RAKU® TOOL EI-2500 / EH-2973

Epoxy Infusion System

Temperature resistant

Key Properties

- Room temperature cure
- No brittleness after room temperature cure overnight, easy demolding
- Good wetting properties, flows very well under vacuum
- Temperature resistant up to 130°C

Applications

- RTM
- Resin Infusion

Processing Properties

			EI-2500	EH-2973
Color	visual		Transparent	Yellowish
Mix ratio		parts by weight	100	32
		parts by volume	100	40
Density	ISO 1183	g/cm³	ca. 1.17	ca. 0.94
Viscosity at 25 °C	DIN 53019-1	mPa·s	800 – 1,300	50 – 80

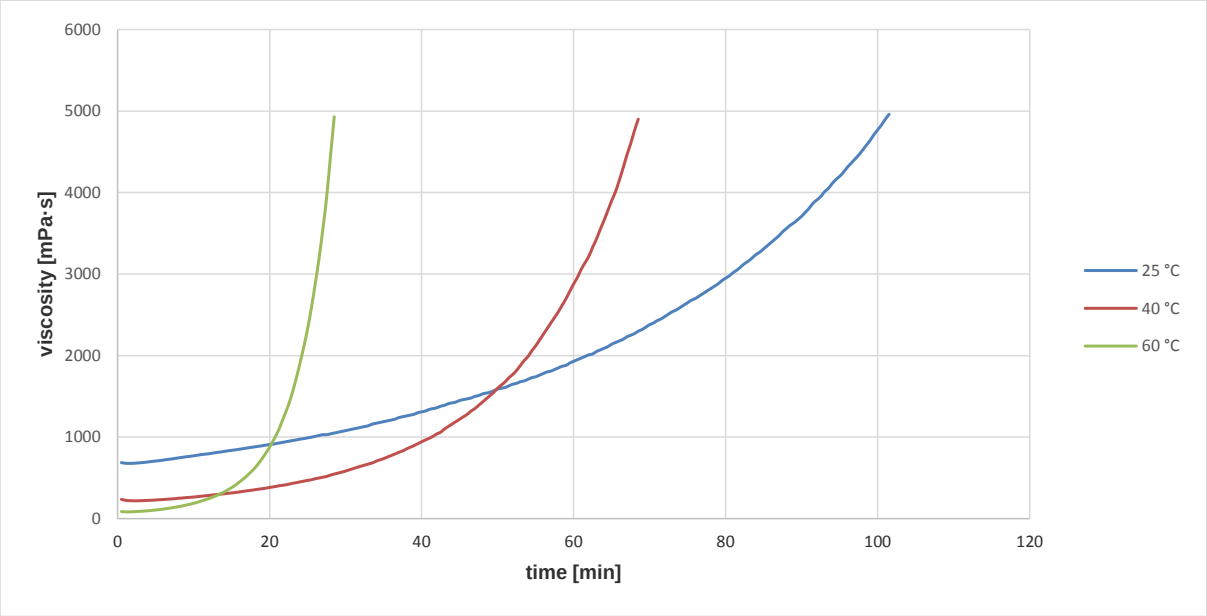
				EI-2500 / EH-2973
Mix viscosity at 25 °C		DIN 53019-1	mPa·s	500 – 700
Pot life	at 25 °C	100 ml	min	130 – 160
	at 40 °C	100 ml	min	50 – 55
	at 25 °C	500 ml	min	70 – 80
Max. layer thickness			mm	8
Demold time			h	24

Cured / Mechanical Properties

Cure: 16h at 20-25 °C + post cure			EI-2500 / EH-2973	
			8h at 80 °C	8h at 120 °C
Appearance	visual		Yellowish	Yellowish
Density	ISO 1183	g/cm³	ca. 1.1	ca. 1.1
Coefficient of linear thermal expansion	ISO 11359	$10^{-6}K^{-1}$	70 – 80	60 – 70
Glass Transition Temperature, Tg	DSC	°C	108 – 113	130 – 135
Tensile strength	ISO 527	MPa	75 – 80	75 – 80
Flexural strength	ISO 178	MPa	125 – 130	125 – 130
Flexural modulus	ISO 178	MPa	2,700 – 3,200	2,700 – 3,200

Viscosity build-up

			25 °C	40 °C	60 °C
Initial viscosity	DIN 53019-1	mPa·s	500 – 700	200 - 250	80 - 100
viscosity build-up to 1500 mPa·s	DIN 53019-1	min	40 – 50	40 – 50	20 – 25
viscosity build-up to 3000 mPa·s	DIN 53019-1	min	75 – 85	55 – 65	25 – 30



Gel time

			EI-2500 / EH-2973
at 60 °C	Hot plate	min	45 – 55
at 80 °C	Hot plate	min	15 – 17
at 100 °C	Hot plate	min	5 – 7
at 120 °C	Hot plate	min	2 – 3

Glass transition temperature

			EI-2500 / EH-2973
7 days at 20-25 °C	DSC	°C	60 – 65
16h at 20-25 °C + 14h at 60 °C	DSC	°C	85 – 90
16h at 20-25 °C + 8h at 80 °C	DSC	°C	105 – 110
16h at 20-25 °C + 14h at 80 °C	DSC	°C	107 – 112
16h at 20-25 °C + 4h at 100 °C	DSC	°C	117 – 122
16h at 20-25 °C + 8h at 100 °C	DSC	°C	121 – 126
16h at 20-25 °C + 14h at 100 °C	DSC	°C	121 – 126
16h at 20-25 °C + 4h at 120 °C	DSC	°C	125 – 130
16h at 20-25 °C + 8h at 120 °C	DSC	°C	130 – 135
16h at 20-25 °C + 14h at 120 °C	DSC	°C	130 – 135

Water absorption

			EI-2500 / EH-2973	
Cure: 16h at 20-25 °C + post curing			**8h at 80 °C**	**8h at 120 °C**
4 days at 23 °C	wt. increase	%	0.52 – 0.57	0.50 – 0.55
10 days at 23 °C	wt. increase	%	0.84 – 0.89	0.84 – 0.89
30 min at 100 °C	wt. increase	%	0.52 – 0.55	0.43 – 0.48
60 min at 100 °C	wt. increase	%	0.74 – 0.79	0.66 – 0.71

Processing

The processing and material temperature should be between 20-25 ºC.
Mix the two components thoroughly in the ratio indicated. Degassing is recommended.
The mechanical properties and temperature resistance are only obtained through the post cure according to the recommended cure schedule.

Recommended cure schedule

After initial curing at room temperature for 12-24 hours depending on the size and thickness of the parts, the parts must be heated up to 120°C in steps and post cured for 8 hours at 120°C, then cooled down gradually. The curing time at room temperature, heating and cooling rate depend on the size and thickness of the parts.

Packaging

RAKU® TOOL EI-2500	20 kg / 200 kg
RAKU® TOOL EH-2973	4.5kg / 23 kg

Storage

Original containers should be kept tightly sealed and stored at ambient temperatures (15°C to 30°C). If properly stored the products have the shelf-life indicated on the product label.
Partly used containers should always be sealed appropriately and used up as soon as possible.

Handling Precautions

Good workplace ventilation is to be ensured during processing. At the same time, the employer's liability insurance association's industrial hygiene safety regulations regarding the handling of reaction resins and their hardeners are to be observed. Please take heed of the appropriate safety data sheets.

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