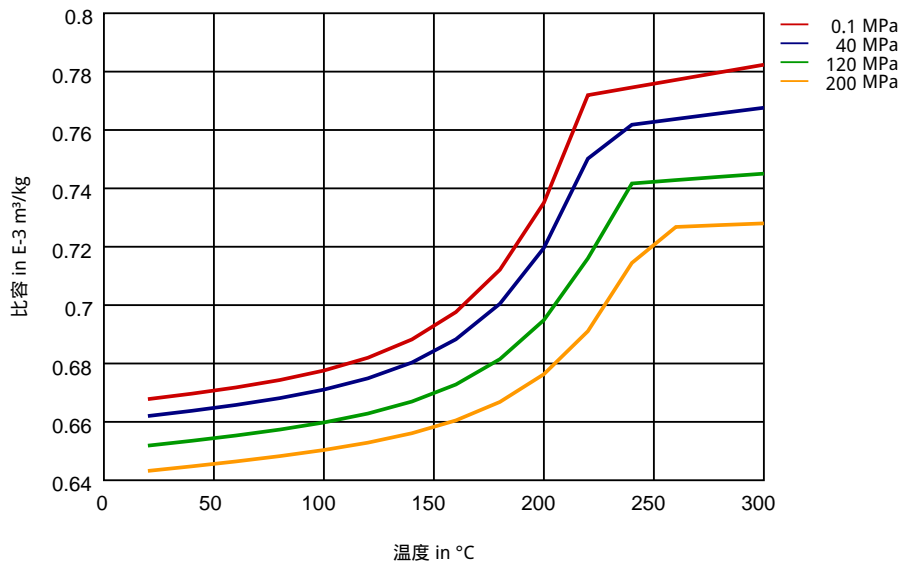
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蠕变模量 - 时间. 150°C(湿)



比容 - 温度(pvT)



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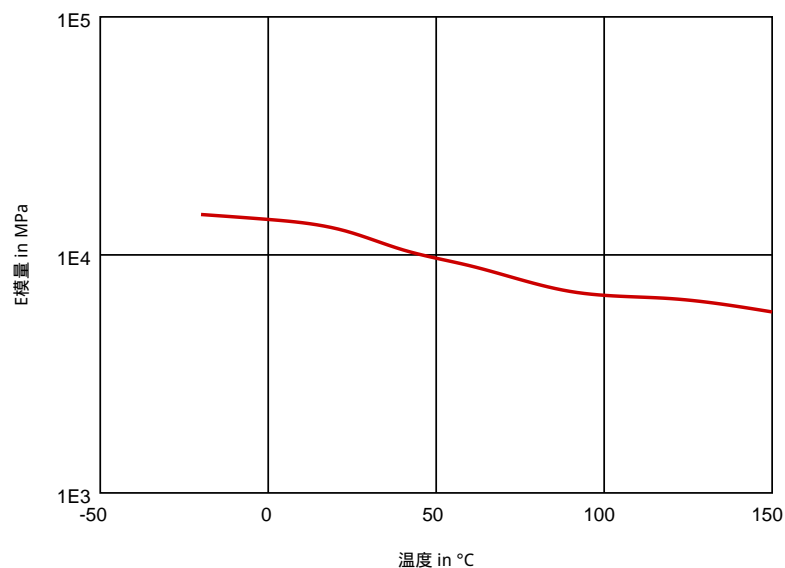
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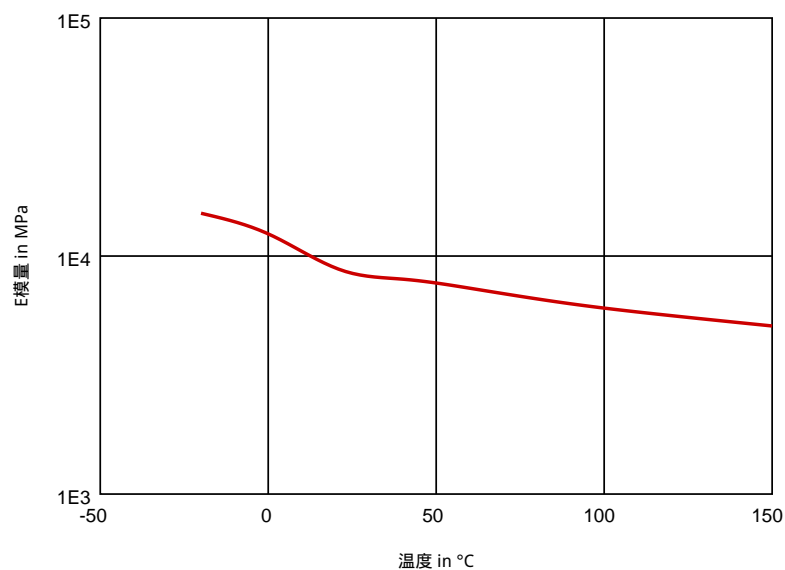
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## NYLON RESIN

拉伸模量 - 温度(干)



拉伸模量 - 温度(湿)



# DuPont™ Zytel® 70G43L NC010

## NYLON 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)
- ✗ 盐酸 (36g/100g) (23°C)
- ✗ 硝酸 (40g/100g) (23°C)
- ✗ 硫酸 (38g/100g) (23°C)
- ✗ 硫酸 (5g/100g) (23°C)
- ✗ 铬酸溶液 (40g/100g) (23°C)

#### 碱类

- ✗ 氢氧化钠溶液 (35g/100g) (23°C)
- ✓ 氢氧化钠溶液 (1g/100g) (23°C)
- ✓ 氨水(氢氧化铵) (10g/100g) (23°C)

#### 醇类

- ✓ 异丙醇 (23°C)
- ✓ 甲醇 (23°C)
- ✓ 乙醇 (23°C)

#### 碳氢化合物

- ✓ n-乙烷 (23°C)
- ✓ 甲苯 (23°C)
- ✓ 异辛烷 (23°C)

#### 酮类

- ✓ 丙酮 (23°C)

#### 醚类

- ✓ (二)乙醚 (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)

#### 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)

修订：2018-03-27

Page: 21 of 23

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

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# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

- ✓ 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)

### 盐溶液

- ✓ 氯化钠溶液(10g/100g) (23°C)
- ✗ 次氯化钠溶液 (10g/100g) (23°C)
- ✓ 碳酸钠溶液 (20g/100g) (23°C)
- ✓ 碳酸钠溶液 (2g/100g) (23°C)
- ✗ 氯化锌溶液 (50g/100g) (23°C)

### 其它

- ✓ 乙酸乙酯 (23°C)
- ✗ 过氧化氢 (23°C)
- ✓ DOT4号刹车油 (130°C)
- ✓ 乙二醇水溶液 (50g/100g) (108°C)
- ✓ 1g/100g 基苯氧-聚环氧乙烷乙烯水溶液 (23°C)
- ✓ 油酸 (50g/100g) + 橄榄油 (50g/100g) (23°C)
- ✓ 水 (23°C)
- ✓ 去离子水 (90°C)
- ✗ 酚溶液(5g/100g) (23°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).

✗ 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、干燥等相关信息。除非特别指定，ISO机械性能测试样条厚度为4mm英寸（Hytre® 2mm英寸），IEC电性能测试样品厚度为2mm英寸，所有的ASTM性能测试样条厚度为3.2mm英寸，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。

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警告：不要用于涉及永久植入人体的医疗应用。



# DuPont™ Zytel® 70G43L NC010

## NYLON RESIN

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.

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