



Delrin® 111DP NC010

ACETAL RESIN

Delrin®聚甲醛树脂的共性包括优异的机械性能和物理性能比如高机械强度和刚性，优异的耐疲劳性能和抗冲击性，同时具有突出的耐潮湿、汽油、润滑剂、溶剂和多种其他中性化学品。Delrin®聚甲醛树脂还具有卓越的尺寸稳定性和良好的电绝缘性能，具有天然弹性、自润滑，可制成多种颜色和特殊规格。

Delrin®聚甲醛树脂通常应用于具有严苛要求的汽车、家用电器、运动、工业工程、电子和消费品工业。

Delrin® 111DP NC010是一种成核化 高粘度均聚甲醛

总说明

树脂鉴别	POM	ISO 1043
制品标识码	>POM<	ISO 11469

流变性能

熔体体积流动速度, MVR	2.1 cm ³ /10min	ISO 1133
熔体质量流动速率	2.4 g/10min	ISO 1133
温度	190 °C	ISO 1133
负荷	2.16 kg	ISO 1133
熔体质量流率, 温度	190 °C	ISO 1133
熔体质量流率, 载荷	2.16 kg	ISO 1133
模塑收缩率, 平行	2.1 %	ISO 294-4, 2577
模塑收缩率, 垂直	1.9 %	ISO 294-4, 2577

机械性能

拉伸模量	3200 MPa	ISO 527-1/-2
屈服应力	73 MPa	ISO 527-1/-2
屈服伸长率	24 %	ISO 527-1/-2
名义断裂伸长率	35 %	ISO 527-1/-2
弯曲模量	3000 MPa	ISO 178
拉伸蠕变模量, 1h	2300 MPa	ISO 899-1
拉伸蠕变模量, 1000h	1100 MPa	ISO 899-1
简支梁无缺口冲击强度, +23°C	N kJ/m ²	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	340 kJ/m ²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	11 kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	9.5 kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -40°C	10 kJ/m ²	ISO 179/1eA
洛氏硬度	94 -	ISO 2039-2
洛氏硬度, Rockwell	122 -	ISO 2039-2
Poisson's ratio	0.37 -	



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热性能

熔融温度, 10°C/min	178 °C	ISO 11357-1/-3
热变形温度, 1.80 MPa	98 °C	ISO 75-1/-2
热变形温度, 0.45 MPa	165 °C	ISO 75-1/-2
线膨胀系数, 平行	100 E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直	100 E-6/K	ISO 11359-1/-2
熔体的比热	3000 J/(kg K)	
相对温度指数, 电气性能, 0.75mm	50 °C	UL 746B
相对温度指数, 电气性能, 1.5mm	110 °C	UL 746B
相对温度指数, 电气性能, 3mm	110 °C	UL 746B
相对温度指数, 冲击, 0.75mm	50 °C	UL 746B
相对温度指数, 冲击, 1.5mm	85 °C	UL 746B
相对温度指数, 冲击, 3mm	90 °C	UL 746B
相对温度指数, 强度, 0.75mm	50 °C	UL 746B
相对温度指数, 强度, 1.5mm	90 °C	UL 746B
相对温度指数, 强度, 3mm	95 °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	0.8 mm	IEC 60695-11-10
UL注册	yes -	UL 94
FMVSS Class	B -	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	25 mm/min	ISO 3795 (FMVSS 302)

其它性能

密度	1420 kg/m ³	ISO 1183
熔体密度	1160 kg/m ³	

VDA性能

甲醛散发	<8 mg/kg	VDA 275
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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	≤ 0.2 %
最优熔体温度	215 °C
注塑 熔体温度	210 °C
注塑 熔体温度	220 °C
螺杆最大切线速度	0.2 m/s

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最优模具温度	90 °C
模具温度	80 °C
模具温度	100 °C
保压范围	90 - 110 MPa
保压时间	7.5 s/mm
回火时间, 可选	30 min/mm
回火温度	160 °C

薄膜挤出成型

干燥温度	75 - 85 °C
干燥时间, 除湿干燥机	2 - 4 h
加工前水分含量	≤ 0.2 %
最优熔体温度	200 °C
熔体温度范围	195 - 205 °C

典型数据

添加剂

脱模助剂

成型

注塑

Drying is recommended, but not necessary for newly opened packaging stored in a dry location.

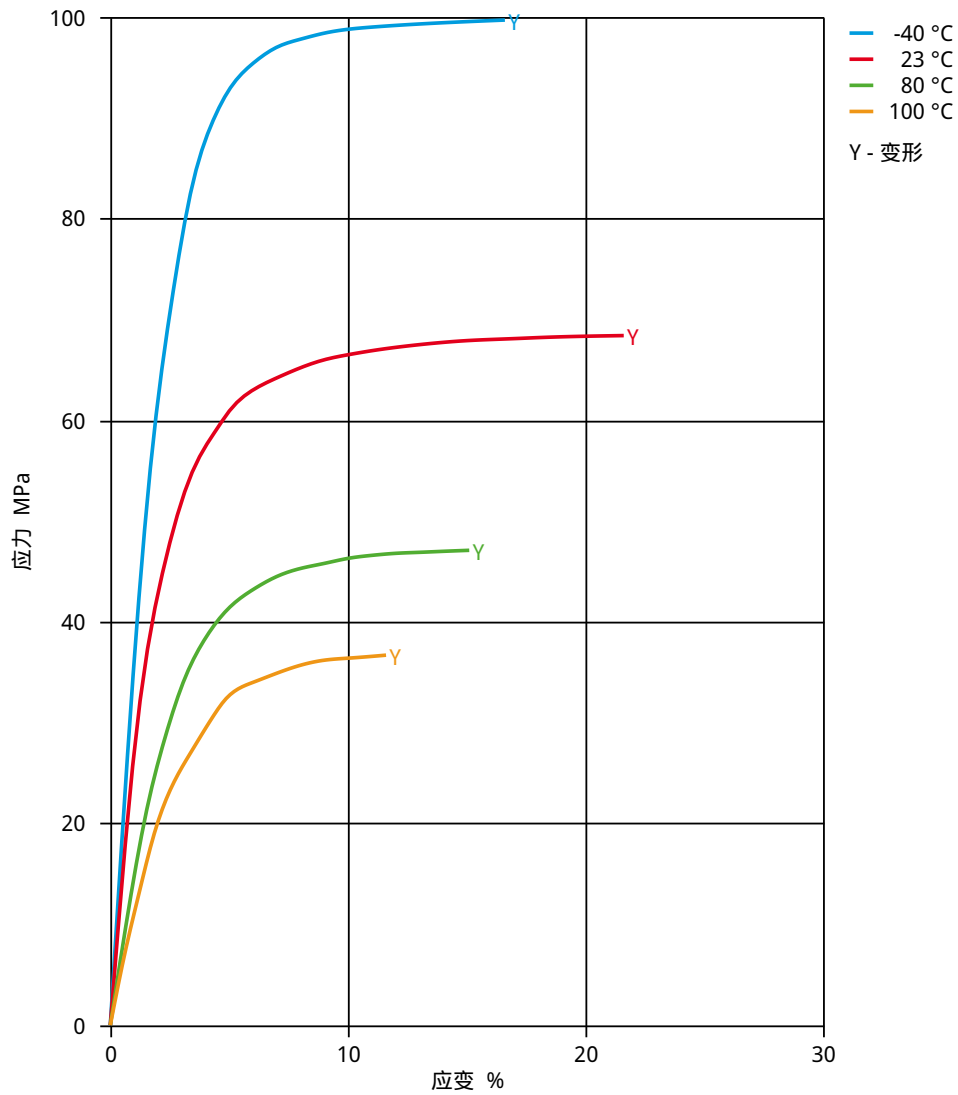
Follow the drying guidelines above in the following cases:

- If moisture is above the Processing Moisture Content recommendation,
- When a resin container is damaged,
- When the material is not properly stored in a dry place at room temperature, or
- When packaging stays open for a significant time.

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ACETAL RESIN

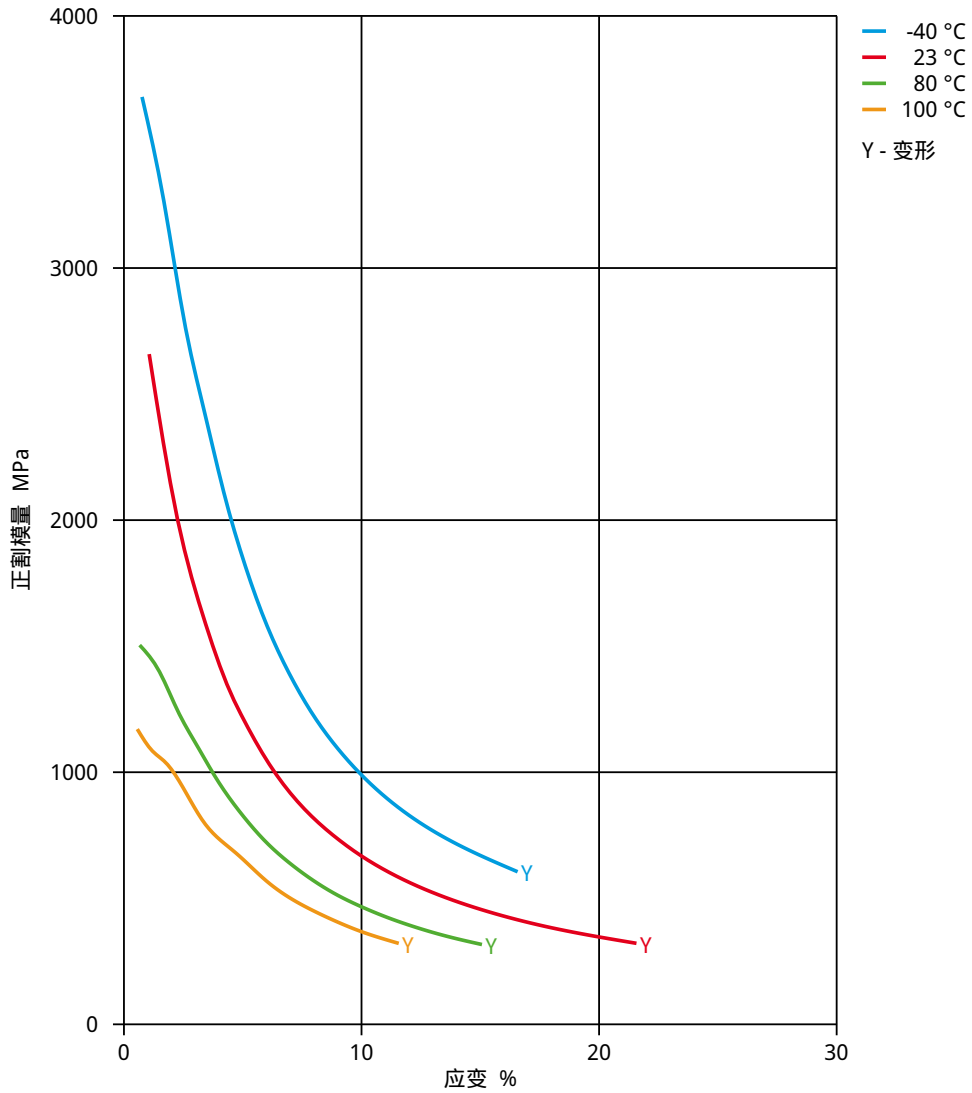
应力 - 应变.



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正割模量 - 应变.



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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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