



Crastin® SK645FR NC010

THERMOPLASTIC POLYESTER RESIN

Crastin®热塑性聚酯的共性包括良好的机械性能和物理性能比如刚性和韧性、耐热、耐摩擦和耐磨耗、优异的表面性能和良好的着色性能。Crastin®热塑性聚酯具有优异的电绝缘特性，可制备耐高电弧规格。许多阻燃规格获得UL认证 (V-0)。Crastin®热塑性聚酯通常具有很高的耐化学和耐热老化性能。Crastin®热塑性聚酯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24kJ/g）。废弃处理需遵守当地法规。

Crastin®热塑性聚酯通常应用于有苛刻要求的电子电气、汽车、机械工程、化学、家用电气和运动器材领域。

Crastin® SK645FR NC010是一种30% 玻纤增强, 阻燃, PBT

总说明

树脂鉴别	PBT-GF30FR(17)	ISO 1043
制品标识码	>PBT-GF30FR(17)<	ISO 11469

流变性能

熔体体积流动速度, MVR	11 cm ³ /10min	ISO 1133
熔体质量流动速率	9 g/10min	ISO 1133
温度	250 °C	ISO 1133
负荷	5 kg	ISO 1133
熔体质量流率, 温度	250 °C	ISO 1133
熔体质量流率, 载荷	2.16 kg	ISO 1133
粘数	100 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	1.3 %	ISO 294-4, 2577
模塑收缩率, 平行	0.5 %	ISO 294-4
模塑收缩率, 垂直	1.5 %	ISO 294-4
模塑收缩率	0.25 %	ISO 294-4
模塑收缩率	0.1 %	ISO 294-4

机械性能

拉伸模量	11000 MPa	ISO 527-1/-2
断裂应力	120 MPa	ISO 527-1/-2
断裂伸长率	2.4 %	ISO 527-1/-2
弯曲模量	9500 MPa	ISO 178
弯曲强度	215 MPa	ISO 178
拉伸蠕变模量, 1h	11000 MPa	ISO 899-1
拉伸蠕变模量, 1000h	8000 MPa	ISO 899-1
简支梁无缺口冲击强度, +23°C	55 kJ/m ²	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	55 kJ/m ²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	9 kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	9 kJ/m ²	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	9 kJ/m ²	ISO 180/1A

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悬臂梁缺口冲击强度, -30°C	8 kJ/m ²	ISO 180/1A
无缺口悬臂梁冲击强度, 23°C	40 kJ/m ²	ISO 180/1U
无缺口悬臂梁冲击强度, -30°C	40 kJ/m ²	ISO 180/1U
Poisson's ratio	0.34 -	

热性能

熔融温度, 10°C/min	225 °C	ISO 11357-1/-3
玻璃化转变温度, 10°C/min	55 °C	ISO 11357-1/-2
热变形温度, 1.80 MPa	210 °C	ISO 75-1/-2
热变形温度, 0.45 MPa	220 °C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	212 °C	ISO 306
线膨胀系数, 平行	30 E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直	90 E-6/K	ISO 11359-1/-2
熔体	0.26 W/(m K)	
熔体的比热	1600 J/(kg K)	
相对温度指数, 电气性能, 0.75mm	140 °C	UL 746B
相对温度指数, 电气性能, 1.5mm	140 °C	UL 746B
相对温度指数, 电气性能, 3mm	140 °C	UL 746B
相对温度指数, 电气性能, 6mm	140 °C	UL 746B
相对温度指数, 冲击, 0.75mm	125 °C	UL 746B
相对温度指数, 冲击, 1.5mm	125 °C	UL 746B
相对温度指数, 冲击, 3mm	130 °C	UL 746B
相对温度指数, 冲击, 6mm	130 °C	UL 746B
相对温度指数, 强度, 0.75mm	140 °C	UL 746B
相对温度指数, 强度, 1.5mm	140 °C	UL 746B
相对温度指数, 强度, 3mm	140 °C	UL 746B
相对温度指数, 强度, 6mm	140 °C	UL 746B

燃烧性能

1.5mm名义厚度时的燃烧性	V-0 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	V-0 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
燃烧性 - 氧指数	31 %	ISO 4589-1/-2
灼热丝燃烧指数, 0.4mm	960 °C	IEC 60695-2-12
灼热丝燃烧指数, 0.75mm	960 °C	IEC 60695-2-12
灼热丝燃烧指数, 1mm	960 °C	IEC 60695-2-12
灼热丝燃烧指数, 1.5mm	960 °C	IEC 60695-2-12
灼热丝燃烧指数, 2mm	960 °C	IEC 60695-2-12
灼热丝燃烧指数, 3mm	960 °C	IEC 60695-2-12
灼热丝起燃温度, 0.75mm	675 °C	IEC 60695-2-13
灼热丝起燃温度, 0.4mm	675 °C	IEC 60695-2-12

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灼热丝起燃温度, 1mm	675 °C	IEC 60695-2-13
灼热丝起燃温度, 1.5mm	675 °C	IEC 60695-2-13
灼热丝起燃温度, 3mm	775 °C	IEC 60695-2-13
灼热丝温度, 无火, 1mm	650 °C	IEC 60335-1
FMVSS Class	DNI -	ISO 3795 (FMVSS 302)
Railway classification	R23 -	EN 45545-2
Railway classification rating	HL1 -	EN 45545-2

电性能

相对介电常数., 100Hz	4.5 -	IEC 62631-2-1
相对介电常数., 1MHz	3.8 -	IEC 62631-2-1
介质损耗因子, 100Hz	30 E-4	IEC 62631-2-1
介质损耗因子, 1MHz	160 E-4	IEC 62631-2-1
体积电阻率	>1E13 Ohm.m	IEC 62631-3-1
表面电阻率	1E15 Ohm	IEC 62631-3-2
介电强度	39 kV/mm	IEC 60243-1
相对漏电起痕指数	250 -	IEC 60112
介电强度, 短期	17 kV/mm	IEC 60243-1

其它性能

吸湿性, 2mm	0.1 %	类似ISO 62
吸水性, 2mm	0.3 %	类似ISO 62
密度	1710 kg/m ³	ISO 1183
熔体密度	1490 kg/m ³	

注塑

建议干燥	是
干燥温度	120 °C
干燥时间, 除湿干燥机	2 - 4 h
加工前水分含量	≤ 0.04 %
优良熔体温度	250 °C
注塑 熔体温度	240 °C
注塑 熔体温度	260 °C
优良模具温度	80 °C
模具温度	30 °C
模具温度	130 °C
保压范围	≥ 60 MPa
保压时间	3 s/mm
背压	As low as possible MPa
喷射温度	170 °C



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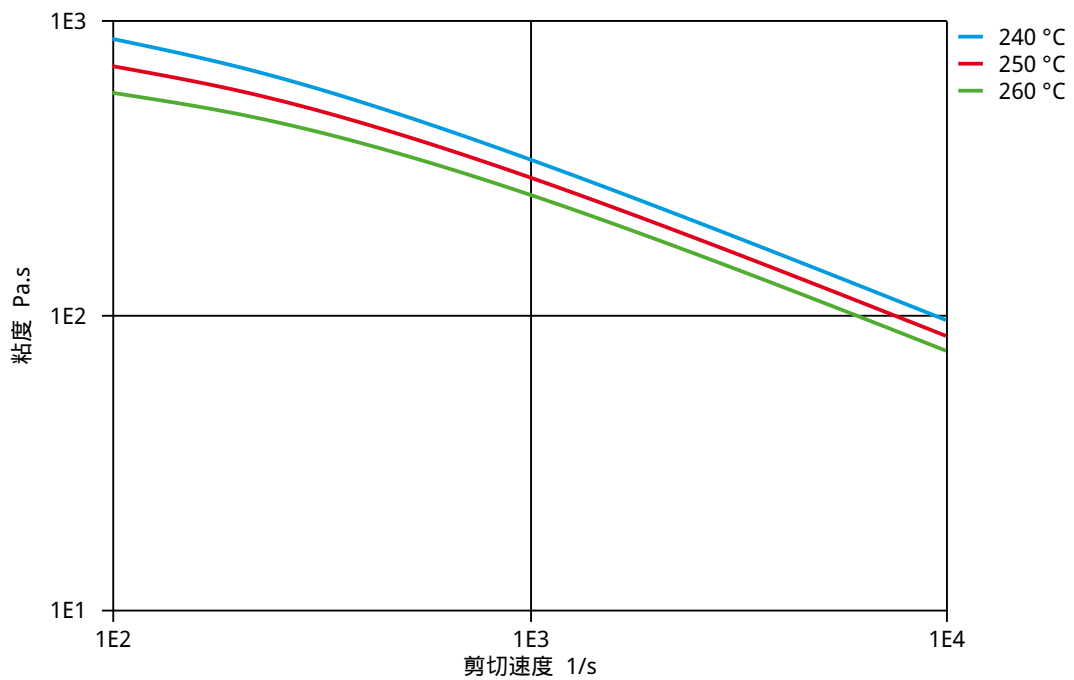
THERMOPLASTIC POLYESTER RESIN

典型数据

添加剂

阻燃剂

粘度 - 剪切速度

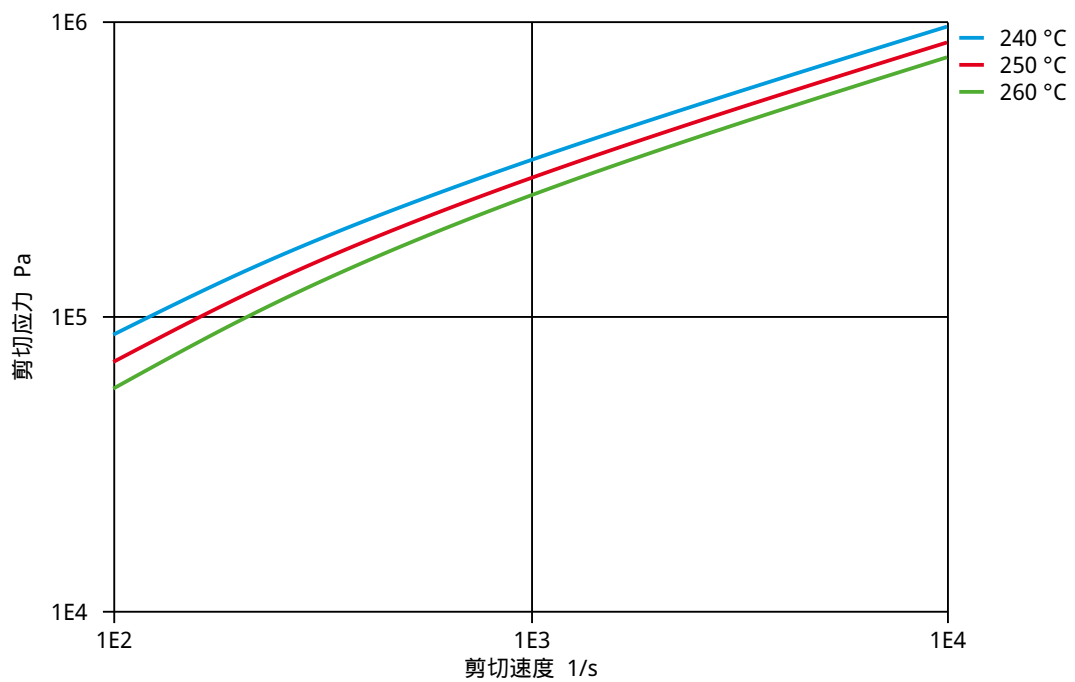




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THERMOPLASTIC POLYESTER RESIN

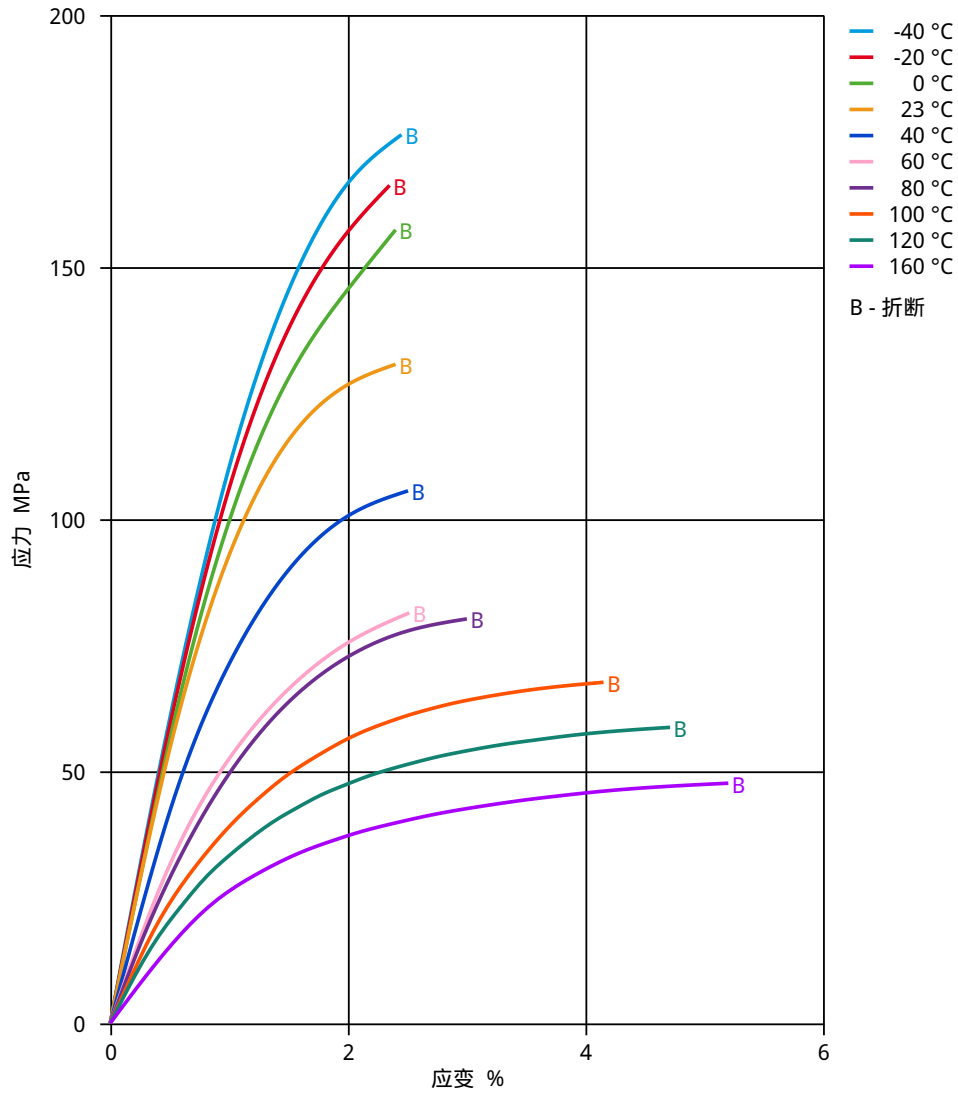
剪切应力 - 剪切速度



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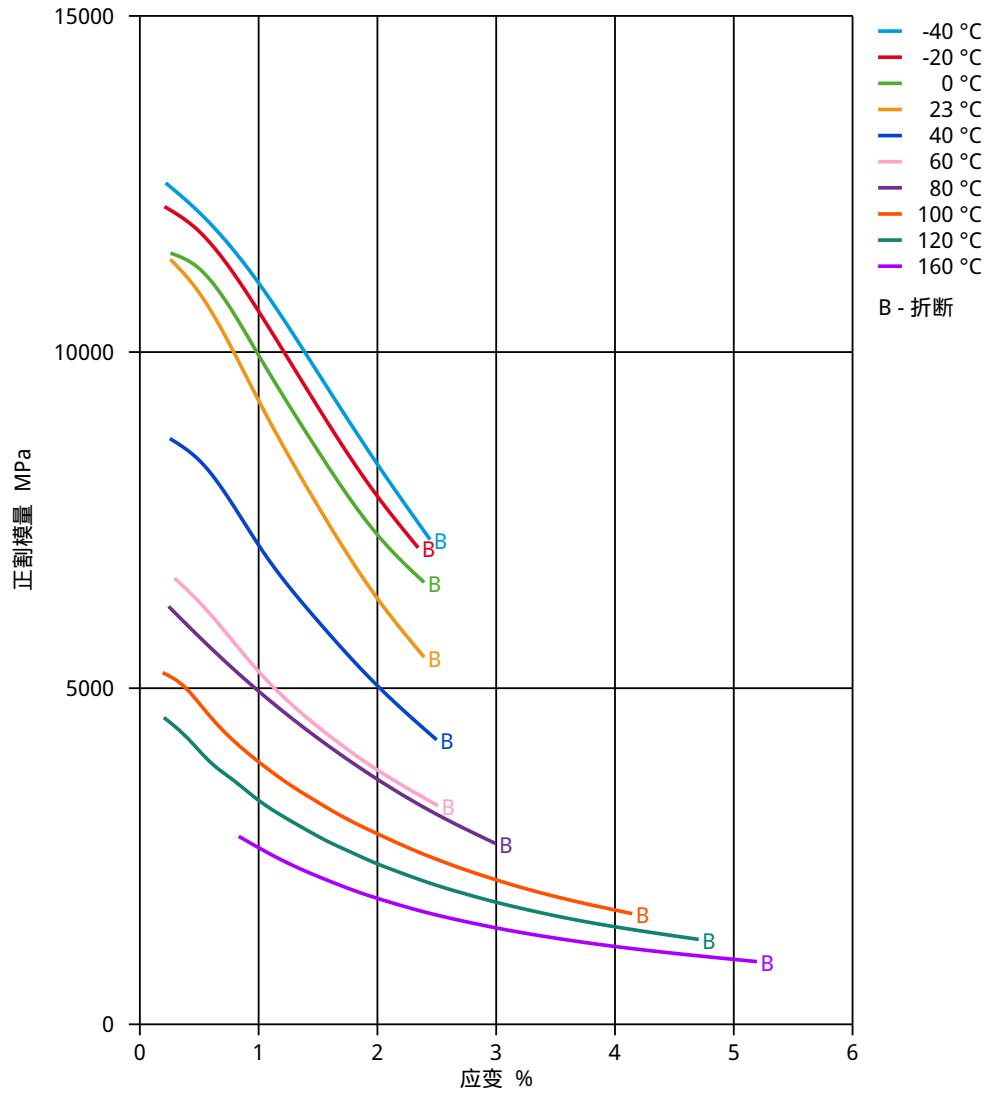
应力 - 应变.



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正割模量 - 应变.

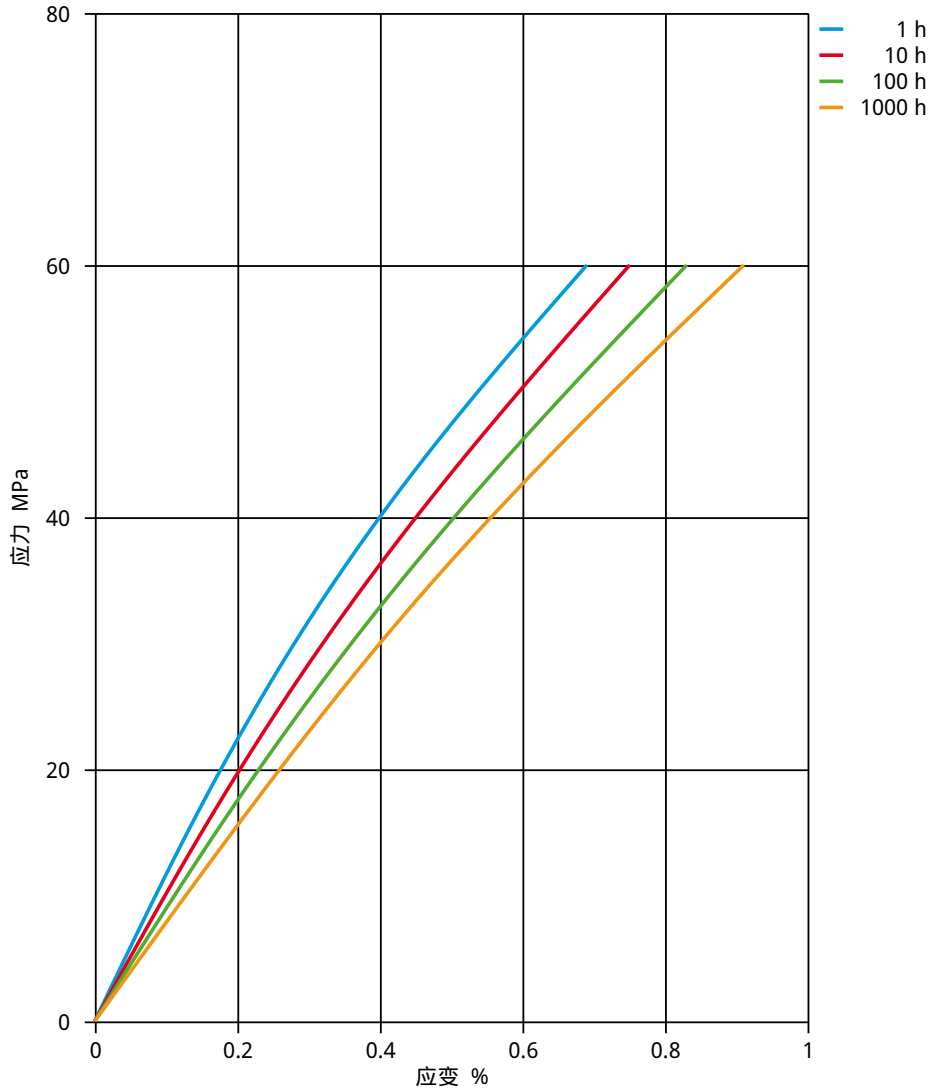




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THERMOPLASTIC POLYESTER RESIN

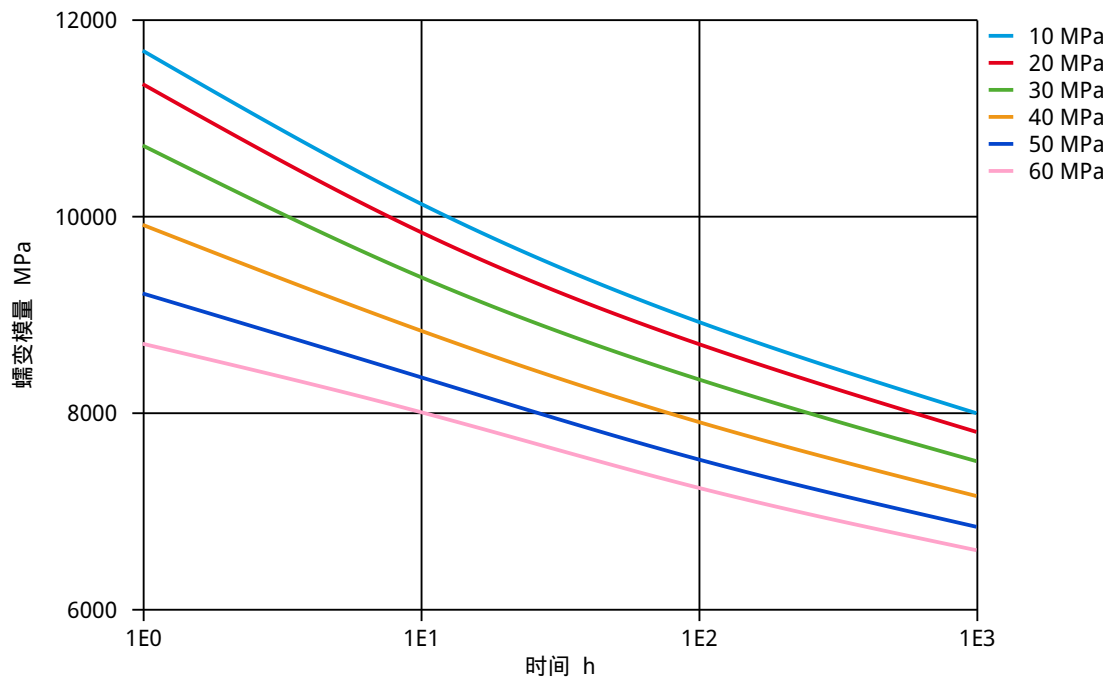
应力 - 应变(等时的) 23°C



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THERMOPLASTIC POLYESTER RESIN

蠕变模量 - 时间. 23°C

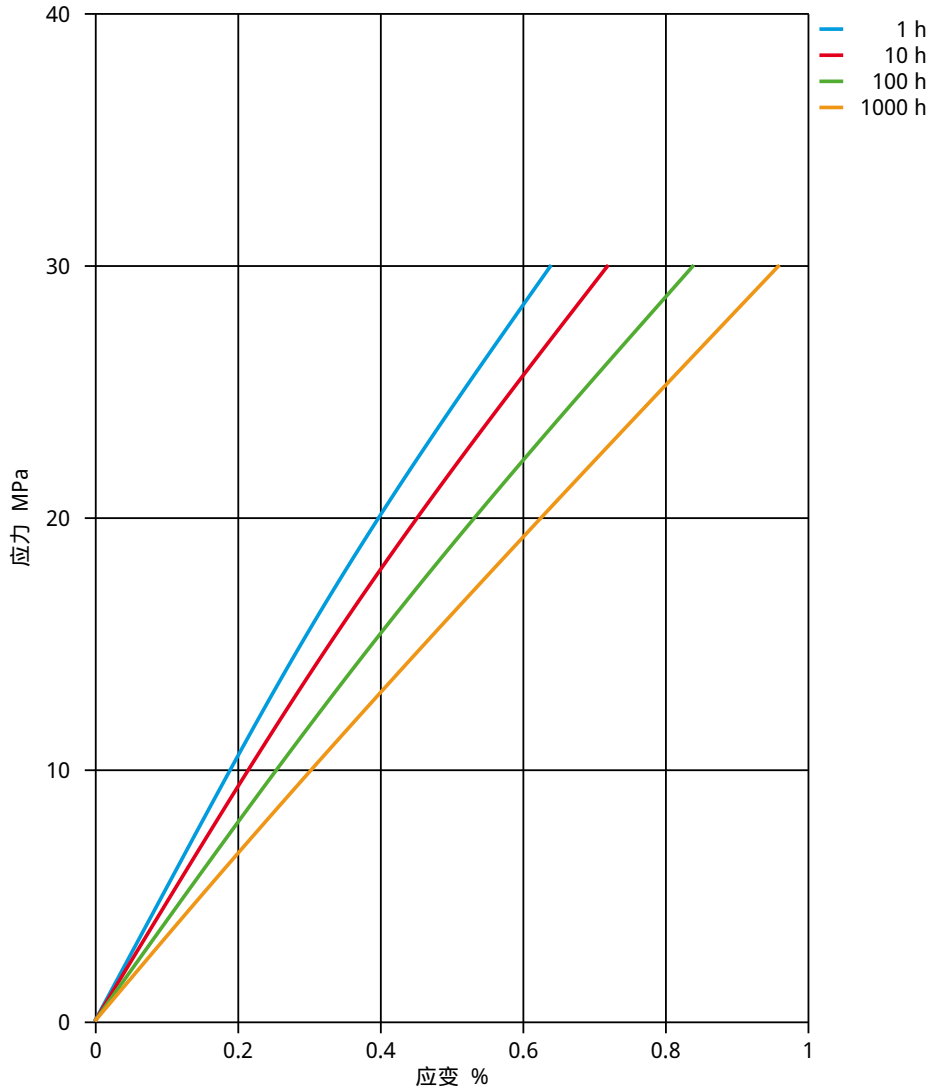




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应力 - 应变(等时的) 100°C

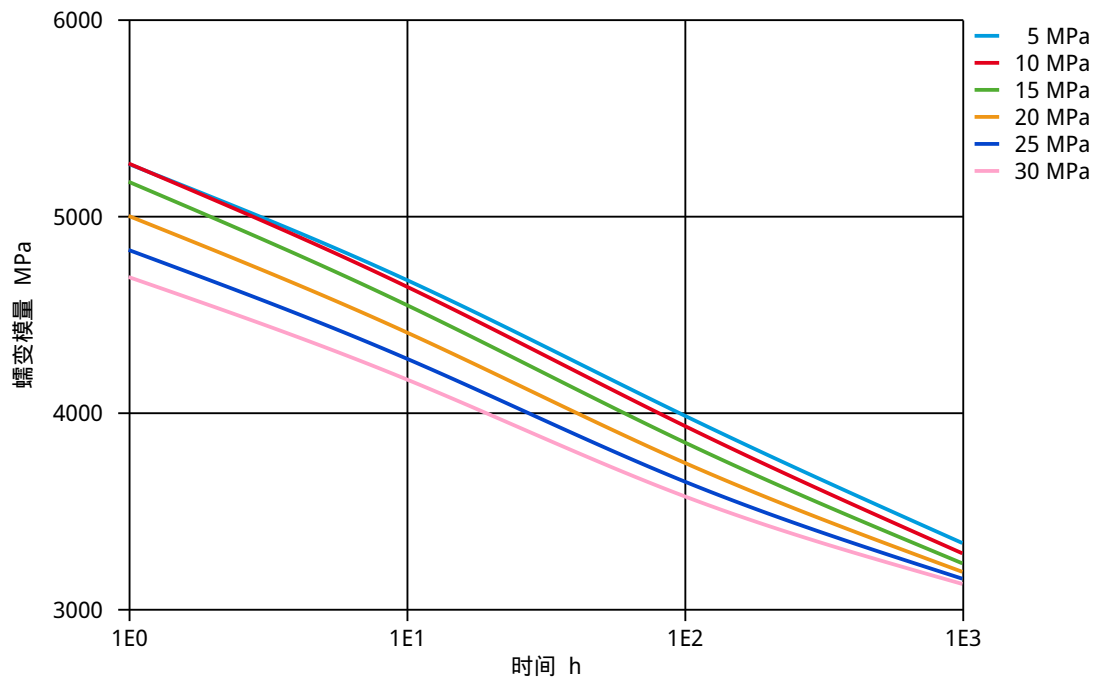




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THERMOPLASTIC POLYESTER RESIN

蠕变模量 - 时间. 100°C

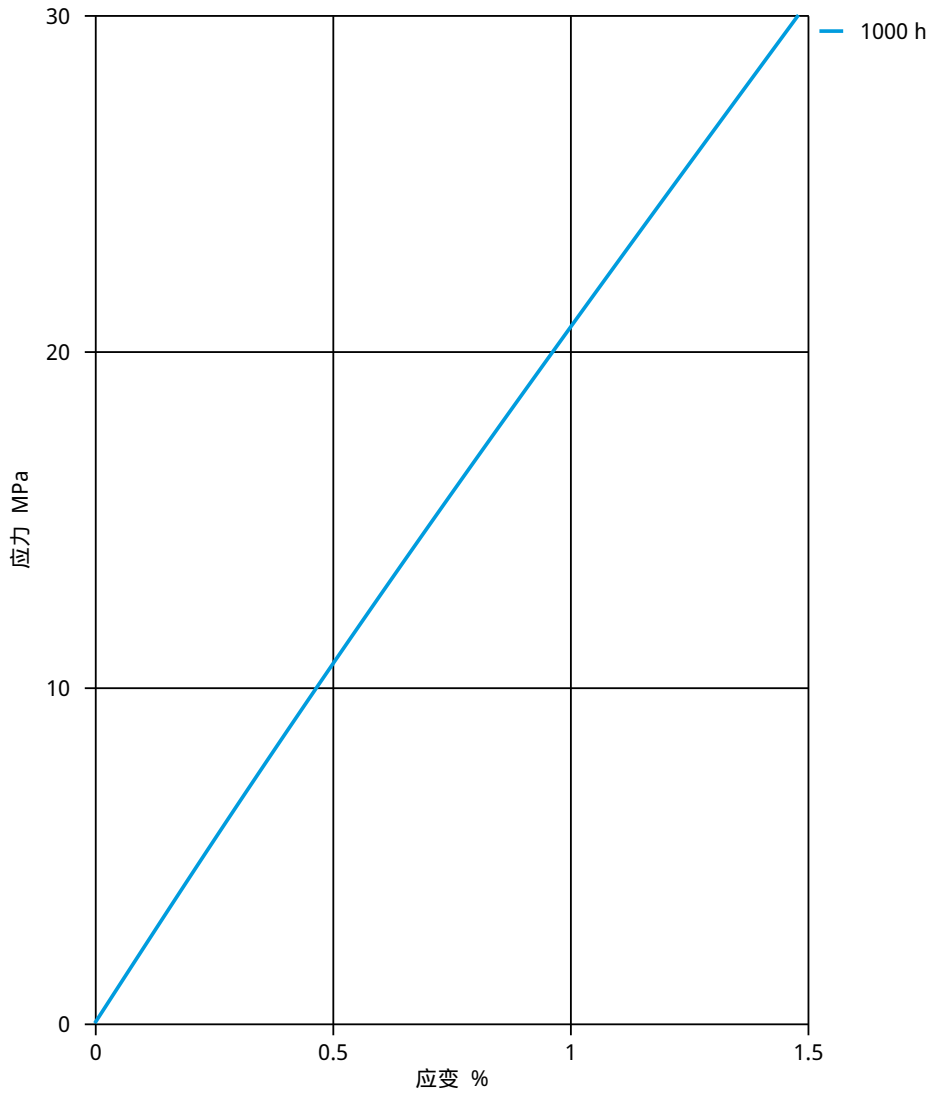




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THERMOPLASTIC POLYESTER RESIN

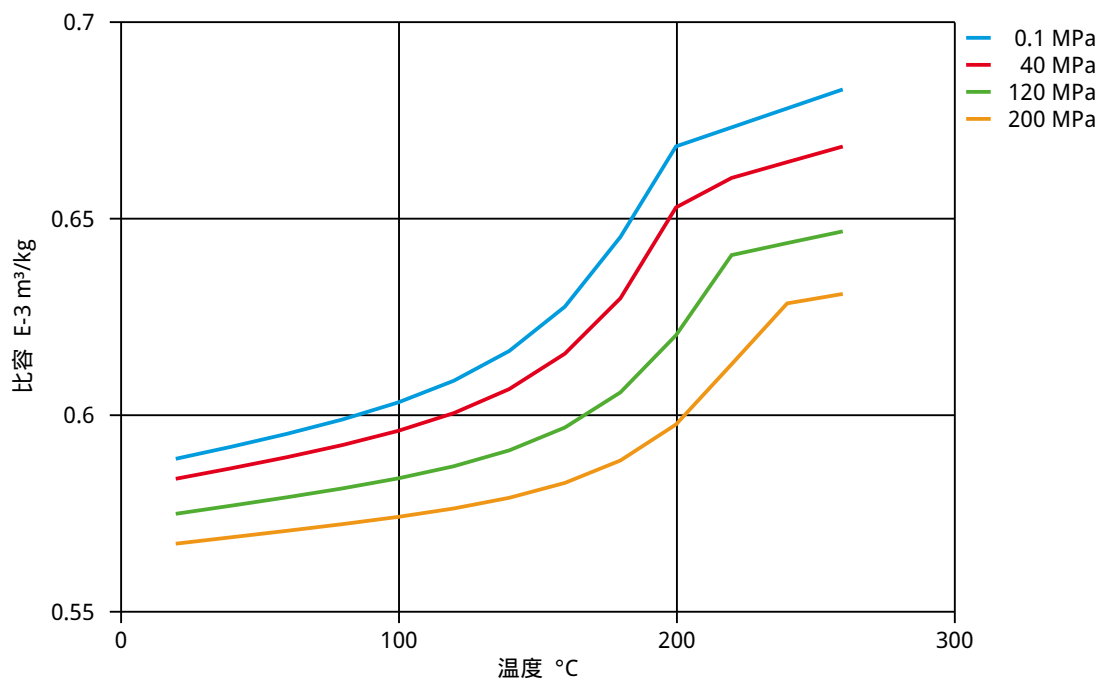
应力 - 应变(等时的) 120°C



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比容 - 温度(pvT)

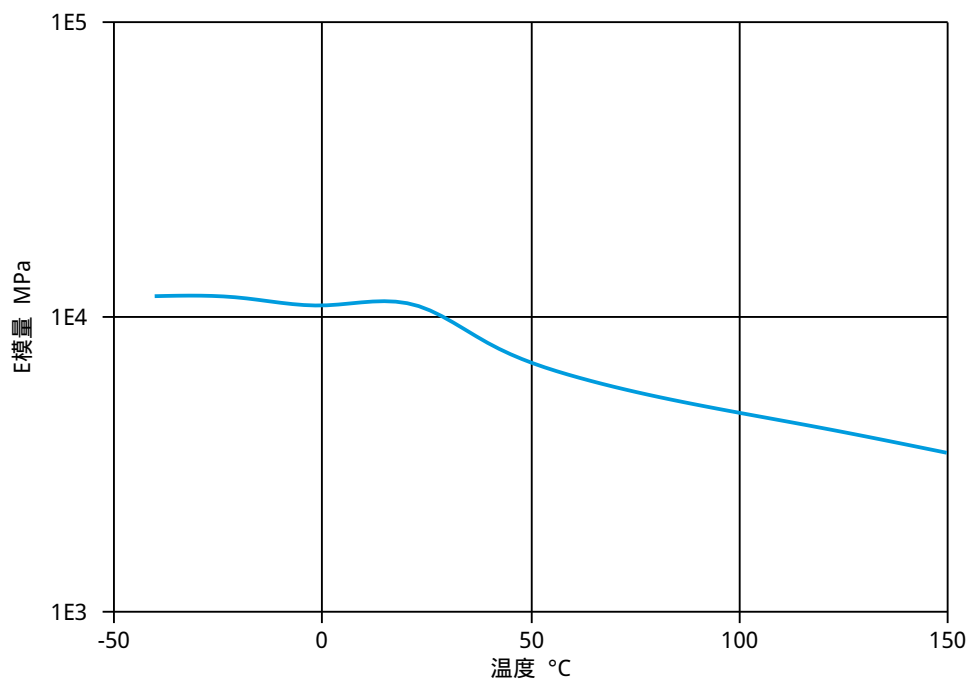




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拉伸模量 - 温度



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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

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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).

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