# Zytel® 70G50 ECO-R 311 BLK1

NYLON RESIN

Zytel® 70G50 ECO-R 311 BLK1 incorporates 30% of post-industrial recycled content by weight in the finished product. It is a 50% Glass Reinforced, Heat Stabilized, Polyamide 66 designed for Automotive industry.

## 产品信息

| | | |
|---|---|---|
| 树脂鉴别 | PA66-GF50 (REC30) | ISO 1043 |
| 制品标识码 | >PA66-GF50 (REC30)< | ISO 11469 |

## 流变性能

| | | | |
|---|---|---|---|
| 模塑收缩率范围, 平行 | 0.2 - 0.5 | % | ISO 294-4, 2577 |
| 模塑收缩率范围, 垂直 | 0.5 - 0.8 | % | ISO 294-4, 2577 |

## 机械性能

| | dry/cond. | | |
|---|---|---|---|
| 拉伸模量 | 13700/10800 | MPa | ISO 527-1/-2 |
| 拉伸断裂应力, 5mm/min | 205/130 | MPa | ISO 527-1/-2 |
| 断裂伸长率, 5mm/min | 2/4 | % | ISO 527-1/-2 |
| 弯曲模量 | 13400/7500 | MPa | ISO 178 |
| 弯曲强度 | 280/180 | MPa | ISO 178 |
| 3.5%应变时的弯曲应力 | -/165 | MPa | ISO 178 |
| 断裂弯曲应变 | 2.6/4.5 | % | ISO 178 |
| 简支梁无缺口冲击强度, 23°C | 65/- | kJ/m² | ISO 179/1eU |
| 简支梁缺口冲击强度, 23°C | 8/13.9 | kJ/m² | ISO 179/1eA |
| 简支梁缺口冲击强度, -30°C | 7.5/- | kJ/m² | ISO 179/1eA |
| 悬臂梁缺口冲击强度, 23°C | 10/- | kJ/m² | ISO 180/1A |

## 热性能

| | dry/cond. | | |
|---|---|---|---|
| 熔融温度, 10°C/min | 260/* | °C | ISO 11357-1/-3 |
| 热变形温度, 1.8 MPa | 242/* | °C | ISO 75-1/-2 |
| 热变形温度, 0.45 MPa | 257/* | °C | ISO 75-1/-2 |
| 线性热膨胀系数, 平行 | 13/* | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 平行，23-55℃ | 15/- | E-6/K | ASTM E 831 |
| 线性热膨胀系数, 平行，-40-23℃ | 13/* | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 平行，55-160℃ | 13/* | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 垂直 | 93/* | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 垂直，23-55℃ | 64/- | E-6/K | ASTM E 831 |
| 线性热膨胀系数, 垂直，-40-23℃ | 55/* | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 垂直，55-160℃ | 125/* | E-6/K | ISO 11359-1/-2 |

## 其它性能

| | dry/cond. | | |
|---|---|---|---|
| 吸湿率, 2mm | 1.2/* | % | 类似ISO 62 |
| 吸水率, 2mm | 4/* | % | 类似ISO 62 |
| 密度 | 1590/- | kg/m³ | ISO 1183 |

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## 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 | ≤ 0.15 | % |
| 最优熔体温度 | 285 | °C |
| 最低熔体温度*** | 275 | °C |
| 最高熔体温度 | 295 | °C |
| 螺杆最大切线速度 | ≤ 0.2 | m/s |
| 最优模具温度 | 100 | °C |
| 最低模具温度 | 70 | °C |
| 最高模具温度 | 120 | °C |

## 特性

| | |
|---|---|
| 加工方法 | 注塑 |
| 特殊性能 | 热稳定 |
| 可持续 | 含有可回收成分 |

## 其他信息

注塑

### Preprocessing

PA materials, stocked in a moisture-proof packaging, can be processed without drying; however, it is always recommended drying the product that comes from a large package (e.g. Octabin). The moisture content suggested for the injection molding process should be lower than 0.15%, according to the grade and to the molded part characteristics. The materials containing flame retardants should have moisture content below 0.10%. Red phosphorous containing grades must always be dried below 0.08%. The drying time depends on the moisture content and the drying conditions. Typically, 4-8 hours at 80-90°C using dehumidified air (dew point of -20°C) are suitable conditions for a starting moisture content of 0.20%-0.40%.

### Processing

The following conditions apply to a standard injection molding process. Machine temperatures: barrel 265-290°C (PA66), 235-270°C (PA6), nozzle and hot runners up to 300°C (up to 290°C products with flame retardants). Mold temperatures: 60-80°C, (80-100°C highly reinforced grades). Back pressure: typically, 5-10 bar (hydraulic pressure). Temperatures exceeding 300°C and long residence time could lead to additives degradation and brittleness of the material. In case of gas generation in the melt, please verify moisture content and processing temperatures. Usage of regrind is possible depending on the molded part characteristics. For further details, please refer to the document 'Instructions for injection molding' or contact our technical support team.

### Postprocessing

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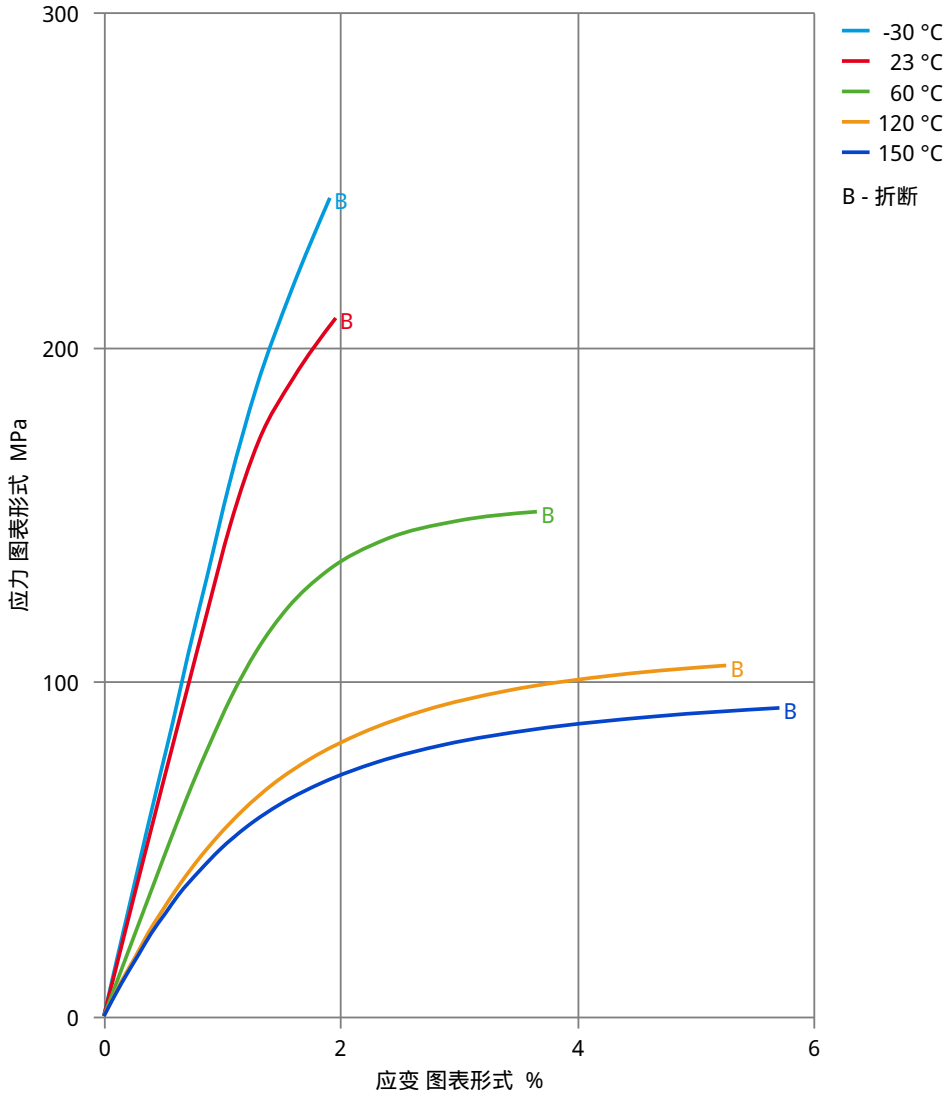
PA materials reach their final performance with a water content of about 1.5 to 3.5% by weight, depending on the type. This percentage corresponds to the point of equilibrium between the rates of absorption and desorption of moisture. After molding, in favorable environmental conditions, a part can quickly absorbs moisture up to 0.5-1.0%, while the equilibrium will be reached during its life. A conditioning treatment can accelerate further the initial water absorption of the molded parts. Conditioning is usually carried out in hot and humid environment (for example 50°C, 100% RH), inside climatic chambers. Slight dimensional variations (increase in volume due to the water absorbed) must be considered, especiD12ally in unfilled grades. Post-treatments of parts may also include the annealing (60-80°C in oven, up to four hours). This procedure can be useful to relax any internal stresses.

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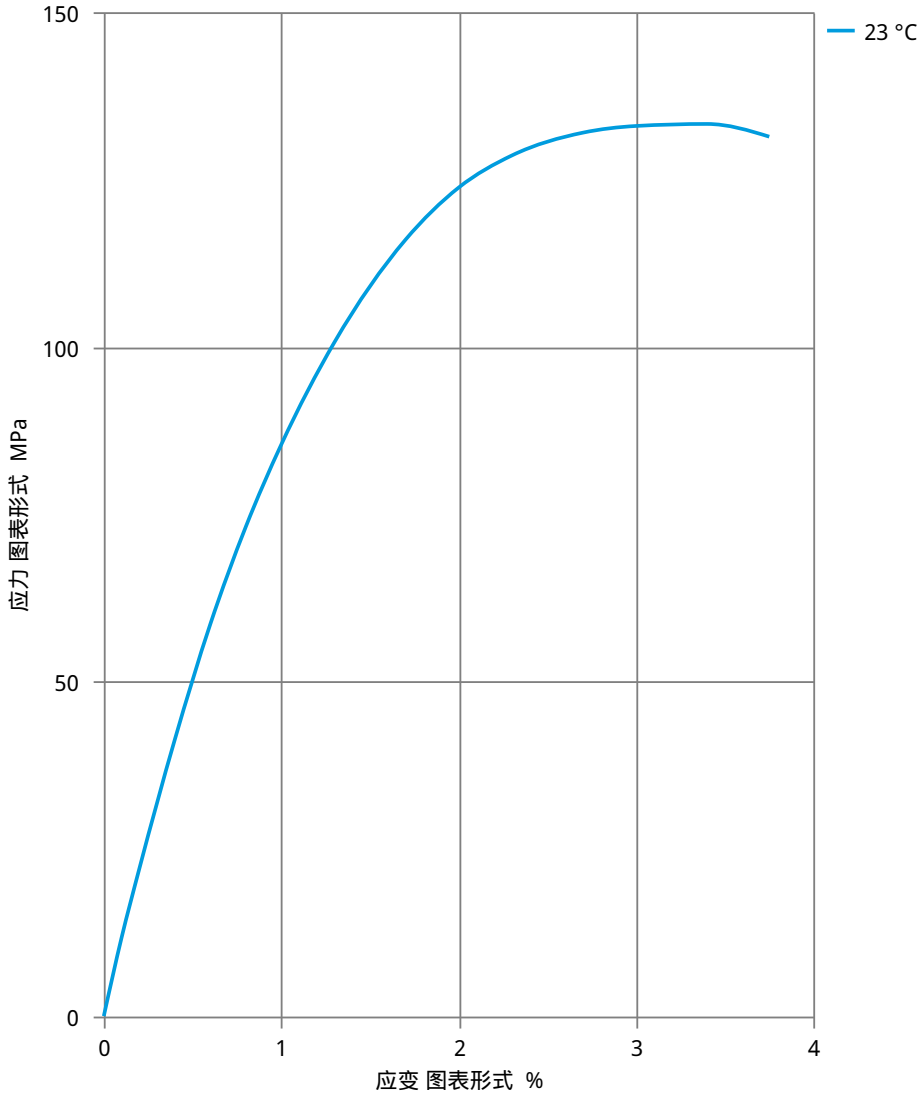
## 应力 - 应变 (dry)



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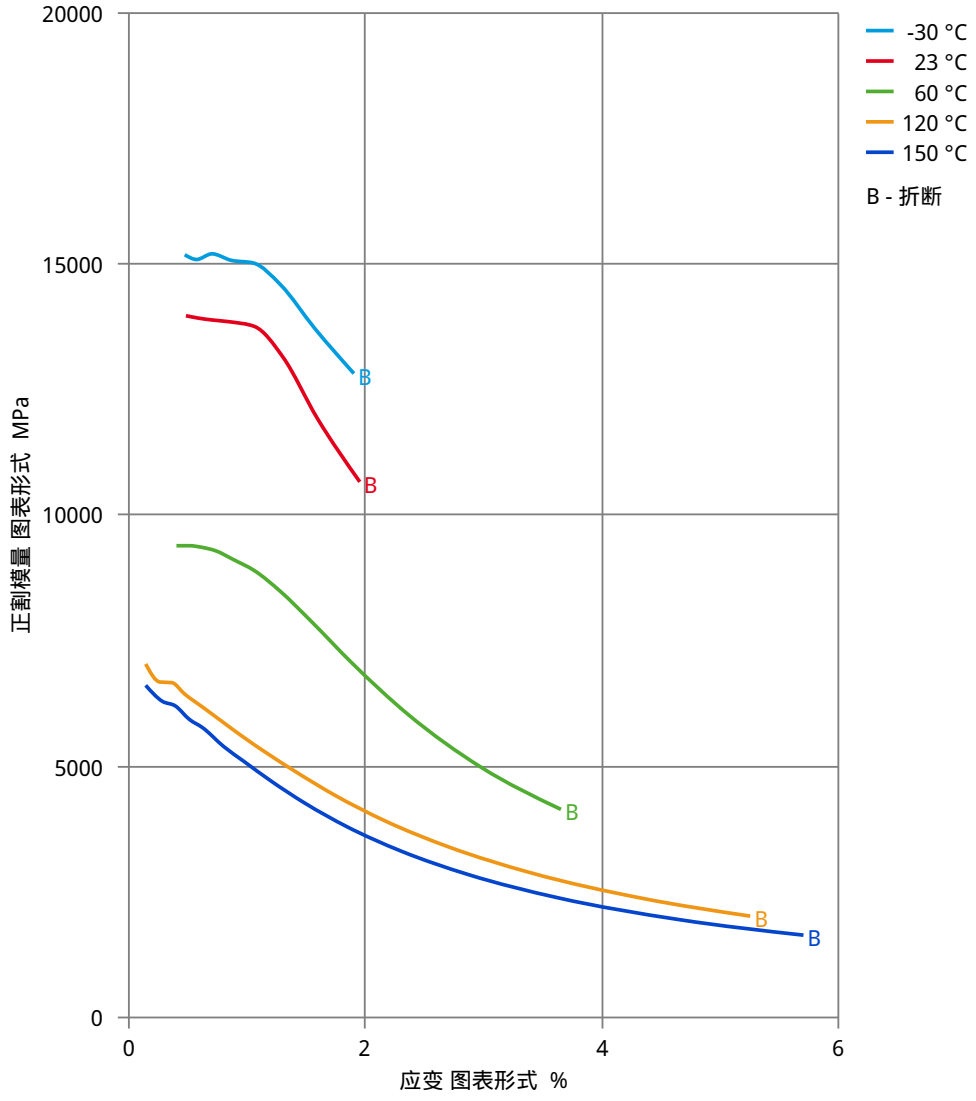
## 应力 - 应变 (cond.)



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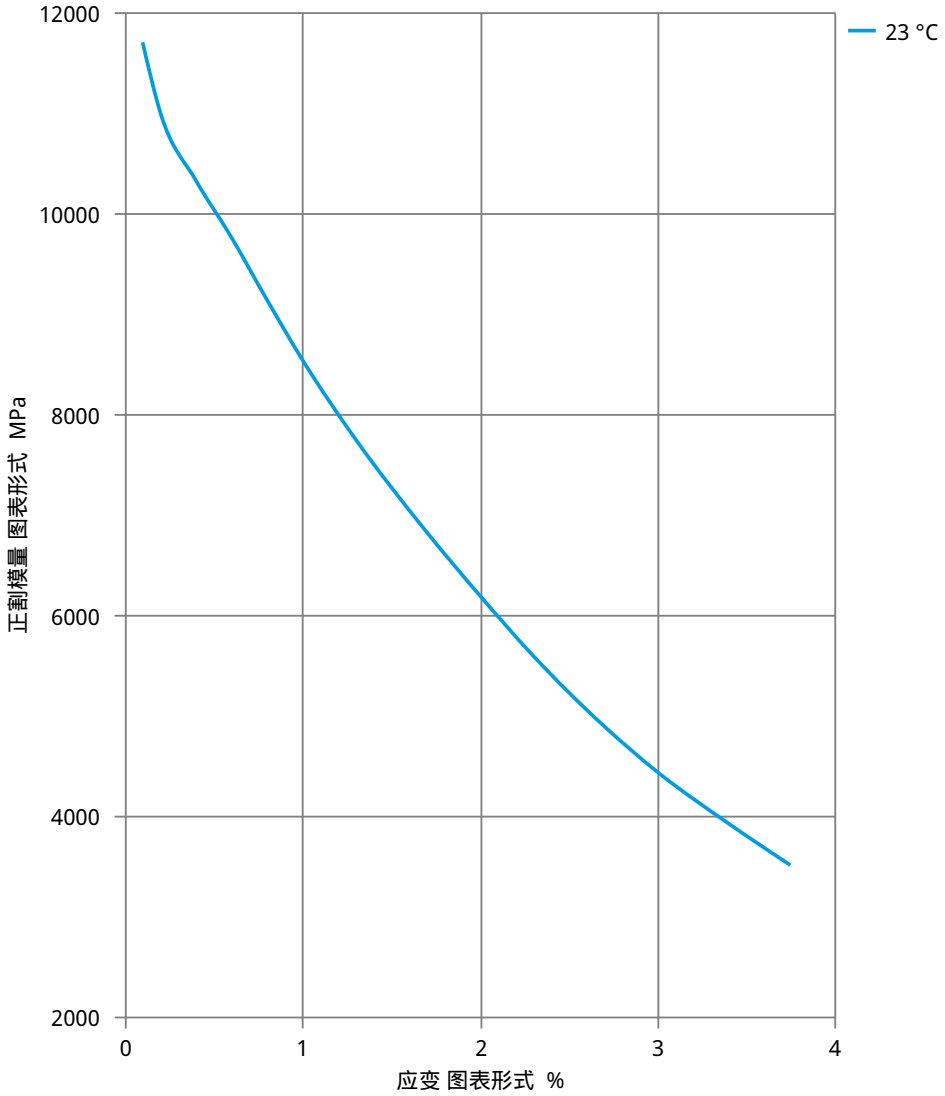
## 正割模量 - 应变 (dry)



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## 正割模量 - 应变 (cond.)






Revised: 2026-05-05 Source: Celanese Materials Database

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