

Delrin® 100 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® 100 NC010是一种高粘度均聚甲醛

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	1.9 cm ³ /10min	ISO 1133
熔体质量流动速率	2.2 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	2.2 %	ISO 294-4, 2577
模塑收缩率, 垂直	1.9 %	ISO 294-4, 2577
模塑收缩率, 平行	3.0 %	ISO 294-4
模塑收缩率, 垂直	2.4 %	ISO 294-4

机械性能

拉伸模量	2900 MPa	ISO 527-1/-2
屈服应力	71 MPa	ISO 527-1/-2
屈服伸长率	26 %	ISO 527-1/-2
名义断裂伸长率	45 %	ISO 527-1/-2
弯曲模量	2800 MPa	ISO 178
弯曲强度	93 MPa	ISO 178
弯曲应力 (3.5%应变)	77 MPa	ISO 178
压缩强度	110 MPa	ISO 604
拉伸蠕变模量, 1h	2900 MPa	ISO 899-1
拉伸蠕变模量, 1000h	1600 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	425 kJ/m ²	ISO 179/1eU
简支梁缺口冲击强度, +23°C	15 kJ/m ²	ISO 179/1eA
简支梁缺口冲击强度, -30°C	13 kJ/m ²	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	14 kJ/m ²	ISO 180/1A
悬臂梁缺口冲击强度, -40°C	13 kJ/m ²	ISO 180/1A
洛氏硬度	90 -	ISO 2039-2



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洛氏硬度, Rockwell	121 -	ISO 2039-2
球压痕硬度	173 MPa	ISO 2039-1
Poisson's ratio	0.37 -	
耐磨性	4 ^[DS] mm ³	ISO 4649

[DS]: Derived from similar grade

热性能

熔融温度, 10°C/min	178 °C	ISO 11357-1/-3
热变形温度, 1.80 MPa	95 °C	ISO 75-1/-2
热变形温度	115 °C	ISO 75-1/-2
热变形温度, 0.45 MPa	160 °C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	160 °C	ISO 306
维卡软化温度, 50°C/h 10N	175 °C	ISO 306
线性热膨胀系数, 平行, -40-23°C	100 E-6/K	ISO 11359-1/-2
线膨胀系数, 平行	110 E-6/K	ISO 11359-1/-2
线性热膨胀系数, 垂直, -40-23°C	100 E-6/K	ISO 11359-1/-2
线膨胀系数, 垂直	110 E-6/K	ISO 11359-1/-2
有效导热率 ^a	1.0E-7 m ² /s	
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	105 °C	UL 746B
相对温度指数, 电气性能, 3mm	105 °C	UL 746B
相对温度指数, 电气性能, 6mm	105 °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	85 °C	UL 746B
相对温度指数, 冲击, 6mm	85 °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	90 °C	UL 746B
相对温度指数, 强度, 6mm	90 °C	UL 746B
温度指数, 拉伸强度	110 °C	IEC 60216-1
温度指数, 拉伸强度	125 °C	IEC 60216-1

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
灼热丝燃烧指数, 1mm	550 °C	IEC 60695-2-12
灼热丝燃烧指数, 2mm	550 °C	IEC 60695-2-12
灼热丝燃烧指数, 3mm	550 °C	IEC 60695-2-12

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灼热丝起燃温度, 0.75mm	550 °C	IEC 60695-2-13
灼热丝起燃温度, 0.4mm	550 °C	IEC 60695-2-12
灼热丝起燃温度, 1mm	550 °C	IEC 60695-2-13
灼热丝起燃温度, 1.5mm	550 °C	IEC 60695-2-13
灼热丝起燃温度, 2mm	550 °C	IEC 60695-2-13
灼热丝起燃温度, 3mm	550 °C	IEC 60695-2-13
FMVSS Class	B -	ISO 3795 (FMVSS 302)
燃烧速率, 厚度: 1毫米	40 mm/min	ISO 3795 (FMVSS 302)

电性能

相对介电常数., 100Hz	3.9 -	IEC 62631-2-1
相对介电常数., 1MHz	3.8 -	IEC 62631-2-1
介质损耗因子, 100Hz	10 E-4	IEC 62631-2-1
介质损耗因子, 1MHz	55 E-4	IEC 62631-2-1
体积电阻率	>1E13 Ohm.m	IEC 62631-3-1
表面电阻率	3E13 Ohm	IEC 62631-3-2
介电强度	41 kV/mm	IEC 60243-1
相对漏电起痕指数	600 -	IEC 60112

其它性能

吸湿性, 2mm	0.2 %	类似ISO 62
吸水性, 2mm	0.9 %	类似ISO 62
密度	1420 kg/m ³	ISO 1183
熔体密度	1190 kg/m ³	
吸水性, 浸泡 24小时	0.27 %	类似ISO 62

VDA性能

雾化	0.1 mg	ISO 6452
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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
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	8 s/mm
回火时间, 可选	30 min/mm

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回火温度 160 °C

薄膜挤出成型

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	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.

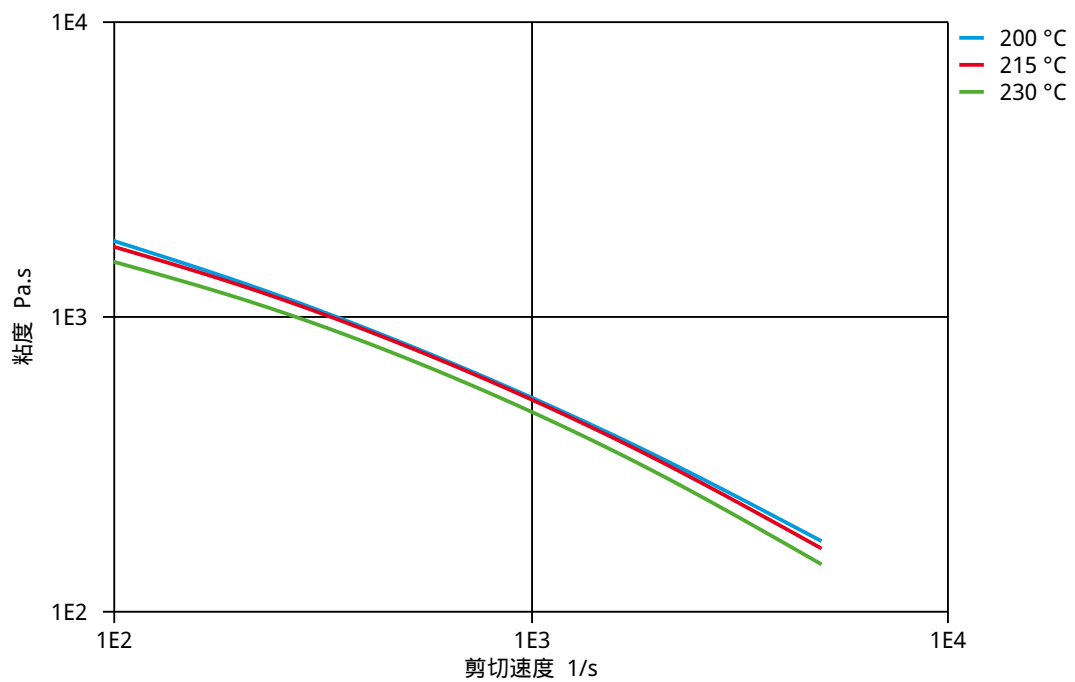
Follow the drying guidelines above in the following cases:

- 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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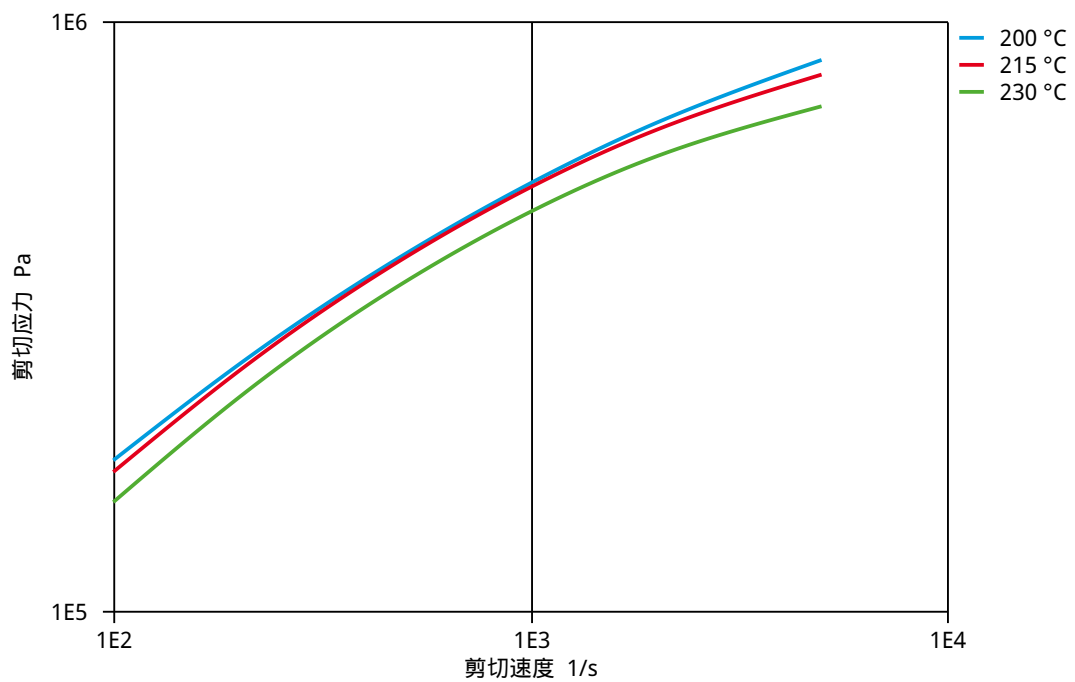
粘度 - 剪切速度



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ACETAL RESIN

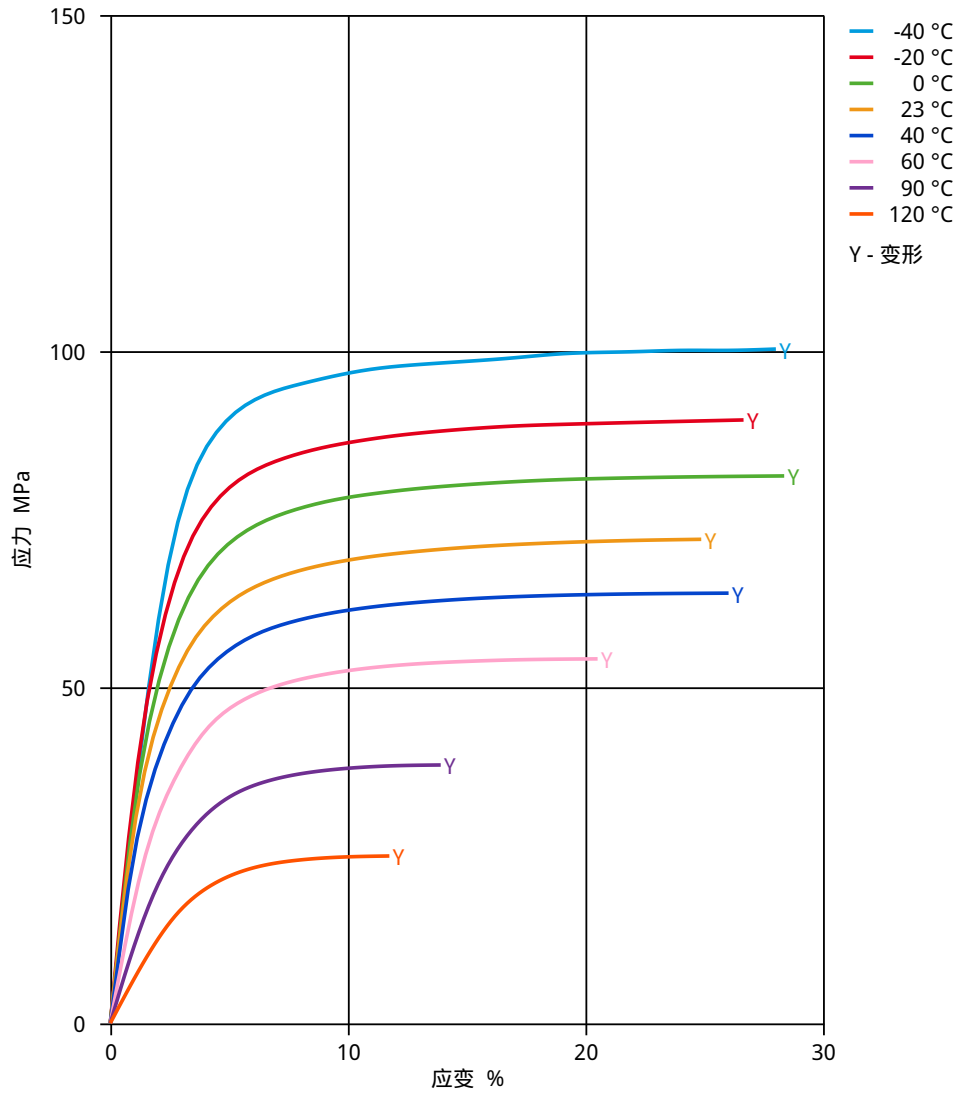
剪切应力 - 剪切速度



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ACETAL RESIN

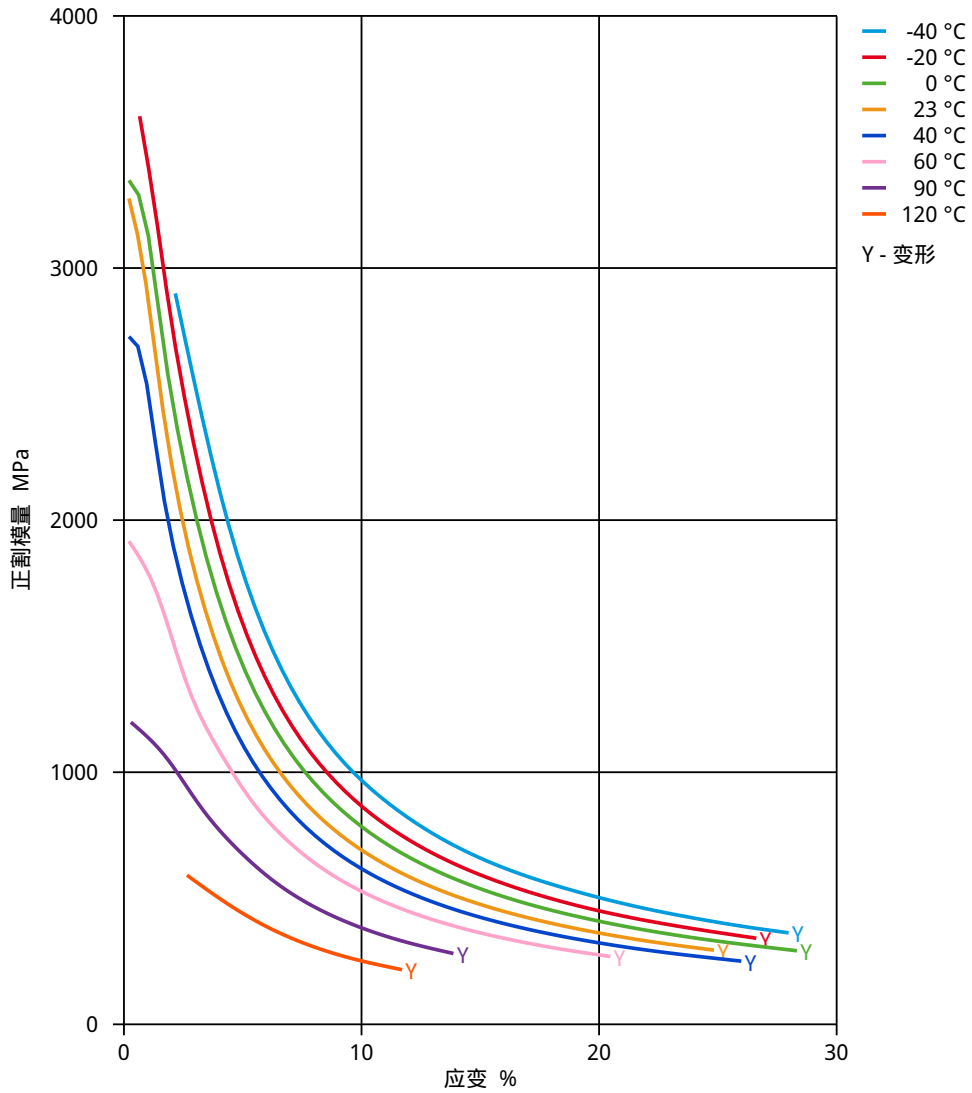
应力 - 应变.



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ACETAL RESIN

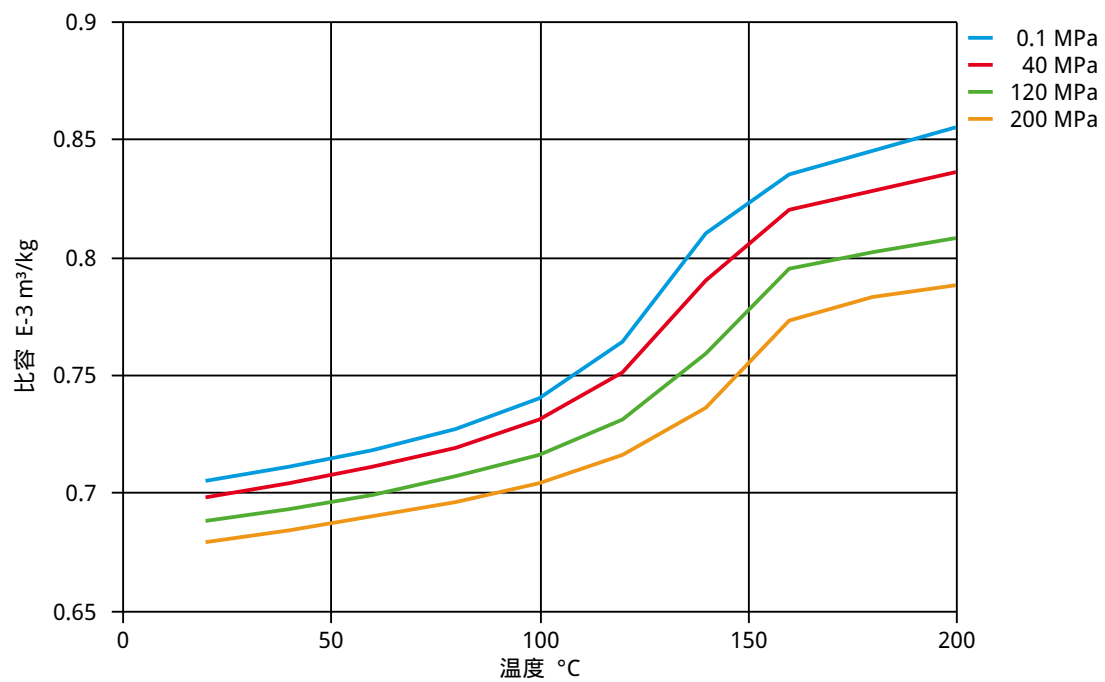
正割模量 - 应变.



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ACETAL RESIN

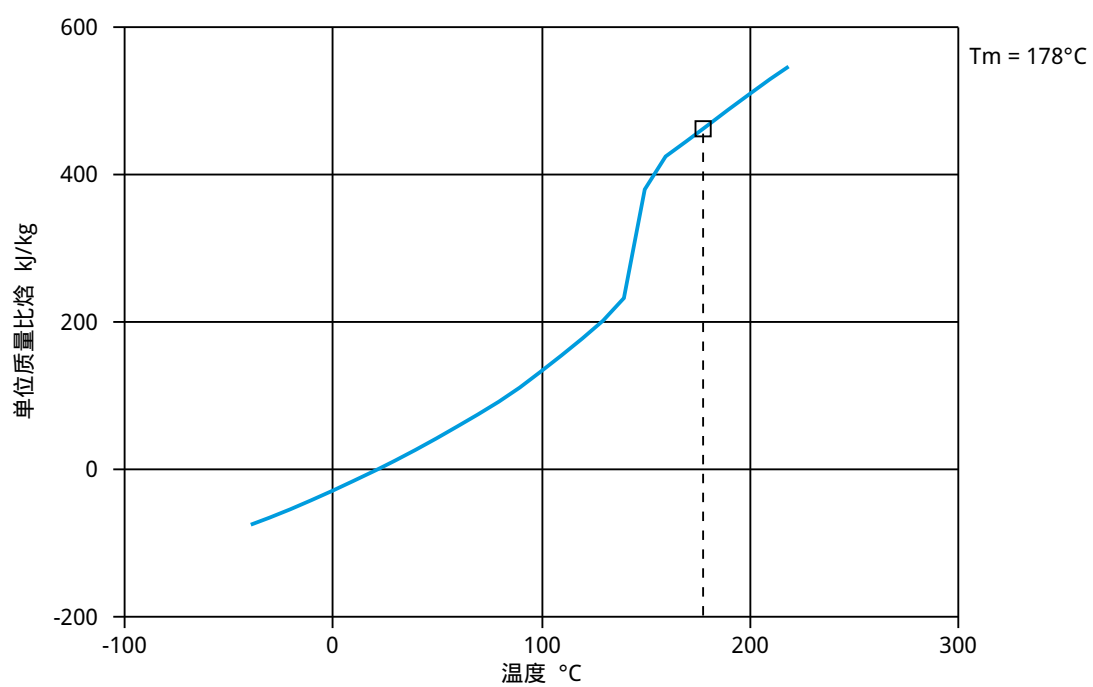
比容 - 温度(pvT)



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单位质量比焓 - 温度(DSC)

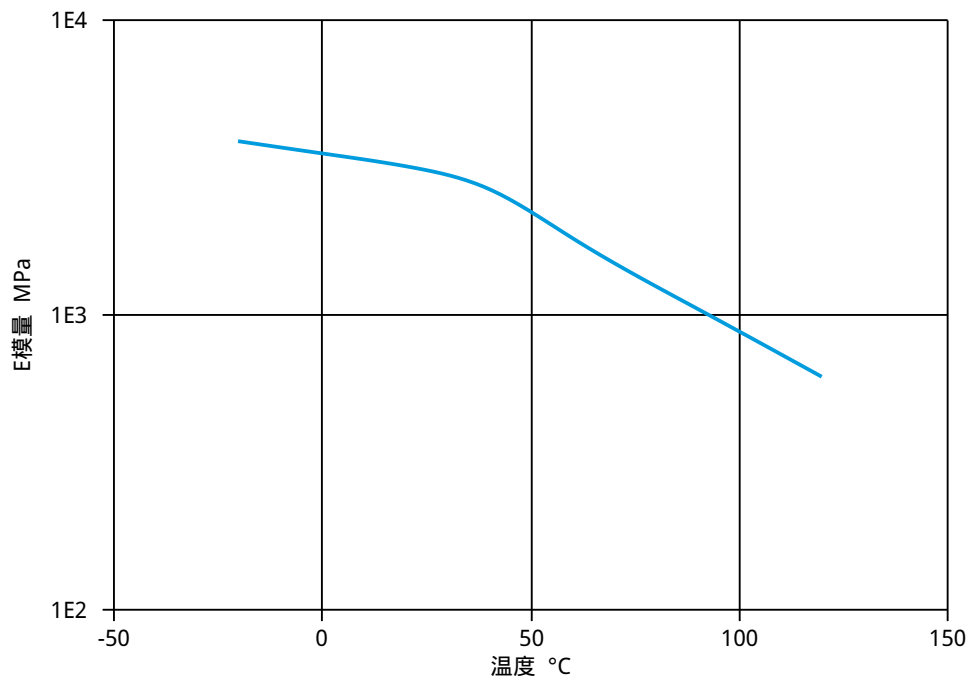




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拉伸模量 - 温度

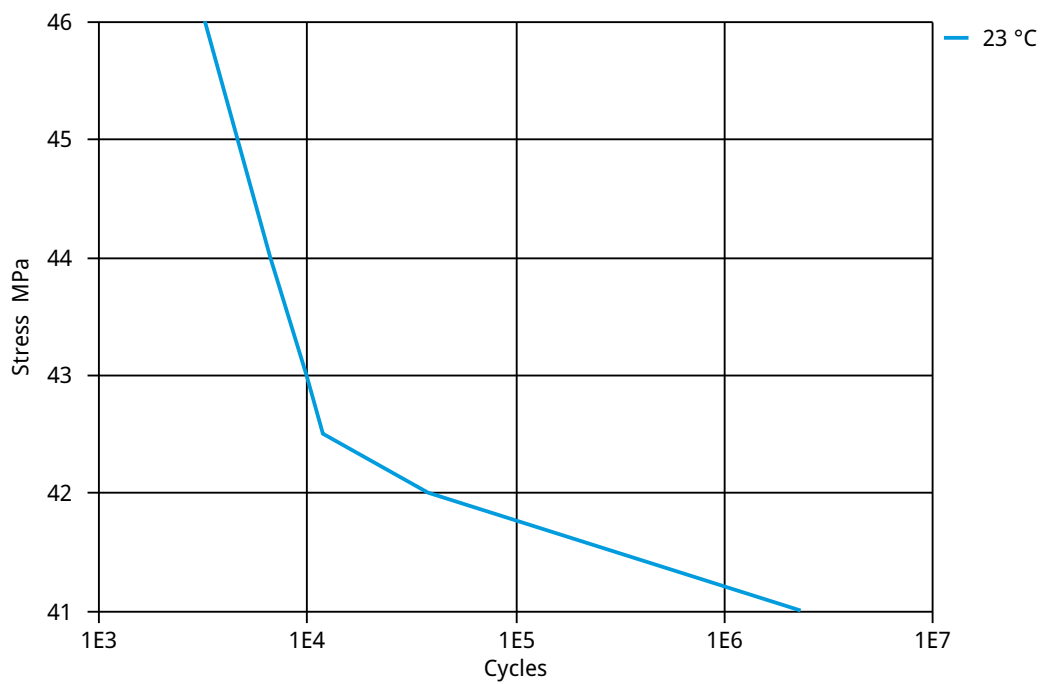




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疲劳(Wöhler), 拉伸, 10Hz, R=0. mm



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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
- ✗ 滑油OS206 304 Ref.Eng.Oil, ISP, 135°C
- ✗ 自动准双曲面齿轮油壳牌牌Donax, 135°C
- ✗ 水力油Pentosin CHF 202, 125°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

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- ✓ 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
- ✗ 柴油EN590, 100°C

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
- ✗ DOT4号刹车油, 120°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

抑菌方法

- ✓ 环氧乙烷

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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