



Zytel® 79G13L NC010

NYLON RESIN

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-31kJ/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、运动器材和建筑业。

Zytel® 79G13L NC010是一种13% 玻纤增强, 增韧, 尼龙66

总说明

树脂鉴别	PA66-IGF13	ISO 1043
制品标识码	>PA66-IGF13<	ISO 11469
ISO名称	ISO 16396-PA66-I,GF13,M1GNR,S14-050	

流变性能

	dry/cond.		
粘数.	160/*	cm ³ /g	ISO 307, 1157, 1628
模塑收缩率, 平行	0.4/-	%	ISO 294-4, 2577
模塑收缩率, 垂直	0.8/-	%	ISO 294-4, 2577

机械性能

	dry/cond.		
拉伸模量	5100/3700	MPa	ISO 527-1/-2
断裂应力	118/67	MPa	ISO 527-1/-2
断裂伸长率	4/10	%	ISO 527-1/-2
弯曲模量	4700/-	MPa	ISO 178
弯曲强度	160/-	MPa	ISO 178
拉伸蠕变模量, 1h	*/4030	MPa	ISO 899-1
拉伸蠕变模量, 1000h	*/3180	MPa	ISO 899-1
简支梁无缺口冲击强度, +23°C	67/59	kJ/m ²	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	59/54	kJ/m ²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	8/14	kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	6/6	kJ/m ²	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	8/9	kJ/m ²	ISO 180/1A
悬臂梁缺口冲击强度, -30°C	6/4	kJ/m ²	ISO 180/1A
洛氏硬度	90/74	-	ISO 2039-2
洛氏硬度, Rockwell	120/110	-	ISO 2039-2
球压痕硬度	180/100	MPa	ISO 2039-1
Poisson's ratio	0.35/0.36	-	

Zytel® 79G13L NC010

NYLON RESIN

热性能

	dry/cond.		
熔融温度, 10°C/min	263/*	°C	ISO 11357-1/-3
热变形温度, 1.80 MPa	242/*	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	260/*	°C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	240/*	°C	ISO 306
线膨胀系数, 平行	50/*	E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直	130/*	E-6/K	ISO 11359-1/-2
熔体	0.18	W/(m K)	
有效导热率 ^a	7.0E-8	m ² /s	
熔体的比热	2140	J/(kg K)	
相对温度指数, 电气性能, 1.5mm	90	°C	UL 746B
相对温度指数, 电气性能, 3mm	90	°C	UL 746B
相对温度指数, 冲击, 1.5mm	65	°C	UL 746B
相对温度指数, 冲击, 3mm	65	°C	UL 746B
相对温度指数, 强度, 1.5mm	90/*	°C	UL 746B
相对温度指数, 强度, 3mm	90	°C	UL 746B

燃烧性能

	dry/cond.		
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	0.75/*	mm	IEC 60695-11-10
UL注册	yes/*	-	UL 94
灼热丝燃烧指数, 1mm	650/-	°C	IEC 60695-2-12
灼热丝燃烧指数, 2mm	650/-	°C	IEC 60695-2-12
灼热丝燃烧指数, 3mm	650/-	°C	IEC 60695-2-12
灼热丝起燃温度, 1mm	650/-	°C	IEC 60695-2-13
灼热丝起燃温度, 2mm	650/-	°C	IEC 60695-2-13
灼热丝起燃温度, 3mm	650/-	°C	IEC 60695-2-13
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	19	mm/min	ISO 3795 (FMVSS 302)

电性能

	dry/cond.		
相对介电常数., 100Hz	3.9/9.8	-	IEC 62631-2-1
相对介电常数., 1MHz	3.7/4.5	-	IEC 62631-2-1
介质损耗因子, 100Hz	65/2500	E-4	IEC 62631-2-1
介质损耗因子, 1MHz	130/660	E-4	IEC 62631-2-1
体积电阻率	-/1E12	Ohm.m	IEC 62631-3-1
表面电阻率	*/1E14	Ohm	IEC 62631-3-2
介电强度	37/35	kV/mm	IEC 60243-1
相对漏电起痕指数	475/-	-	IEC 60112

Zytel® 79G13L NC010

NYLON RESIN

其它性能

	dry/cond.		
吸湿性, 2mm	2.2/*	%	类似ISO 62
吸水性, 2mm	6.5/*	%	类似ISO 62
密度	1210/-	kg/m ³	ISO 1183
熔体密度	1030	kg/m ³	

VDA性能

	dry/cond.		
有机化合物的排放	13	□ gC/g	VDA 277
气味测试	4	class	VDA 270
雾化	0.3/*	mg	ISO 6452

注塑

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	80 °C
模具温度	50 °C
模具温度	100 °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

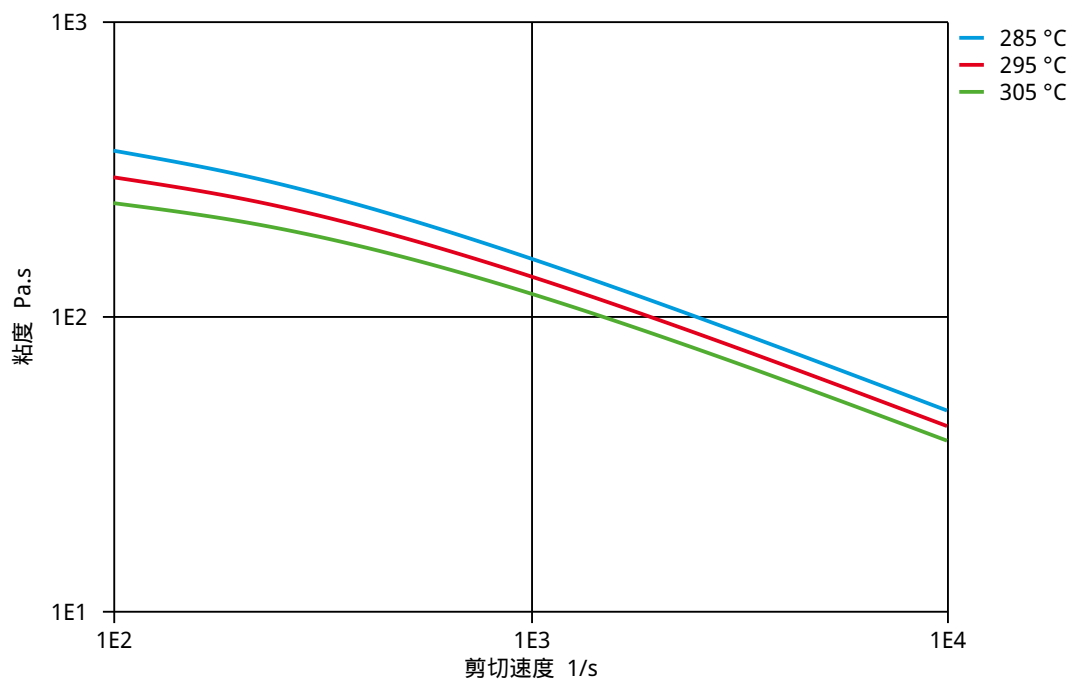
添加剂	脱模助剂
-----	------



Zytel® 79G13L NC010

NYLON RESIN

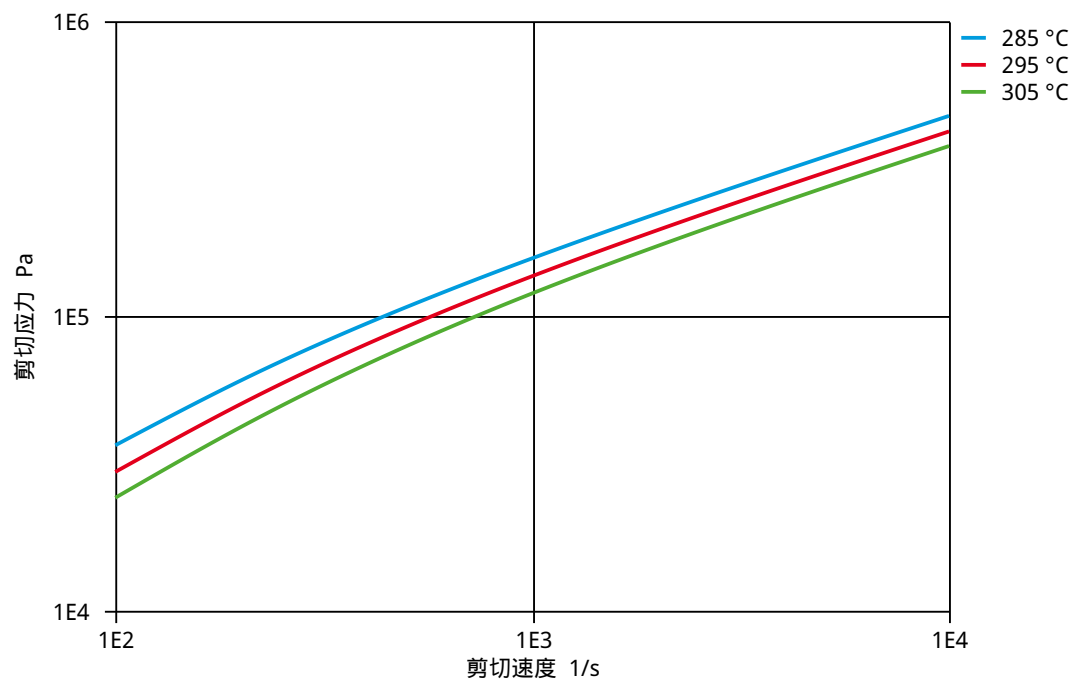
粘度 - 剪切速度



Zytel[®] 79G13L NC010

NYLON RESIN

剪切应力 - 剪切速度

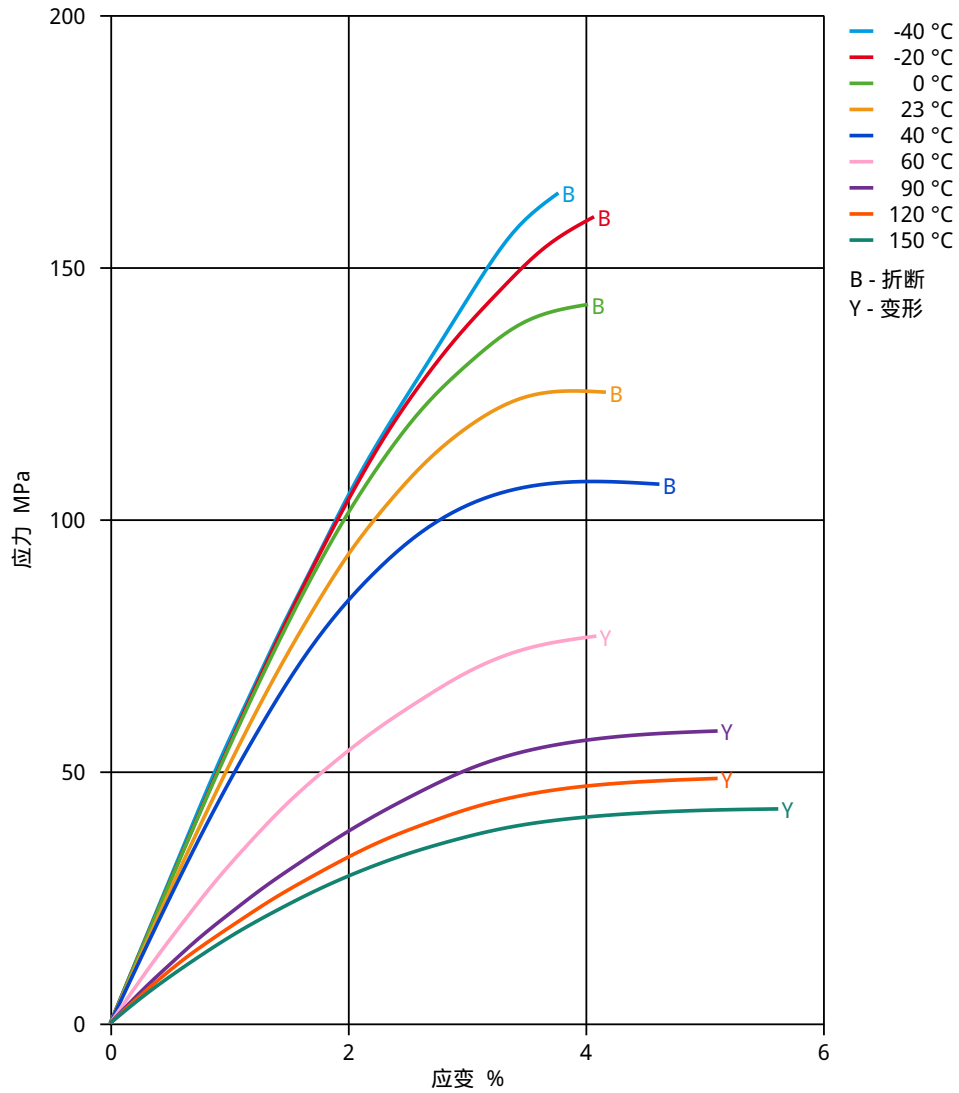




Zytel® 79G13L NC010

NYLON RESIN

应力 - 应变. (dry)

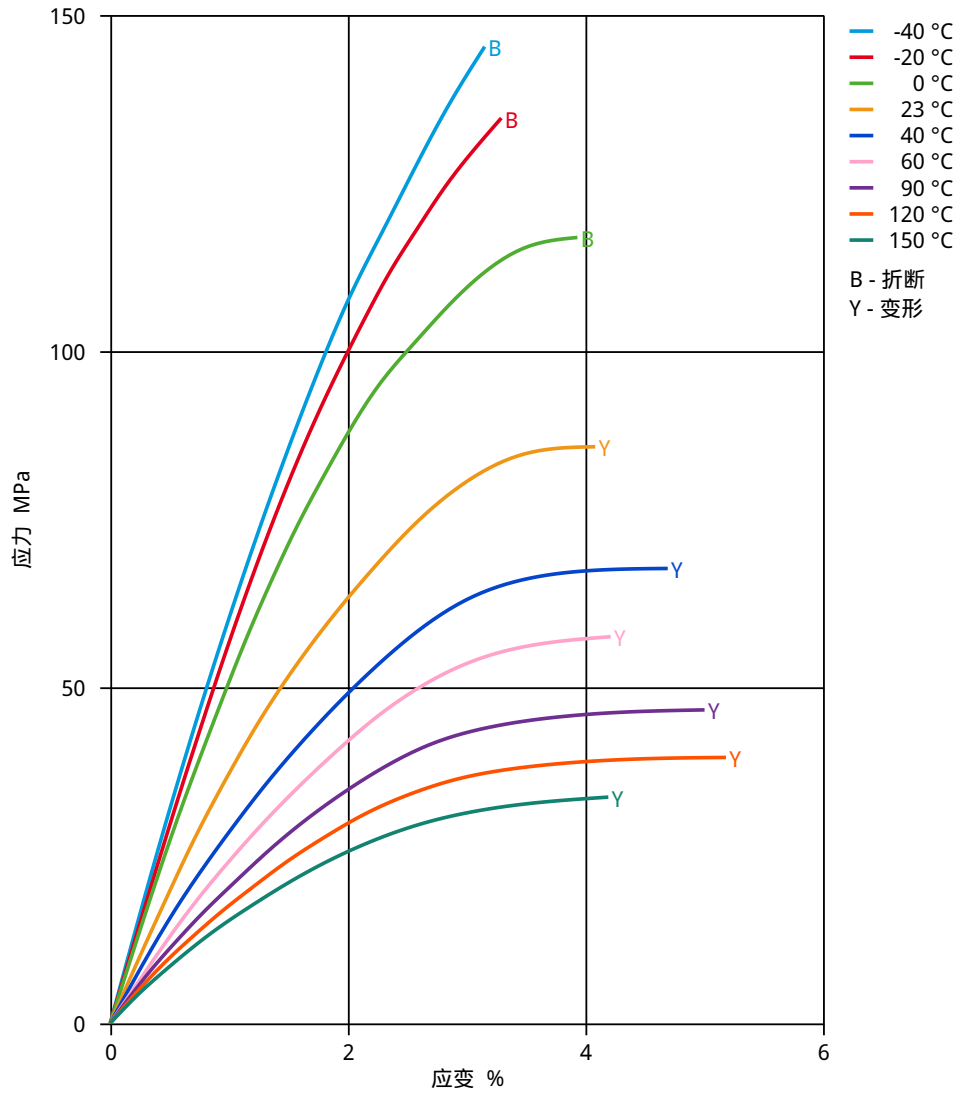




Zytel® 79G13L NC010

NYLON RESIN

应力 - 应变. (cond.)

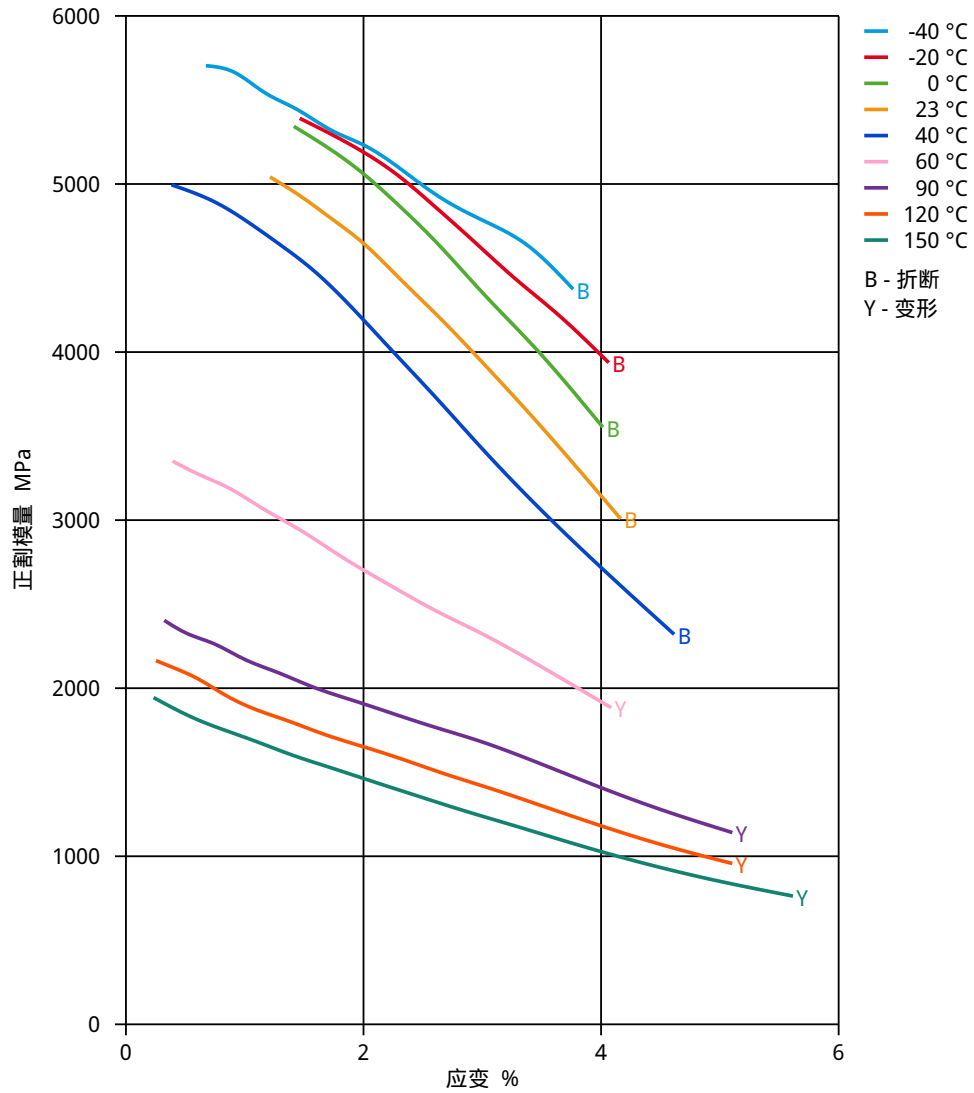




Zytel® 79G13L NC010

NYLON RESIN

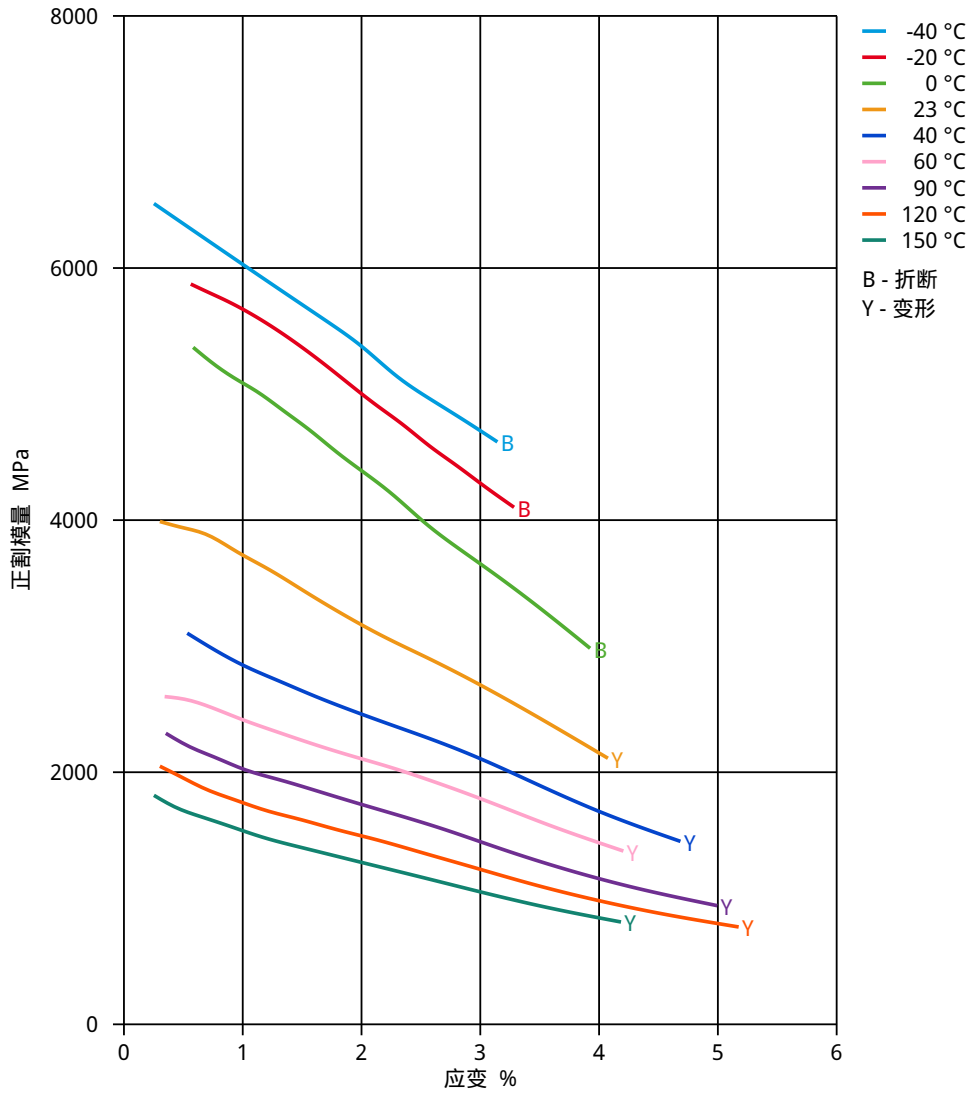
正割模量 - 应变. (dry)



Zytel® 79G13L NC010

NYLON RESIN

正割模量 - 应变. (cond.)

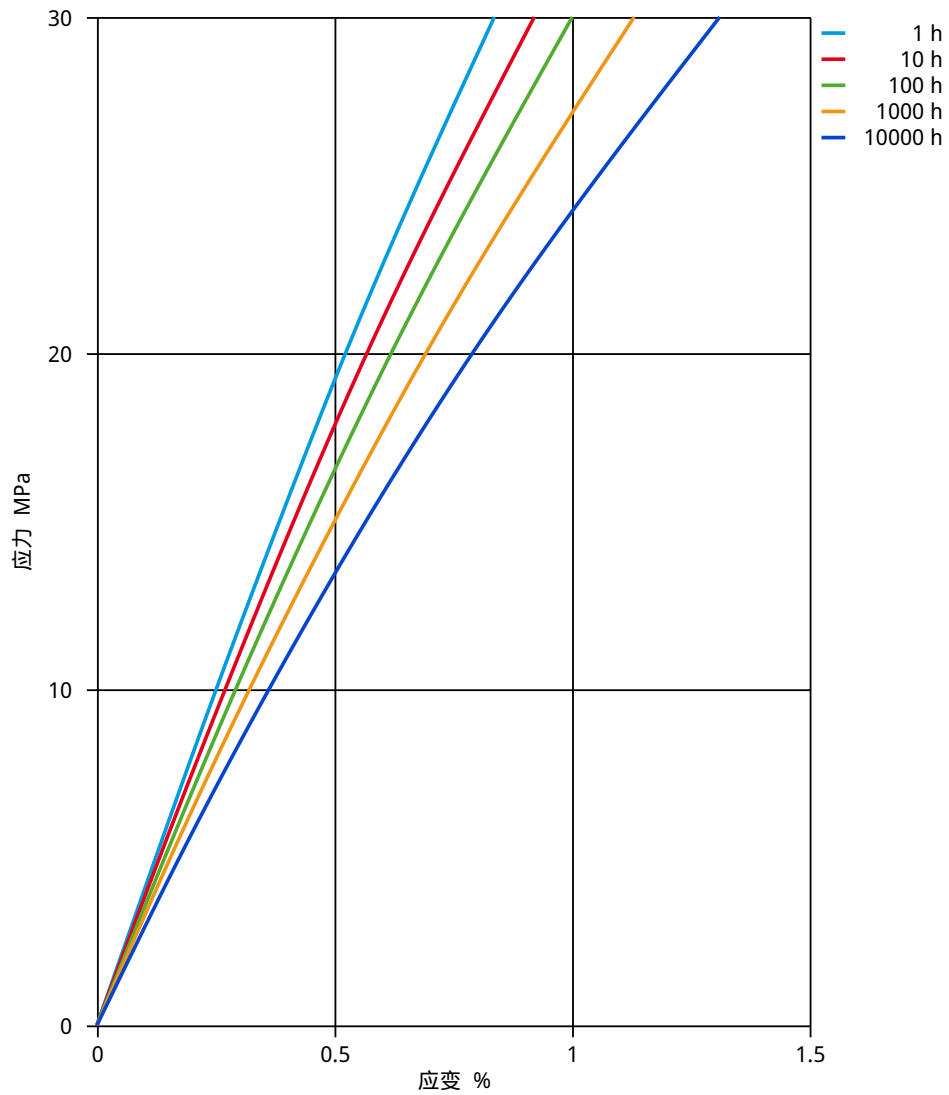




Zytel® 79G13L NC010

NYLON RESIN

应力 - 应变(等时的) 23°C (cond.)

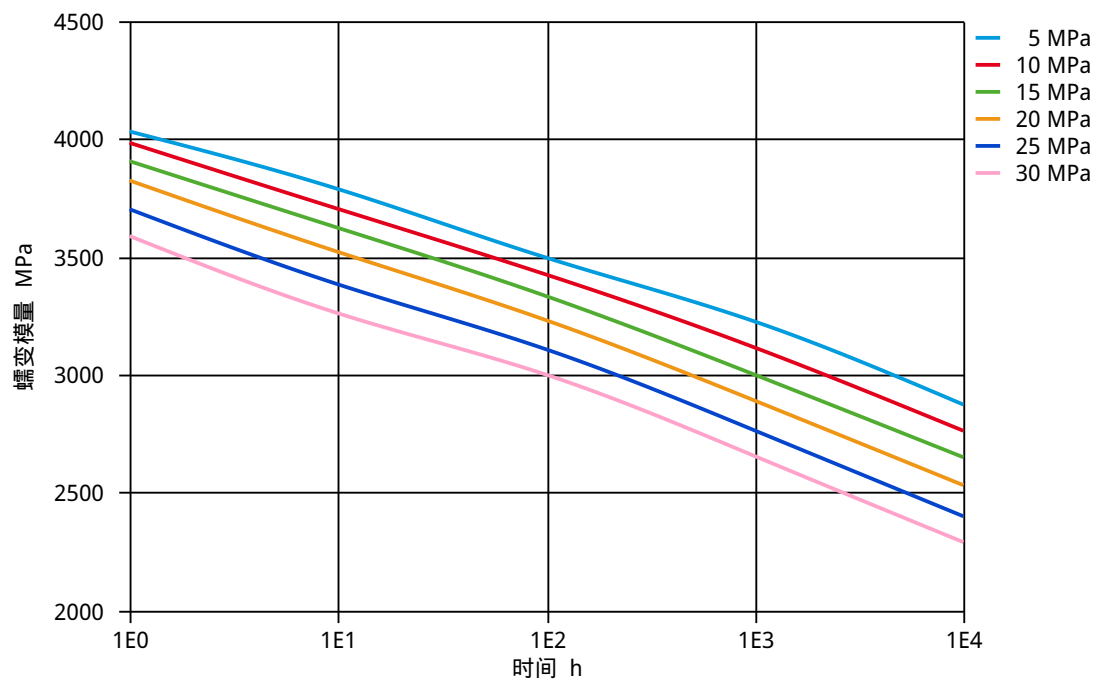




Zytel® 79G13L NC010

NYLON RESIN

蠕变模量 - 时间. 23°C (cond.)

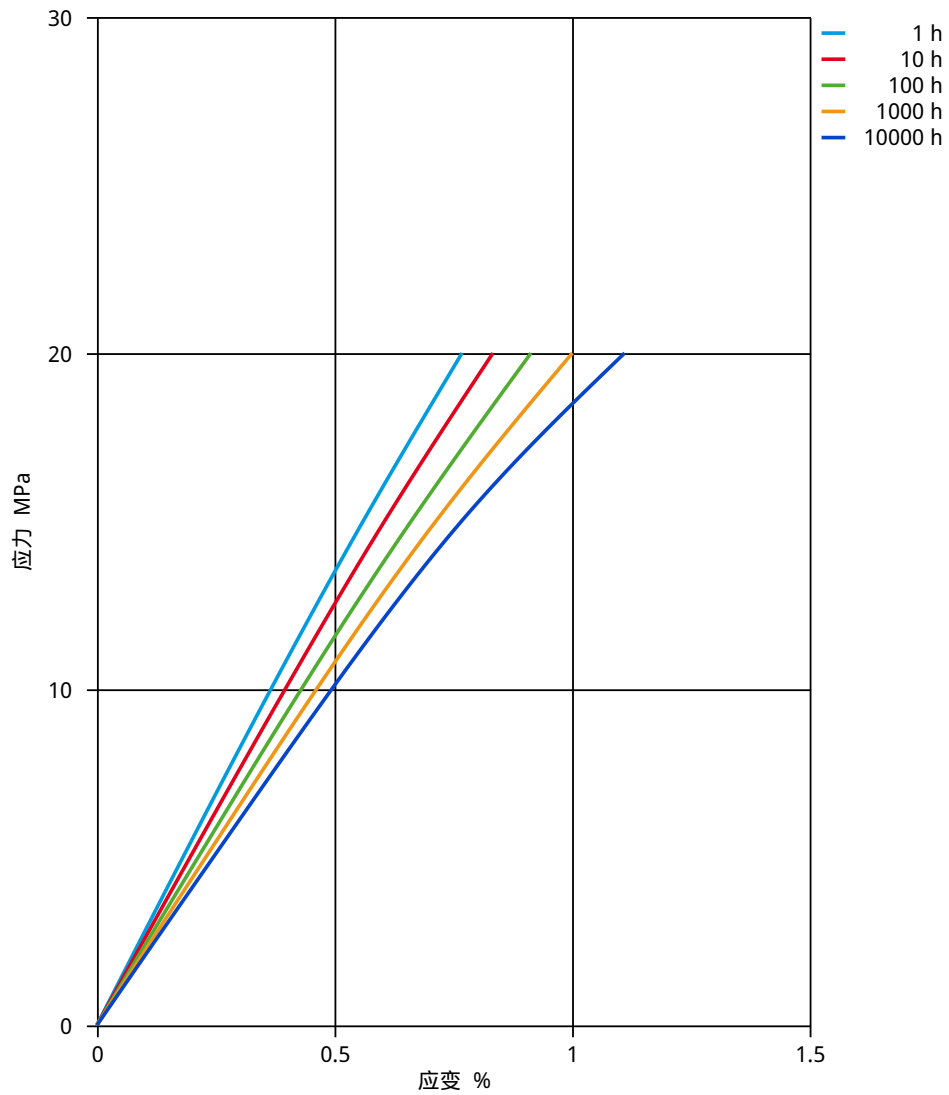




Zytel® 79G13L NC010

NYLON RESIN

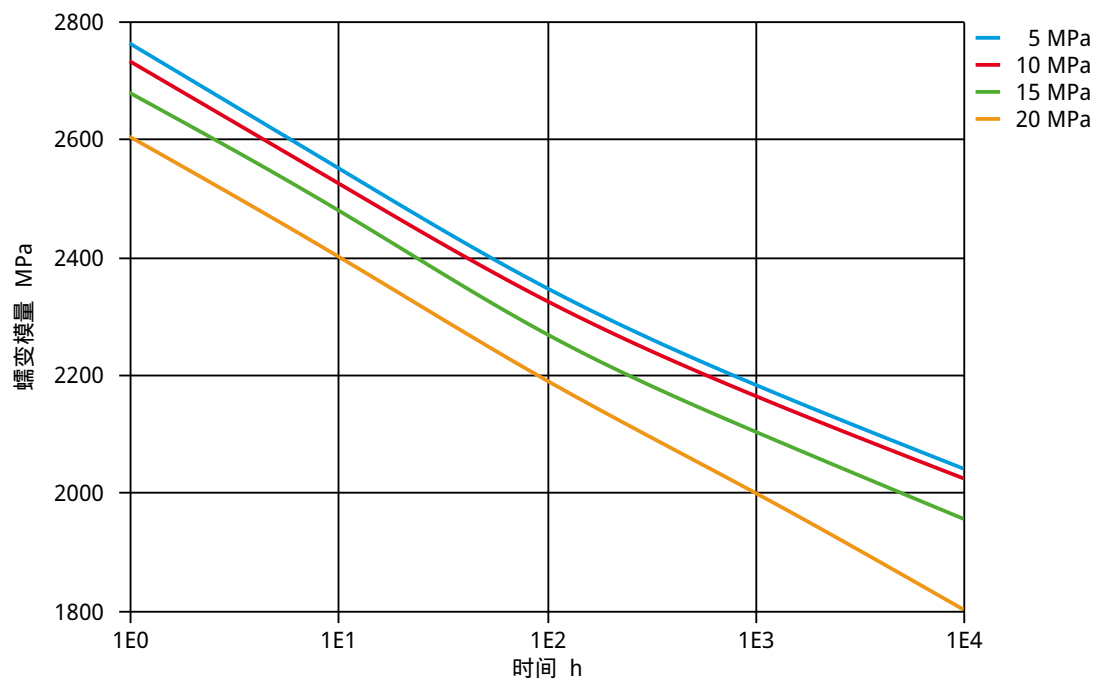
应力 - 应变(等时的) 80°C (cond.)



Zytel® 79G13L NC010

NYLON RESIN

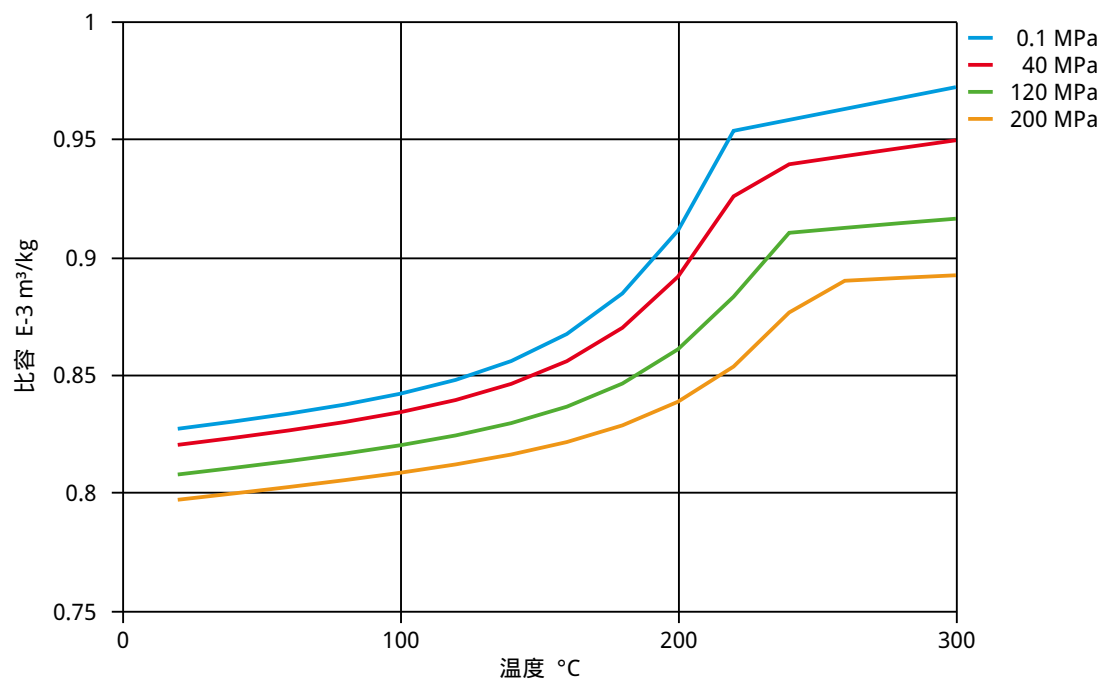
蠕变模量 - 时间. 80°C (cond.)



Zytel® 79G13L NC010

NYLON RESIN

比容 - 温度(pvT)

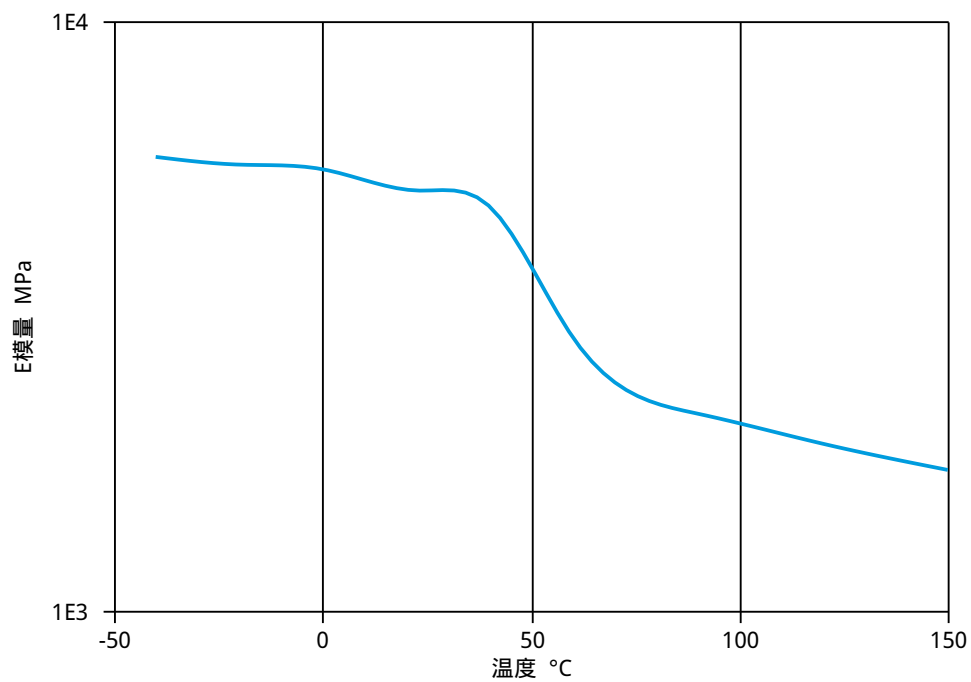




Zytel® 79G13L NC010

NYLON RESIN

拉伸模量 - 温度 (dry)

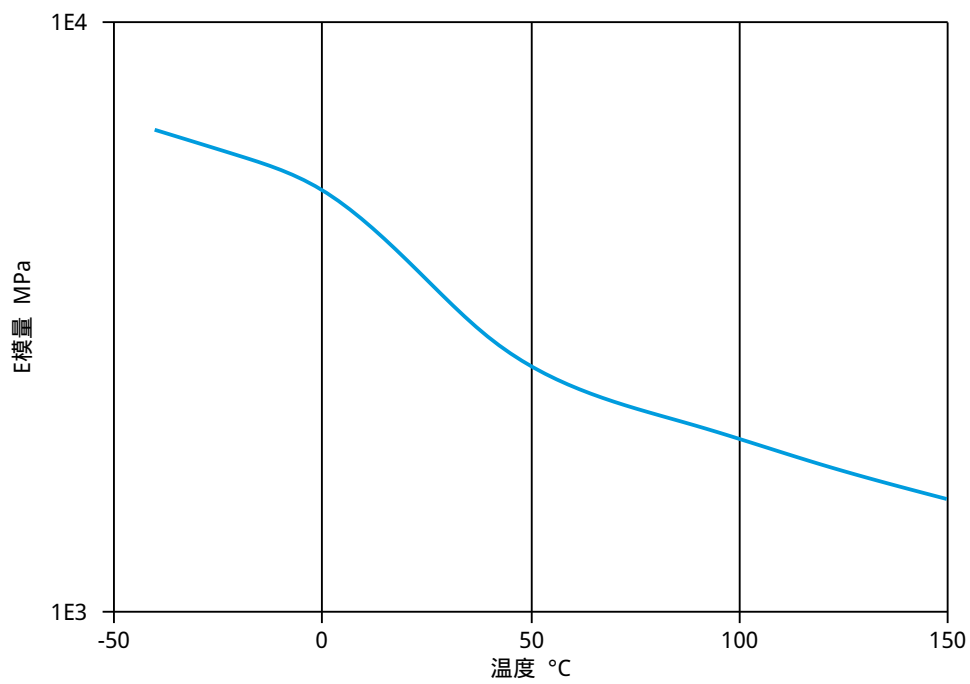




Zytel® 79G13L NC010

NYLON RESIN

拉伸模量 - 温度 (cond.)



Zytel® 79G13L 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
- ✓ 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

Zytel® 79G13L NC010

NYLON RESIN

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).

The information set forth herein is furnished free of charge, is based on technical data that DuPont believes to be reliable, and represents typical values that fall within the normal range of properties. This information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in other processes. It is intended for use by persons having technical skill, at their own discretion and risk. This information should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards and comply with applicable law. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.

CAUTION: Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract or other acknowledgement that is consistent with the DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative.

DuPont's sole warranty is that our products will meet our standard sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DUPONT SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR NON-INFRINGEMENT. DUPONT DISCLAIMS LIABILITY FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.