RÖHM

ALBIS

PLEXIGLAS® Resist AG 100

PMMA-I Röhm GmbH

Productprofil

PLEXIGLAS® Resist AG 100 is an amorphous thermoplastic molding compound, based on impact-modified polymethyl methacrylate (PMMA).

PLEXIGLAS® molding compounds have the following typical properties:

- high weather resistance
- excellent transmission and clarity
- brilliant appearance
- low weight – half the weight of glass
- 100% recyclable – best life cycle assessment as compared with glass and PC
- the pleasant feel and sound of the molded parts.

PLEXIGLAS® Resist AG 100 is characterized by the following special properties:

- highest breaking strength and impact strength (30 times higher breaking strength than glass)
- improved resistance to stress cracking
- balanced property profile
- clear reduction of reversible haze at very high and low temperatures
- increased heat deflection temperature under load
- AMECA listing, CAMPUS and moldflow data available

Application and approvals

PLEXIGLAS® Resist AG 100 has a balanced property profile and was specially developed for automotive glazing. This specialty molding compound meets all the relevant requirements for this field of application.
Apart from reducing the vehicle weight, injectionmolded glazing offers maximum freedom of design and functional integration, such as the integration of lighting or panel trim. An approval to ECE R43 is required for use as automotive glazing. The material has undergone and passed all tests in line with ECE R43.
The test report of the Materials Testing Agency in North Rhine-Westphalia is available for systems based on PLEXIGLAS® Resist AG 100 for rear side windows, roof and rear windows. Further details are available on request.

Processing

PLEXIGLAS® Resist AG 100 can be processed by injection molding of parts or by sheet extrusion and coextrusion. PLEXIGLAS® Resist AG 100 can be injection-molded on processing machines with a standard three-section screw for engineering thermoplastics in one-component or twocomponent processes.

Fabrication

Forming after extrusion
The forming conditions are the same as for extruded PLEXIGLAS®. The high optical quality of the surface after forming is also comparable. Predrying is not necessary in most cases. During heating, the material turns slightly white, but this disappears completely upon cooling.
Painting and screen printing
In principle, the same paints and lacquers can be used as for extruded PLEXIGLAS®. However, we recommend that you carry out preliminary tests in this case.
Coating
Surface coating, for example with polysiloxane systems, can be carried out by means of conventional processes.
Please send any questions on fabrication to **automotive-glazing@evonik.com**.

Physical Form / Packaging

PLEXIGLAS® Resist molding compounds are supplied as pellets of uniform size in 25kg polyethylene bags or 500kg boxes with PE lining. Other types of packaging are available on request.

+135-3858-6433 (GuangDong)
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Sustainability

From production to recycling, the environmental impact of PLEXIGLAS® was tested in the life cycle assessment in accordance with ISO 14040ff and received a positive rating. In addition to its durability, PLEXIGLAS® offers convincing recyclability. It can be completely recycled by chemical conversion to its starting materials or directly reused.
Thus, in a study prepared by PE International AG, the environmental impacts during manufacture, application and disposal of automotive glazing made from PLEXIGLAS® were positively rated in comparison with reference systems (single-layer safety glass, laminated safety glass, PC). We will be pleased to provide more details on request.

流变性能	数值	单位	试验方法
ISO数据			
熔体体积流动速度, MVR	1.1	cm³/10min	ISO 1133
温度	230	°C	-
载荷	3.8	kg	-

机械性能	数值	单位	试验方法
ISO数据			
拉伸模量	2200	MPa	ISO 527
屈服应力	55	MPa	ISO 527
屈服伸长率	5	%	ISO 527
名义断裂伸长率	45	%	ISO 527
无缺口简支梁冲击强度, +23°C	120	kJ/m²	ISO 179/1eU

热性能	数值	单位	试验方法
ISO数据			
玻璃化转变温度 (10°C/min)	112	°C	ISO 11357-1/-2
热变形温度, 1.80 MPa	100	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	105	°C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	105	°C	ISO 306
线性热膨胀系数, 平行	110	E-6/K	ISO 11359-1/-2
1.5mm名义厚度时的燃烧性	HB	class	UL 94
测试用试样的厚度	1.6	mm	-
UL注册	是的	-	-

其它性能	数值	单位	试验方法
ISO数据			
吸水性	1.5	%	类似ISO 62
吸湿性	0.5	%	类似ISO 62
密度	1160	kg/m³	ISO 1183

模塑测量的特殊性能	数值	单位	试验方法
ISO数据			
透光率	91	%	ISO 13468-1, -2

试样制备条件	数值	单位	试验方法
ISO数据			
注塑, 熔体温度	250	°C	ISO 294
注塑, 模具温度	82	°C	ISO 294
注塑, 注射速度	195	mm/s	ISO 294

加工推荐（注塑）	数值	单位	试验方法
预干燥-温度	70 - 80	°C	-
预干燥-时间	3 - 4	h	-
注塑熔体温度	235 - 270	°C	-
模具温度	60 - 80	°C	-

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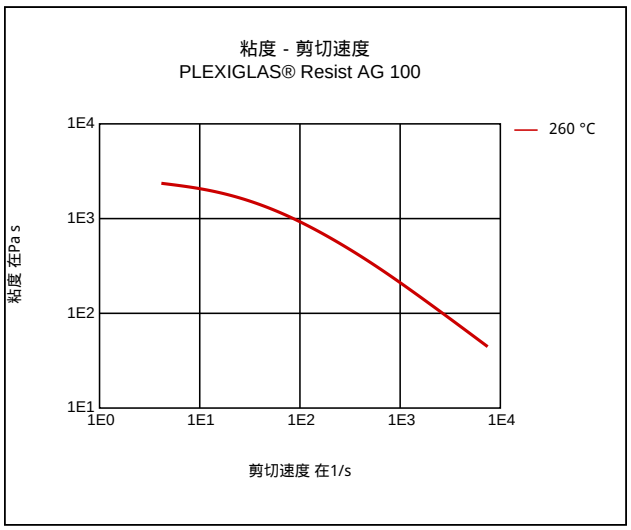
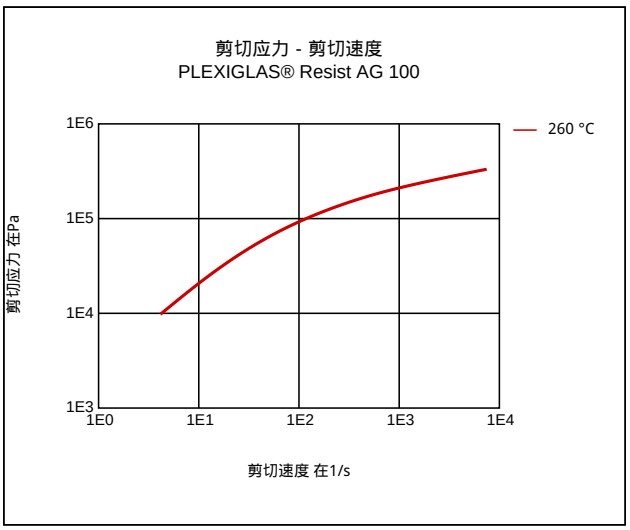
函数

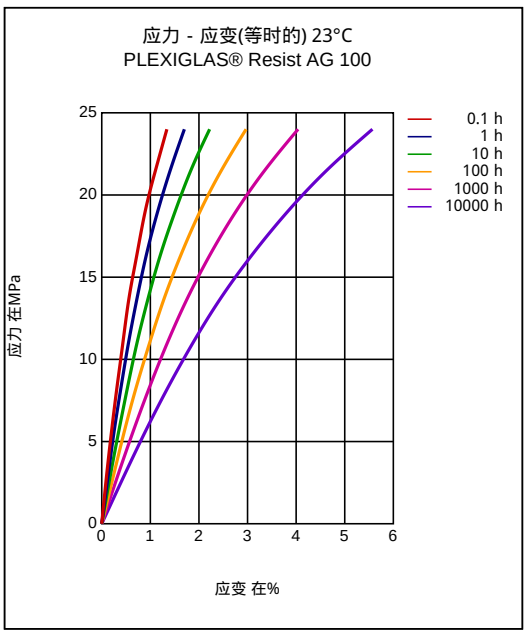
粘度 - 剪切速度



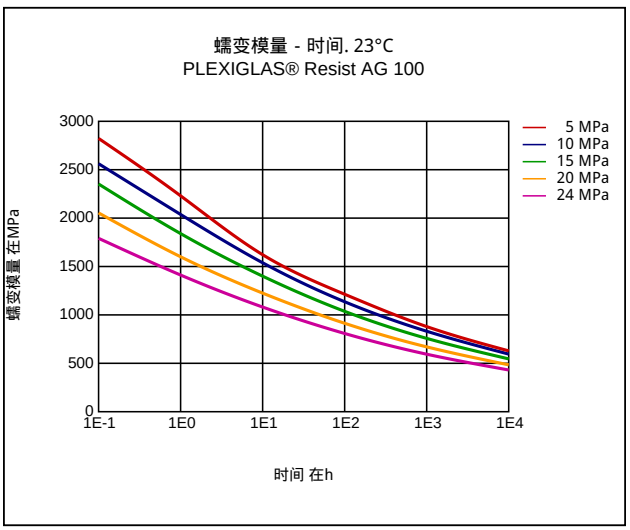
剪切应力 - 剪切速度



应力 - 应变(等时的) 23°C



蠕变模量 - 时间. 23°C



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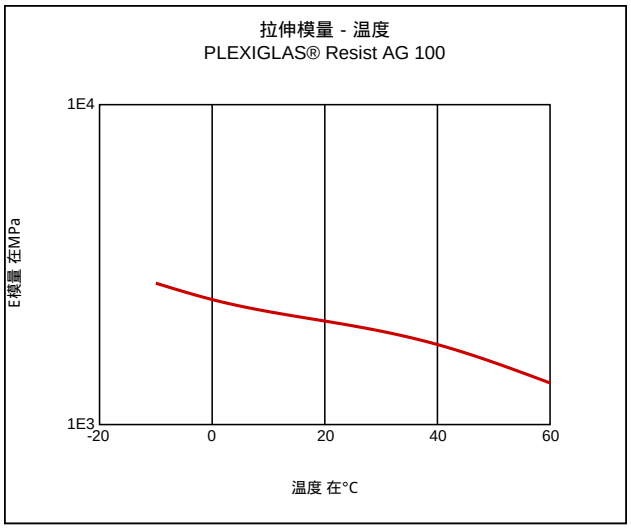
拉伸模量 - 温度



特征

加工方法
注塑, 薄膜挤出成型, 异型材挤出成型, 片材挤出成型, 其它挤出成型, 热成型

供货形式
粒料

添加剂
脱模助剂

特殊性能
高冲击韧性的/经抗冲改性的, 经光稳处理的/耐光的, 经耐紫外线处理的/耐气候的, 透明.

特征
无定形

耐化学试剂
耐环境应力裂纹性

应用
汽车

注塑

PREPROCESSING
Predrying temperature: 70 - 80°C
Predrying time in a desiccant-type drier: 3 - 4 h
PROCESSING
Melt temperature: 235 - 270°C
Mold temperature:60 - 80°C

耐化学性

酸类

- ✔ 柠檬酸溶液 (10g/100g) (23°C)
- ✔ 乳酸 (10g/100g) (23°C)
- ✔ 硫酸 (38g/100g) (23°C)
- ✔ 硫酸 (5g/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)

碳氢化合物

- ✔ 正乙烷 (23°C)

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标准燃油

- ✔ 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)

其它

- ✔ 油酸 (50g/100g) + 橄榄油 (50g/100g) (23°C)
- ✔ 水 (23°C)