

Rynite® FR543 NC010

THERMOPLASTIC POLYESTER RESIN

Rynite® FR543 NC010是一种43% 玻纤增强, 阻燃, PET

总说明

树脂鉴别	PET-GF43FR(17)	ISO 1043
制品标识码	>PET-GF43FR(17)<	ISO 11469

流变性能

模塑收缩率, 平行	0.2 %	ISO 294-4, 2577
模塑收缩率, 垂直	0.8 %	ISO 294-4, 2577
模塑收缩率	0.35 %	ISO 294-4
模塑收缩率	0.05 %	ISO 294-4

机械性能

拉伸模量	17000 MPa	ISO 527-1/-2
断裂应力	170 MPa	ISO 527-1/-2
断裂伸长率	1.8 %	ISO 527-1/-2
弯曲模量	14500 MPa	ISO 178
压缩强度	230 MPa	ISO 604
剪切强度	60 MPa	ASTM D 732
拉伸蠕变模量, 1000h	15000 MPa	ISO 899-1
简支梁无缺口冲击强度, +23°C	43 kJ/m ²	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	30 kJ/m ²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	10 kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	10 kJ/m ²	ISO 179/1eA
洛氏硬度	102 -	ISO 2039-2
洛氏硬度, Rockwell	122 -	ISO 2039-2
Poisson's ratio	0.33 -	

Tribological properties

静态摩擦系数	0.18	ASTM 1894
静态摩擦系数, 铁	0.16	ASTM 1894

热性能

熔融温度, 10°C/min	254 °C	ISO 11357-1/-3
玻璃化转变温度, 10°C/min	90 °C	ISO 11357-1/-2
热变形温度, 1.80 MPa	225 °C	ISO 75-1/-2
热变形温度, 0.45 MPa	240 °C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	225 °C	ISO 306
线膨胀系数, 平行	10 E-6/K	ISO 11359-1/-2
线性热膨胀系数, 平行, 23-55°C	11 E-6/K	ASTM E 831
线膨胀系数, 垂直	80 E-6/K	ISO 11359-1/-2



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THERMOPLASTIC POLYESTER RESIN

线膨胀系数, 垂直, 23-55°C	79 E-6/K	ASTM E 831
固态导热系数	0.31 W/(m K)	
熔体	0.3 W/(m K)	
熔体的比热	1560 J/(kg K)	
相对温度指数, 电气性能, 0.75mm	155 °C	UL 746B
相对温度指数, 电气性能, 1.5mm	155 °C	UL 746B
相对温度指数, 电气性能, 3mm	155 °C	UL 746B
相对温度指数, 冲击, 0.75mm	155 °C	UL 746B
相对温度指数, 冲击, 1.5mm	155 °C	UL 746B
相对温度指数, 冲击, 3mm	155 °C	UL 746B
相对温度指数, 强度, 0.75mm	155 °C	UL 746B
相对温度指数, 强度, 1.5mm	155 °C	UL 746B
相对温度指数, 强度, 3mm	155 °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	0.8 mm	IEC 60695-11-10
UL注册	yes -	UL 94
厚度为h时的5V燃烧性	5VA class	IEC 60695-11-20
测试用试样的厚度	1.5 mm	IEC 60695-11-20
UL注册	yes -	UL 94
燃烧性 - 氧指数	35 %	ISO 4589-1/-2
灼热丝燃烧指数, 3mm	960 °C	IEC 60695-2-12
灼热丝起燃温度, 3mm	960 °C	IEC 60695-2-13
灼热丝温度, 无火, 0.75mm	960 °C	IEC 60335-1
灼热丝温度, 无火, 1mm	960 °C	IEC 60335-1
灼热丝温度, 无火, 1.5mm	960 °C	IEC 60335-1
灼热丝温度, 无火, 2mm	960 °C	IEC 60335-1
灼热丝温度, 无火, 3mm	960 °C	IEC 60335-1
FMVSS Class	B -	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	<80 mm/min	ISO 3795 (FMVSS 302)

电性能

相对介电常数., 100Hz	4.6 -	IEC 62631-2-1
相对介电常数., 1MHz	4.1 -	IEC 62631-2-1
介质损耗因子, 100Hz	368 E-4	IEC 62631-2-1
介质损耗因子, 1MHz	131 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	37 kV/mm	IEC 60243-1
相对漏电起痕指数	225 -	IEC 60112



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相对漏电起痕指数 2 PLC UL 746A

其它性能

吸湿性, 2mm	0.1 %	类似ISO 62
吸水性, 2mm	0.6 %	类似ISO 62
密度	1790 kg/m ³	ISO 1183
熔体密度	1610 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	4 - 6 h
加工前水分含量	≤ 0.02 ^[1] %
优良熔体温度	280 °C
注塑 熔体温度	270 °C
注塑 熔体温度	290 °C
螺杆大的切线速度	0.2 m/s
优良模具温度	110 °C
模具温度	100 °C
模具温度	120 ^[2] °C
保压范围	≥ 80 MPa
保压时间	4 s/mm
背压	As low as possible MPa
喷射温度	170 °C

[1]: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.

[2]: (6mm - 1mm thickness)

典型数据

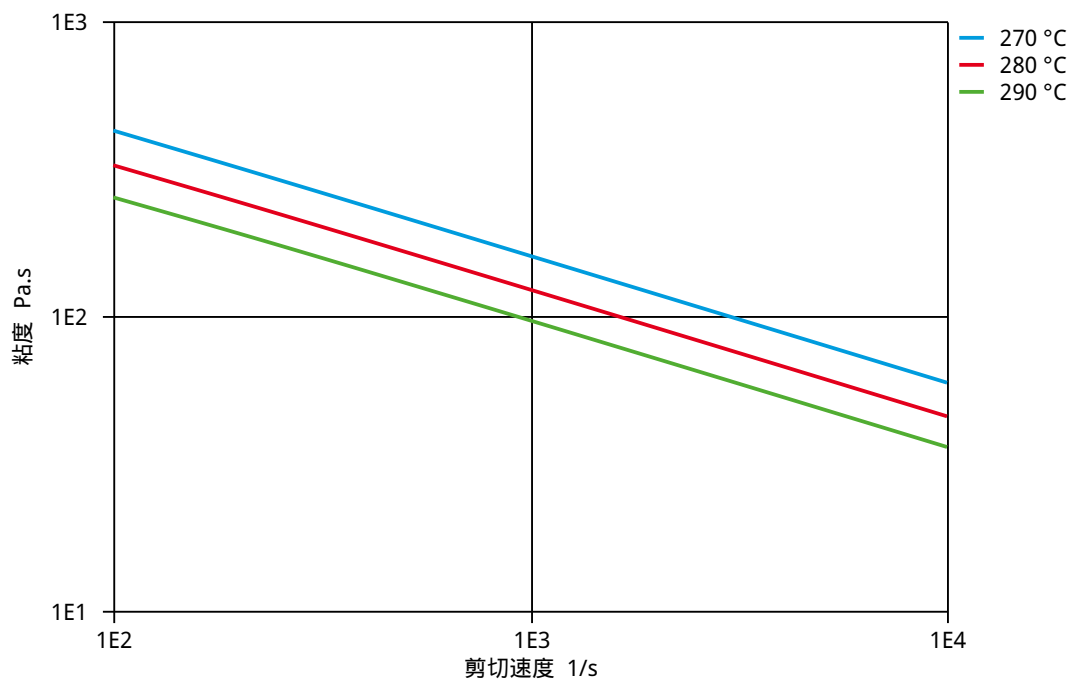
添加剂 脱模助剂, 阻燃剂



Rynite[®] FR543 NC010

THERMOPLASTIC POLYESTER RESIN

粘度 - 剪切速度

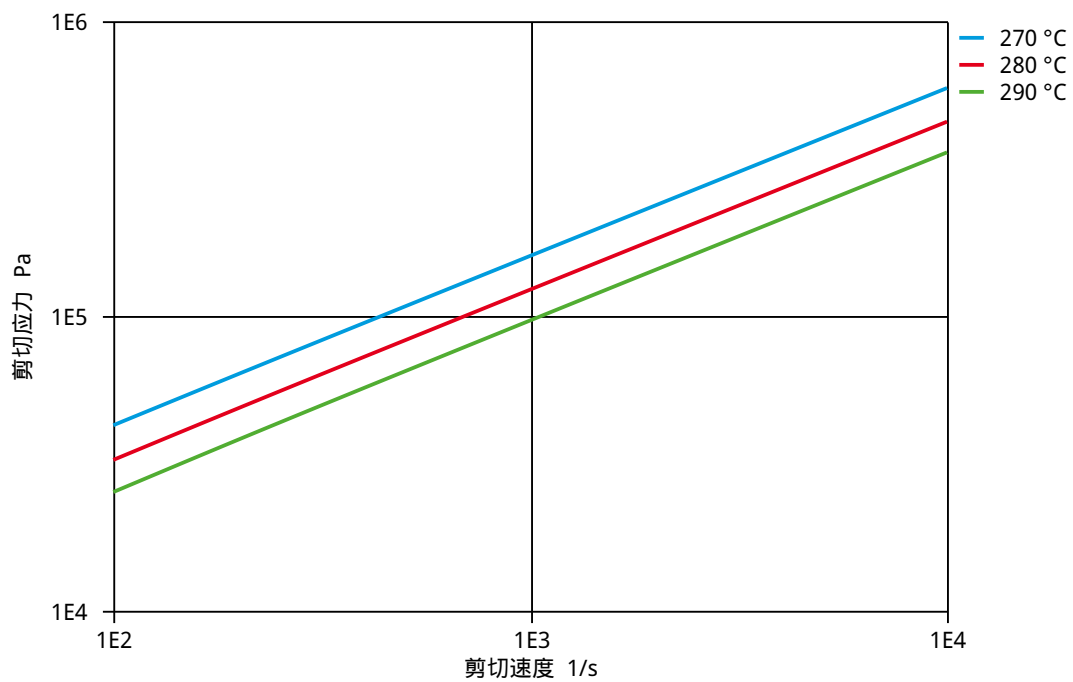




Rynite[®] FR543 NC010

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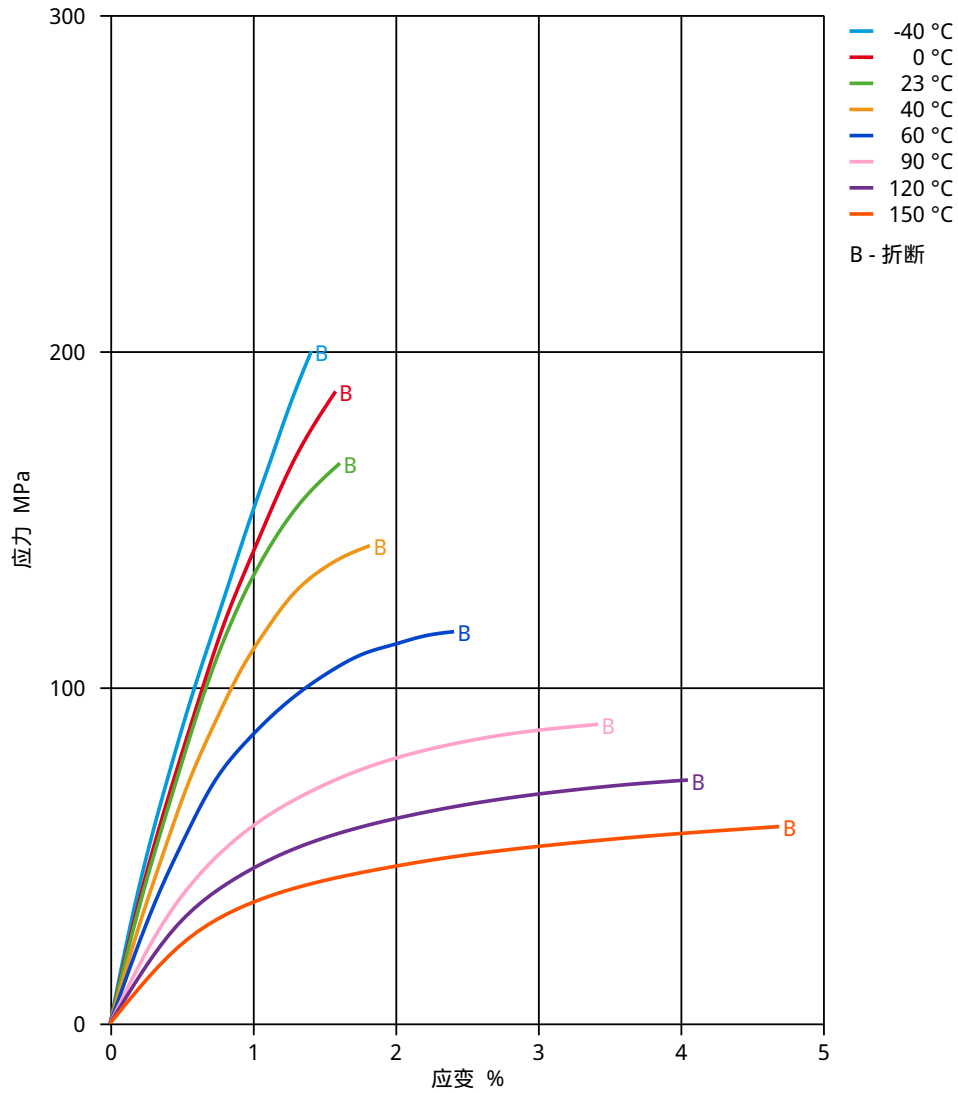
剪切应力 - 剪切速度



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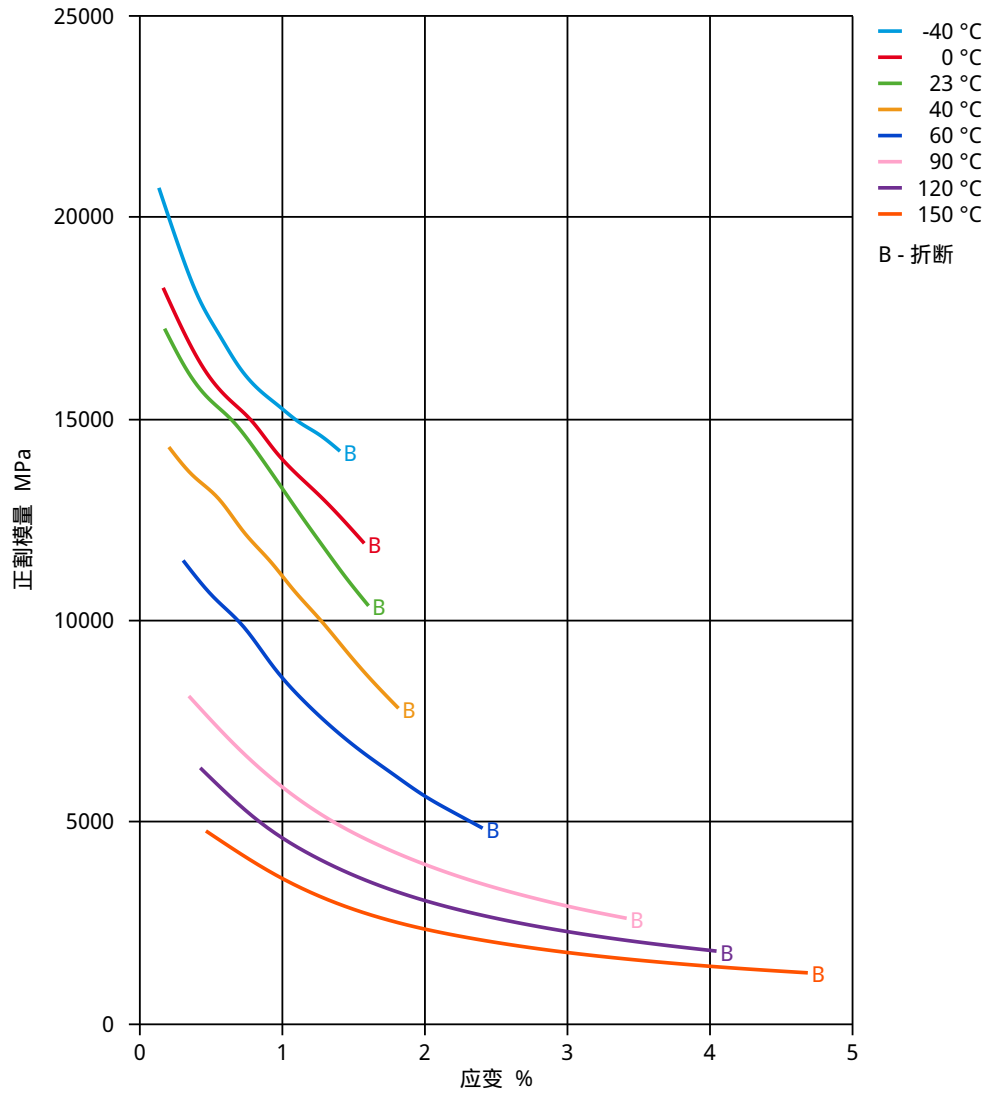
应力 - 应变.



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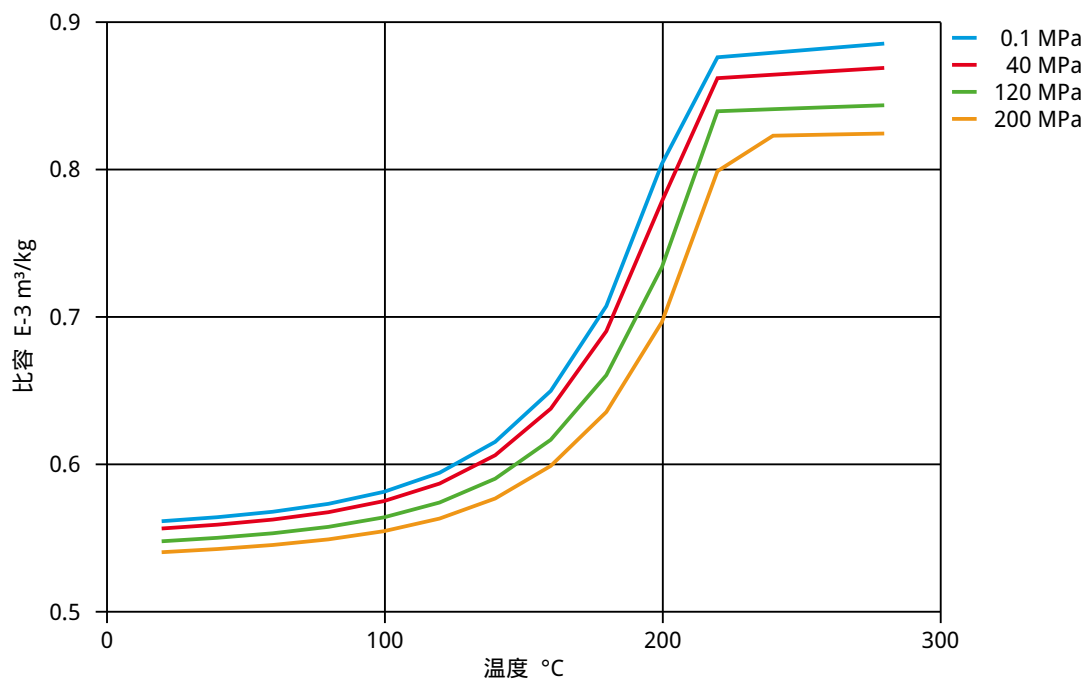
正割模量 - 应变.



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比容 - 温度(pvT)



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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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