



# Crastin® HR5330HF 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® HR5330HF NC010是一种30% 玻纤增强, 耐水解, PBT

### 总说明

树脂鉴别	PBT-IGF30	ISO 1043
制品标识码	>PBT-IGF30<	ISO 11469

### 流变性能

熔体体积流动速度, MVR	8 cm <sup>3</sup> /10min	ISO 1133
温度	250 °C	ISO 1133
负荷	2.16 kg	ISO 1133
粘数	95 cm <sup>3</sup> /g	ISO 307, 1157, 1628
Intrinsic viscosity	0.8 -	ISO 307, 1157, 1628
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
模塑收缩率	0.2 %	ISO 294-4
模塑收缩率	0.05 %	ISO 294-4
流动长度	350 mm	
流动长度-压力	80 MPa	
流动长度-宽厚比	2 mm	

### 机械性能

拉伸模量	8500 MPa	ISO 527-1/-2
断裂应力	125 MPa	ISO 527-1/-2
断裂伸长率	3.2 %	ISO 527-1/-2
弯曲模量	7500 MPa	ISO 178
弯曲强度	200 MPa	ISO 178
剪切强度	55 MPa	ASTM D 732
简支梁无缺口冲击强度, +23°C	70 kJ/m <sup>2</sup>	ISO 179/1eU
简支梁缺口冲击强度, +23°C	13 kJ/m <sup>2</sup>	ISO 179/1eA
简支梁缺口冲击强度, -30°C	11.5 kJ/m <sup>2</sup>	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	14 kJ/m <sup>2</sup>	ISO 180/1A
悬臂梁缺口冲击强度, -40°C	11 kJ/m <sup>2</sup>	ISO 180/1A
无缺口悬臂梁冲击强度, 23°C	65 kJ/m <sup>2</sup>	ISO 180/1U
Poisson's ratio	0.34 <sup>[A]</sup> -	

[A]: Assessed

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### 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	65 °C	ISO 11357-1/-2
热变形温度, 1.80 MPa	207 °C	ISO 75-1/-2
热变形温度, 0.45 MPa	221 °C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	215 °C	ISO 306
线性热膨胀系数, 平行, -40-23°C	25 E-6/K	ISO 11359-1/-2
线膨胀系数, 平行	20 E-6/K	ISO 11359-1/-2
线性热膨胀系数, 平行, 55-160°C	15 E-6/K	ISO 11359-1/-2
线性热膨胀系数, 垂直, -40-23°C	90 E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直	150 E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直, 55-160°C	145 E-6/K	ISO 11359-1/-2
熔体	0.28 W/(m K)	
熔体的比热	1730 J/(kg K)	
相对温度指数, 电气性能, 0.75mm	75 °C	UL 746B
相对温度指数, 冲击, 0.75mm	75 °C	UL 746B
相对温度指数, 强度, 0.75mm	75 °C	UL 746B

### 燃烧性能

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
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
燃烧性 - 氧指数	19 %	ISO 4589-1/-2
灼热丝燃烧指数, 3mm	750 °C	IEC 60695-2-12
FMVSS Class	B -	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	30 mm/min	ISO 3795 (FMVSS 302)

### 电性能

相对介电常数, 100Hz	4.4 -	IEC 62631-2-1
相对介电常数, 1MHz	4.1 -	IEC 62631-2-1
介质损耗因子, 100Hz	25 E-4	IEC 62631-2-1
介质损耗因子, 1MHz	200 E-4	IEC 62631-2-1
体积电阻率	>1E13 Ohm.m	IEC 62631-3-1
表面电阻率	1E13 Ohm	IEC 62631-3-2
介电强度	44 kV/mm	IEC 60243-1
相对漏电起痕指数	450 -	IEC 60112
介电强度, 短期	31 kV/mm	IEC 60243-1
介电强度, 短期	19 kV/mm	IEC 60243-1



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### 其它性能

吸湿性, 2mm	0.15 %	类似ISO 62
吸水性, 2mm	0.35 %	类似ISO 62
密度	1500 kg/m <sup>3</sup>	ISO 1183
熔体密度	1290 kg/m <sup>3</sup>	

### 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

### 典型数据

添加剂 脱模助剂

### 成型

注塑

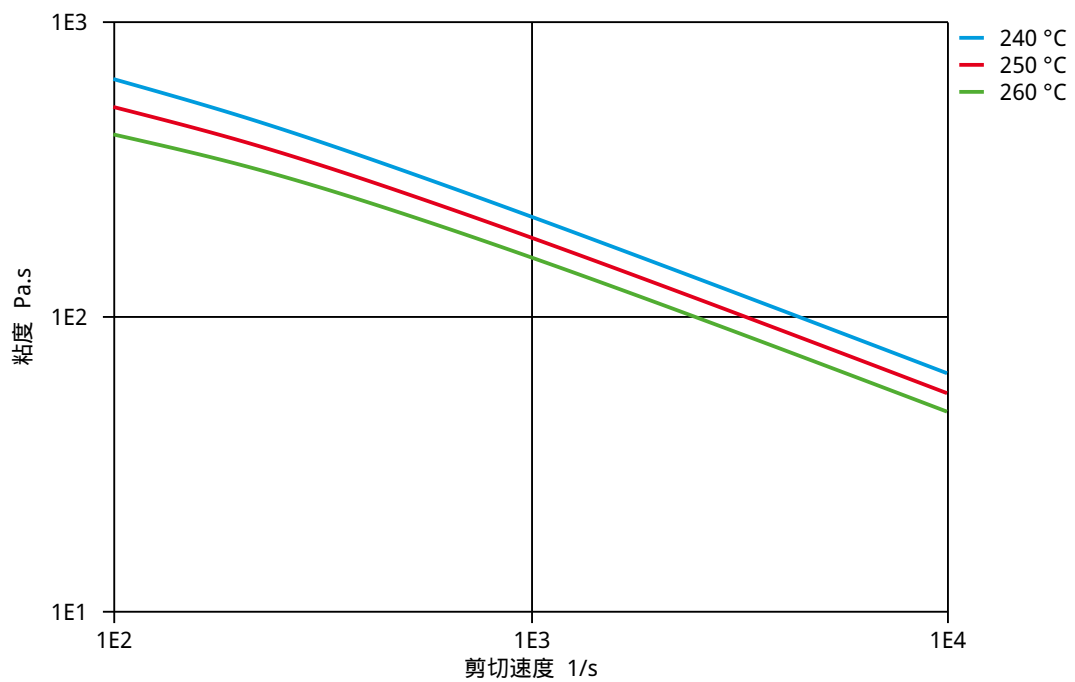
Use of hot-runners is possible with Crastin® HR resins. However we do not recommend temperature settings above 270°C and residence times at 265°C should be below 10 minutes. In case of longer residence times using hot-runners, for example after a shut-down, the complete system must be purged with glass reinforced Crastin® (type SK602/605) before starting up again. For successful processing of Crastin® HR with hot-runners, care should be taken to maintain a uniform temperature, avoid hot-spots and long residence times.



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THERMOPLASTIC POLYESTER RESIN

粘度 - 剪切速度

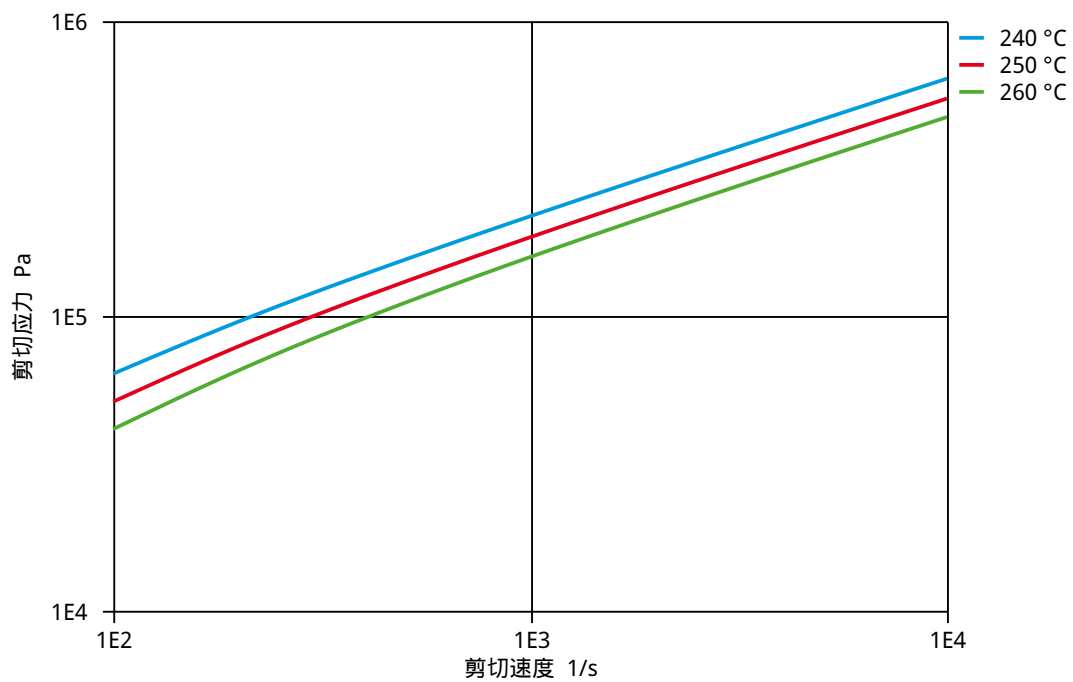




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剪切应力 - 剪切速度

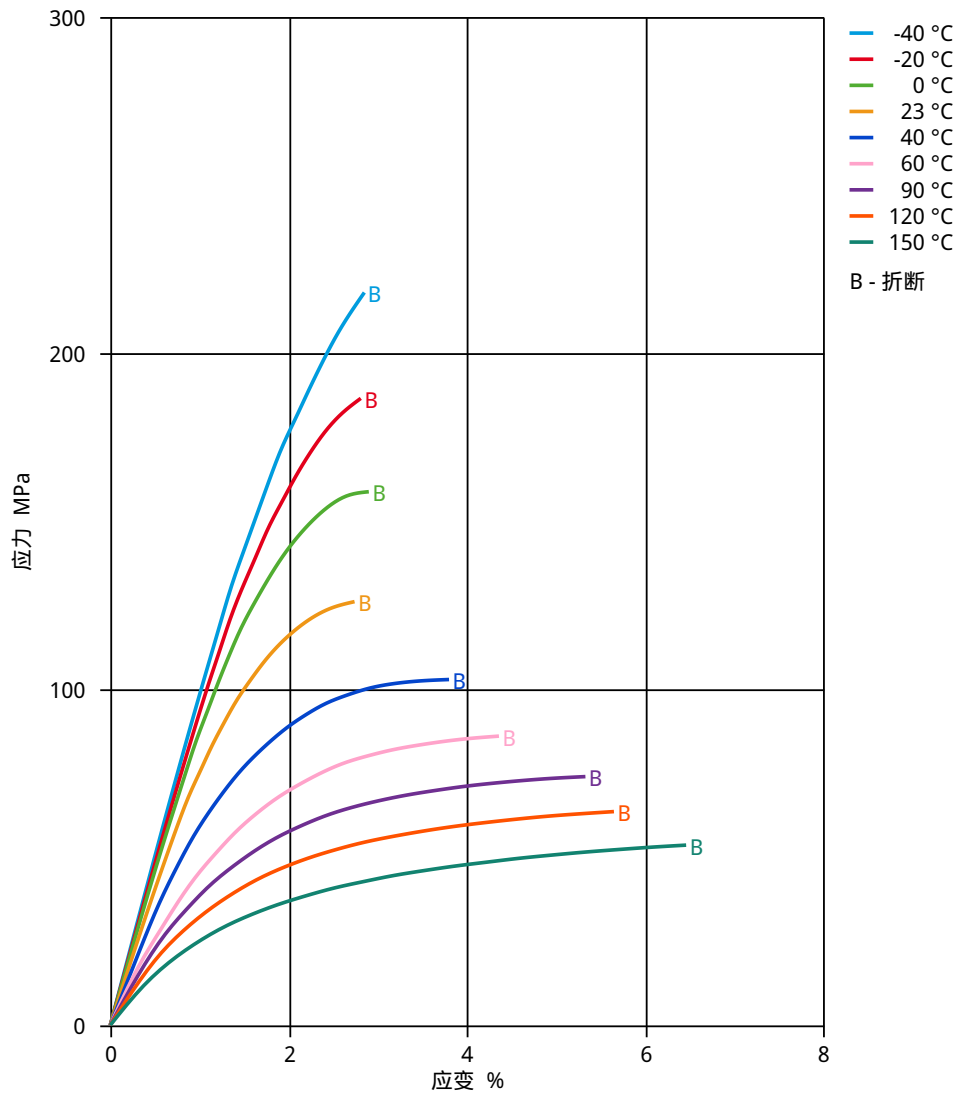




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THERMOPLASTIC POLYESTER RESIN

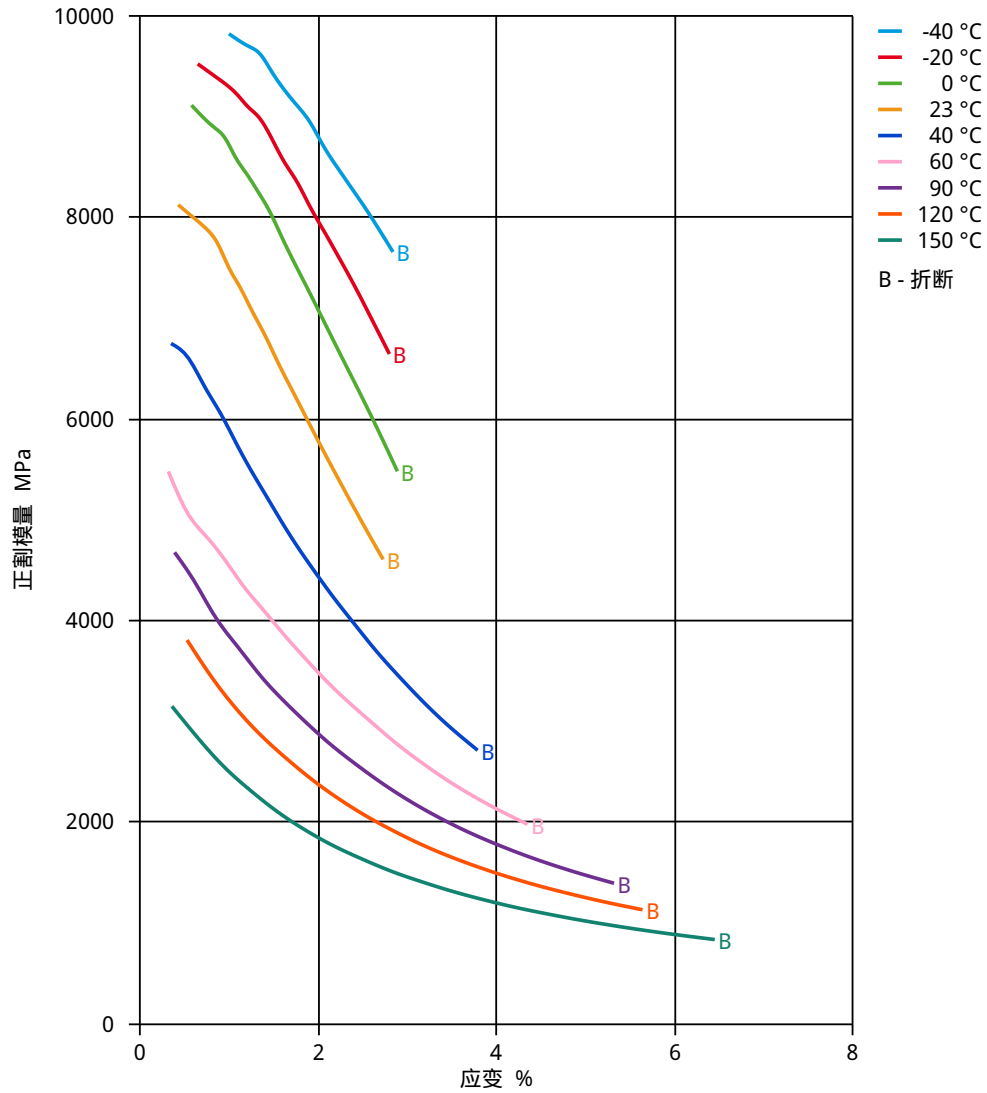
应力 - 应变.



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THERMOPLASTIC POLYESTER RESIN

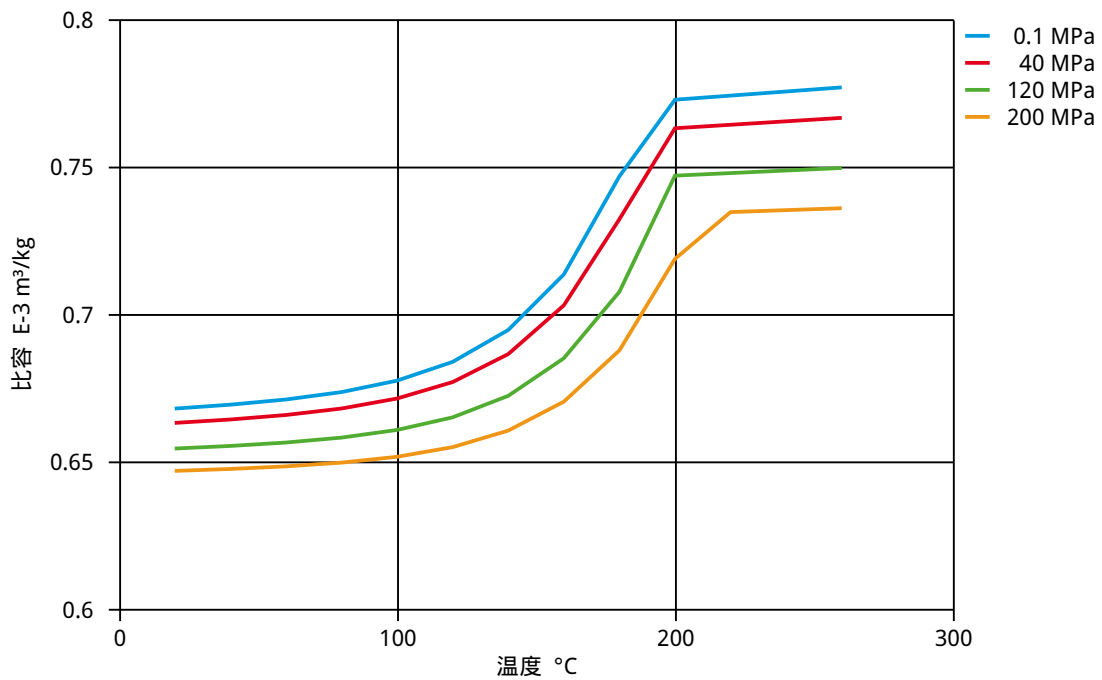
正割模量 - 应变.



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比容 - 温度(pvT)



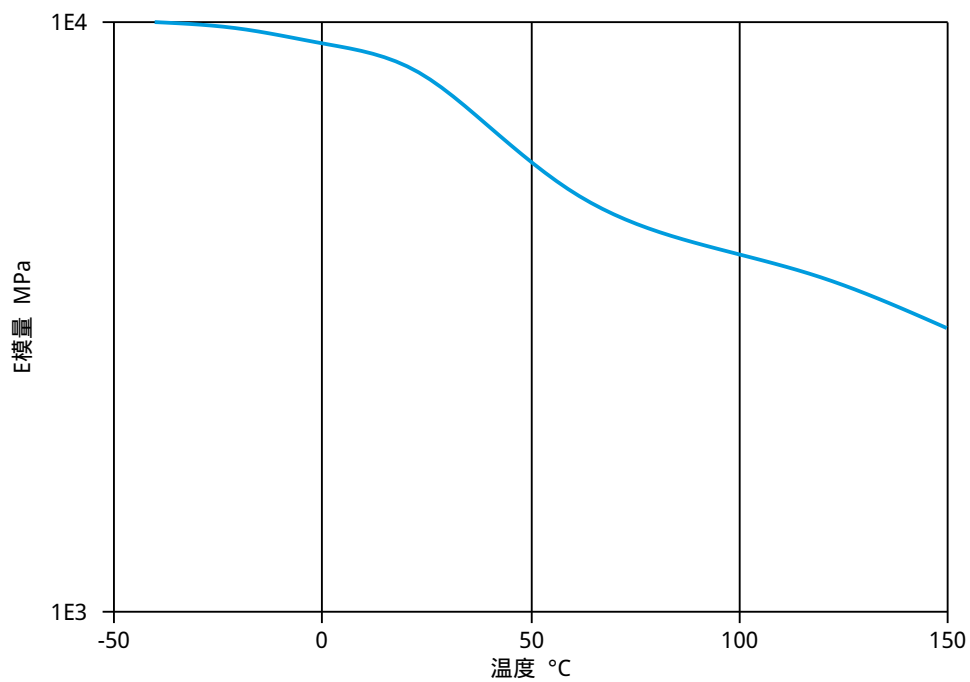




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THERMOPLASTIC POLYESTER RESIN

拉伸模量 - 温度



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## THERMOPLASTIC POLYESTER 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

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## THERMOPLASTIC POLYESTER 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).

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