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Data sheet: vacuum casting resin 8051

Description			**ABS-type**
Features			**High temperature resistance, strong flexing properties**
Suitable for			**Panels, enclosures**
Cured properties			**Test / ISO standard where applicable**
Colour		White	
Transparency		Translucent	
Shore hardness	At 23 °C At 60 °C At 80 °C	84 D 78 D 77 D	868
Flexural strength		95 N/mm^2	178
Flexural modulus		2200 N/mm^2	178
Tensile strength		63 N/mm^2	R 527
Tensile modulus		2150 N/mm^2	R 527
Izod impact		16 kJ/m^2	180
Yield strength		62 N/mm^2	R 527
Elongation yield		5 %	
Elongation at break		18 %	R 527
Tear strength		Not measured	34
Thermal conductivity		0.225 W/mK	BS 874
Coefficient of linear thermal expansion		8.7×10^{-5}	
Load deformation temperature	At 1.8 Mpa At 0.45 Mpa	93 °C 102 °C	
Heat deflection temperature		92 °C	(test piece 110 mm × 12.7 mm × 6.4 mm)
Glass transition temperature		90 °C	
Processing information			**Notes**
Viscosity	Part A Part B	750 cPs 180 cPs	At 25 °C
Specific gravity	Part A Part B	1.12 1.19	At 25 °C
Mix ratio A:B		100:200	By weight
Mixing time		30 s to 60 s	
Resin temperature		40 °C	Heating chamber
Mould temperature		70 °C	Heating chamber
Curing temperature		70 °C	Heating chamber
Curing time in mould		40 min	
Pot life		300 s	100 g at 25 °C
Post curing process		None	
Typical shrinkage		0.2 % to 0.3 %	

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Handling procedure

Casting procedure

- Shake unopened A and B component cans vigorously for 10 s to 15 s
- Pre-heat mold in oven at 70 °C
- Pre-heat unopened A and B component cans in oven at 70 °C for 2 hours, then place in oven at 40 °C to stabilise prior to use
- Weigh A and B components into separate cups, allowing for cup loss (the amount of resin left in cup A after tipping)
- Add colour pigment to cup A
- Place filled cups in the machine and attach mixing paddle to cup B
- Start vacuum pump
- Switch on mixer motor
- Wait 10 minutes after reaching maximum vacuum level before mixing
- Pour contents of cup A into cup B and mix as fast as possible without splashing
- Pour mixed resin into silicone mould and leak vacuum chamber before the end of the pot life
- Place filled mold in oven to cure resin
- For full instructions on casting procedures refer to *Vacuum Casting Technique: a guide for new users,* available at www.renishaw.com

Special notes

- Exact mould temperature is important
- Exact resin temperature is important
- Use no more than 2 % of total weight colour pigment

Product information

- **Pot life**
  Resin 8051 can be supplied with long pot life A component (10 min, LP/A). Contact Renishaw for details.
- **Mould life**
  Mould life can be increased by using the correct Renishaw release agent and demoulding the casting immediately after curing. Castings over 2 mm thick can be demoulded after 30 min, but need to be cured for a further 60 min at 70 °C.
- **Storage**
  Store unopened cans at > 20 °C
  Protect against frost
  Store opened cans in oven at 40 °C with caps on
  Both components are sensitive to humidity.
- **In case of crystallisation of B-component**
  Place cans in oven at 70 °C for 2 hours to 4 hours and stir resin afterwards.

Please follow the procedure for preparing the vacuum casting system as described in the system operation manual!

Always observe the instructions in the Safety Data Sheets of the product and always work in accordance with the safety instructions of the materials manufacturer! Safety Data Sheets can be found at www.renishaw.com

Wear suitable respiratory protection, safety gloves and safety goggles during the entire filling procedure in accordance with the Safety Data Sheets.

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