



# Crastin® SO653 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® SO653 NC010是一种20% 玻璃珠填充 PBT具有低翘曲特性

### 总说明

|       |            |           |
|-------|------------|-----------|
| 树脂鉴别  | PBT-GB20   | ISO 1043  |
| 制品标识码 | >PBT-GB20< | ISO 11469 |

### 流变性能

|                     |                        |                     |
|---------------------|------------------------|---------------------|
| 熔体质量流动速率            | 13 g/10min             | 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                  | 135 cm <sup>3</sup> /g | ISO 307, 1157, 1628 |
| Intrinsic viscosity | 1.05 -                 | ISO 307, 1157, 1628 |
| 模塑收缩率，平行            | 1.8 %                  | ISO 294-4, 2577     |
| 模塑收缩率，垂直            | 1.6 %                  | ISO 294-4, 2577     |
| 模塑收缩率               | 0.4 %                  | ISO 294-4           |
| 模塑收缩率               | 0.5 %                  | ISO 294-4           |

### 机械性能

|                  |                       |              |
|------------------|-----------------------|--------------|
| 拉伸模量             | 3500 MPa              | ISO 527-1/-2 |
| 断裂应力             | 47 MPa                | ISO 527-1/-2 |
| 断裂伸长率            | 10 %                  | ISO 527-1/-2 |
| 弯曲强度             | 90 MPa                | ISO 178      |
| 拉伸蠕变模量，1h        | 3500 MPa              | ISO 899-1    |
| 拉伸蠕变模量，1000h     | 2400 MPa              | ISO 899-1    |
| 简支梁无缺口冲击强度，+23°C | 40 kJ/m <sup>2</sup>  | ISO 179/1eU  |
| 简支梁无缺口冲击强度，-30°C | 50 kJ/m <sup>2</sup>  | ISO 179/1eU  |
| 简支梁缺口冲击强度，+23°C  | 3.5 kJ/m <sup>2</sup> | ISO 179/1eA  |
| 简支梁缺口冲击强度，-30°C  | 3.5 kJ/m <sup>2</sup> | ISO 179/1eA  |
| 悬臂梁缺口冲击强度，23°C   | 3.5 kJ/m <sup>2</sup> | ISO 180/1A   |
| 悬臂梁缺口冲击强度，-30°C  | 4 kJ/m <sup>2</sup>   | ISO 180/1A   |
| 无缺口悬臂梁冲击强度，23°C  | 37 kJ/m <sup>2</sup>  | ISO 180/1U   |
| 无缺口悬臂梁冲击强度，-30°C | 34 kJ/m <sup>2</sup>  | ISO 180/1U   |
| Poisson's ratio  | 0.37 -                |              |



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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    | 55 °C         | ISO 11357-1/-2 |
| 热变形温度, 1.80 MPa      | 65 °C         | ISO 75-1/-2    |
| 热变形温度, 0.45 MPa      | 165 °C        | ISO 75-1/-2    |
| 维卡软化温度, 50°C/h 50N   | 195 °C        | ISO 306        |
| 线膨胀系数, 平行            | 110 E-6/K     | ISO 11359-1/-2 |
| 线膨胀系数, 垂直            | 110 E-6/K     | ISO 11359-1/-2 |
| 熔体                   | 0.25 W/(m K)  |                |
| 熔体的比热                | 1850 J/(kg K) |                |
| 相对温度指数, 电气性能, 0.75mm | 120 °C        | UL 746B        |
| 相对温度指数, 电气性能, 1.5mm  | 120 °C        | UL 746B        |
| 相对温度指数, 电气性能, 3mm    | 120 °C        | UL 746B        |
| 相对温度指数, 电气性能, 6mm    | 120 °C        | UL 746B        |
| 相对温度指数, 冲击, 0.75mm   | 115 °C        | UL 746B        |
| 相对温度指数, 冲击, 1.5mm    | 115 °C        | UL 746B        |
| 相对温度指数, 冲击, 3mm      | 115 °C        | UL 746B        |
| 相对温度指数, 冲击, 6mm      | 115 °C        | UL 746B        |
| 相对温度指数, 强度, 0.75mm   | 120 °C        | UL 746B        |
| 相对温度指数, 强度, 1.5mm    | 120 °C        | UL 746B        |
| 相对温度指数, 强度, 3mm      | 120 °C        | UL 746B        |
| 相对温度指数, 强度, 6mm      | 120 °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      |
| 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       | 3    | mm     | IEC 60695-11-10      |
| UL注册           | yes  | -      | UL 94                |
| 燃烧性 - 氧指数      | 22   | %      | ISO 4589-1/-2        |
| 灼热丝燃烧指数, 3mm   | 750  | °C     | IEC 60695-2-12       |
| FMVSS Class    | SE/B | -      | ISO 3795 (FMVSS 302) |
| 燃烧速率, 厚度: 1毫米  | 24   | mm/min | ISO 3795 (FMVSS 302) |

### 电性能

|                |       |       |               |
|----------------|-------|-------|---------------|
| 相对介电常数., 100Hz | 4     | -     | IEC 62631-2-1 |
| 相对介电常数., 1MHz  | 3.7   | -     | IEC 62631-2-1 |
| 介质损耗因子, 100Hz  | 90    | 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 |
| 介电强度           | 25    | 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   |



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### 其它性能

|          |                        |          |
|----------|------------------------|----------|
| 吸湿性, 2mm | 0.2 %                  | 类似ISO 62 |
| 吸水性, 2mm | 0.35 %                 | 类似ISO 62 |
| 密度       | 1450 kg/m <sup>3</sup> | ISO 1183 |
| 熔体密度     | 1250 kg/m <sup>3</sup> |          |

### VDA性能

|    |        |          |
|----|--------|----------|
| 雾化 | 0.1 mg | ISO 6452 |
|----|--------|----------|

### 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

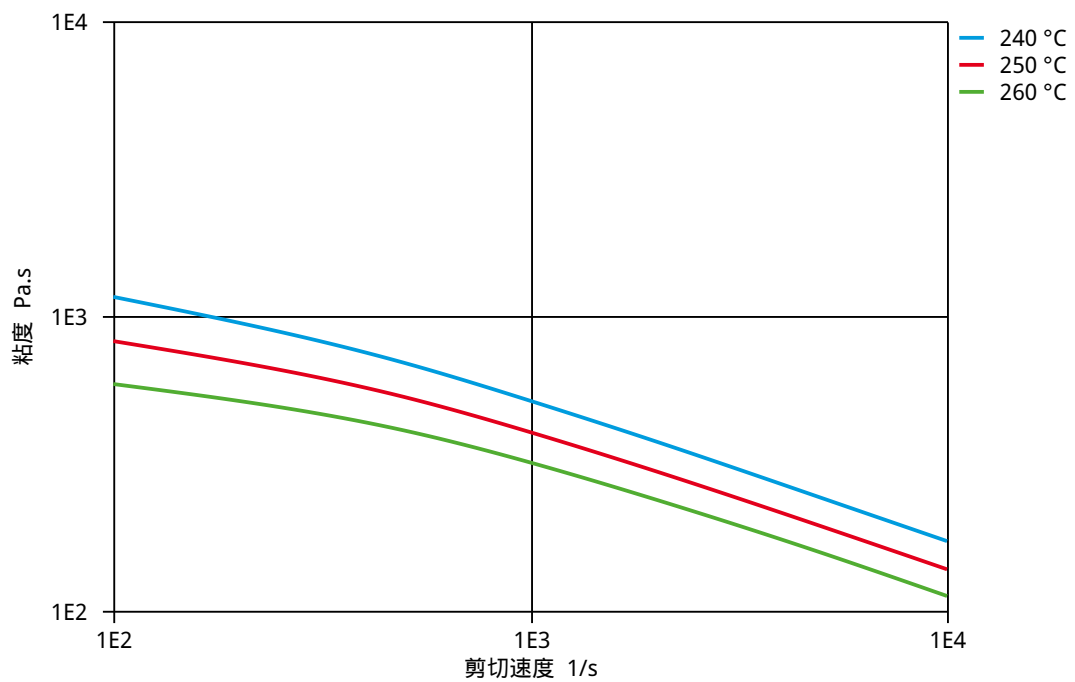
|     |      |
|-----|------|
| 添加剂 | 脱模助剂 |
|-----|------|



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粘度 - 剪切速度

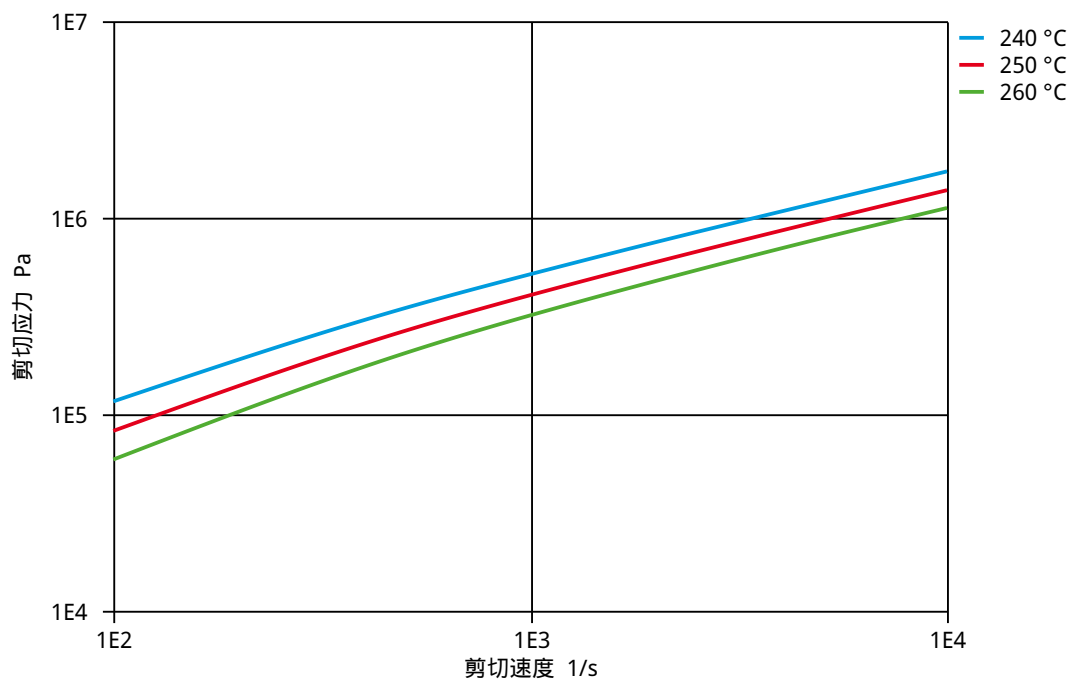




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THERMOPLASTIC POLYESTER RESIN

剪切应力 - 剪切速度

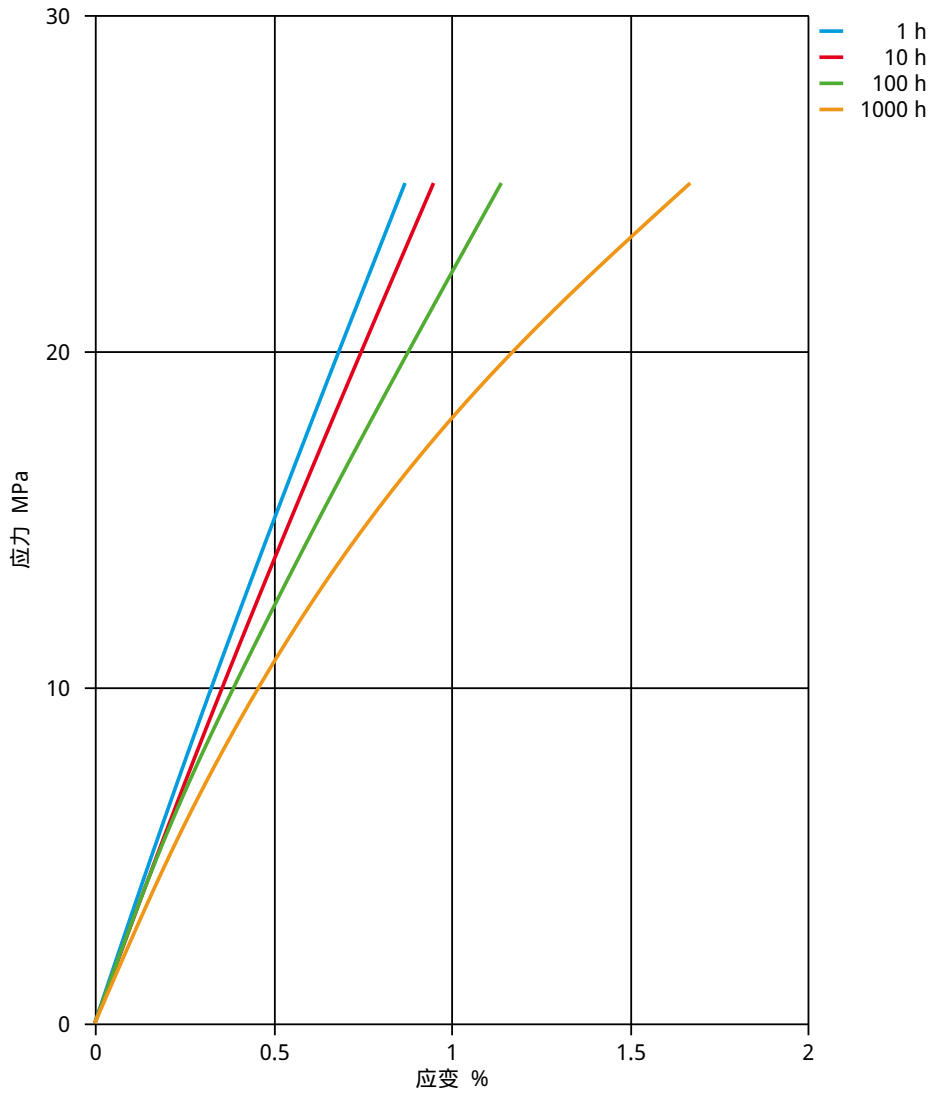




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THERMOPLASTIC POLYESTER RESIN

应力 - 应变(等时的) 23°C

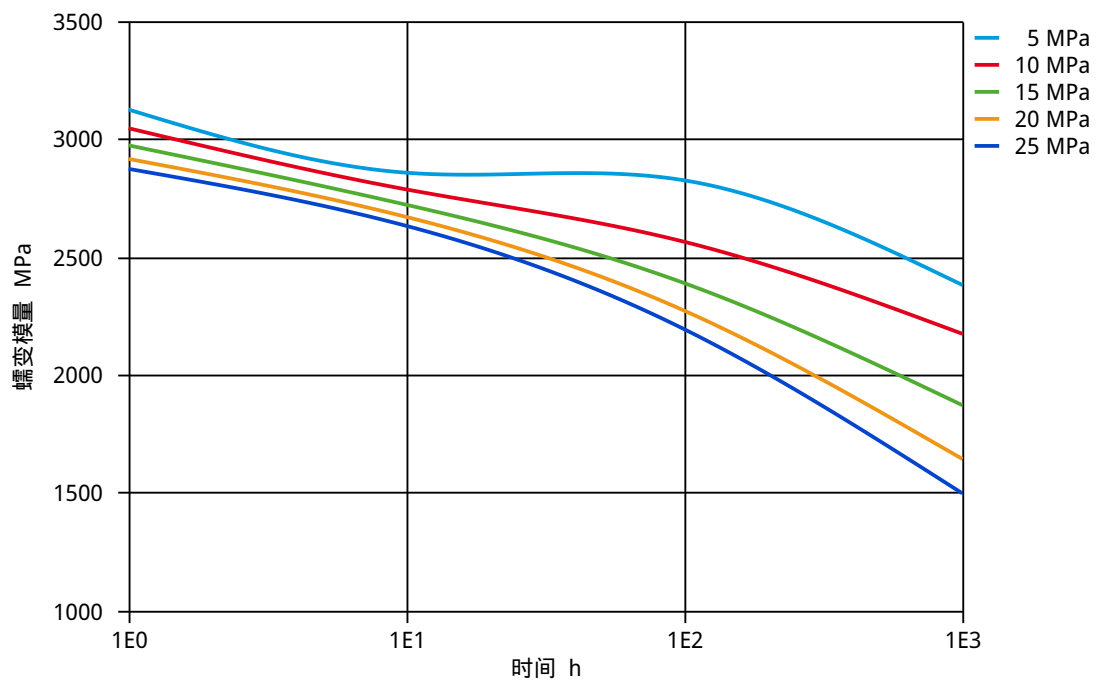




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蠕变模量 - 时间. 23°C



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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).

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.

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