

***** Hei-Cast 8660 *****

1.Description

Hei-Cast 8660 is a polyurethane resin for low-pressure casting with excellent flame retardant performance that has been certified UL94V-0. Hei-Cast 8660 has well-balanced physical properties and excellent dimensional stability. It is also capable of producing small lots to mass-produced products such as medical equipment, aircraft equipment components, ATM-machine components, game machine components, and interior building materials components that require flame retardancy (UL94 V-0) and practical strength. It is also superior in productivity because it can be molded at a mold temperature of 25 to 40°C for 20 minutes.

2.Basic Properties

Item		Value	Remarks
Appearance	A comp.	white/Black	Polyols
	B comp.	Dark brown	Isocyanates
Color of Article		Beige/Black	
Viscosity (mPa·s, 25°C)	A comp.	1000~2000	Viscometer Type EM
	B comp.	300~400	
Specific Gravity (25°C)	A comp.	1.30	Specific Gravity Cup
	B comp.	1.20	
Mixing Ratio	A : B	100 : 130	Ratio by weight
		100 : 140	Ratio by Volume
Pot Life	25°C	60~90 seconds	Resin 100g
S.G. of Finished Article	25°C	1.31	JIS K 7112

3.Basic Physical Properties

Item		Value		Remarks
		25°C curing	40°C curing	
Hardness	Type D	85	85	JIS K 7215
Tensile Strength	MPa	65	65	JIS K 7161
Elongation	%	10	15	
Bending strength	MPa	80	75	JIS K 7171
Young's Modulus in flexure	MPa	2000	1700	
Impact strength	kJ/m ²	8	10	JIS K 7110 Izod V Notch
Shrinkage	%	0.3	0.4	Inhouse specification
Heat Deflection Temperature	°C	80	80	JIS K 7191(1.80 MPa)
Coefficient of thermal expansion	/°C	6.6×10 ⁻⁵	6.6×10 ⁻⁵	JIS K-6911
Flame retardancy	UL94	V-0		UL File Number E92376 over 2.5mm Thickness
		5VA		3mm Thickness

Remarks : Test piece curing condition :

mold temperature 40°C×30 minutes + 25°C×1 day , mold temperature 40°C×30 minutes + 25°C×1 day

Data with test piece demolded from silicone mold : bending test, impact test and Heat Deflection Temperature.

Data with test piece demolded from metal mold : tensile test and shrinkage.

Physical properties listed above are typical values measured in our laboratory and not the values for specification. When using our product, it must be noted that physical properties of final product may differ depending on the contour of article and the molding condition.

4.Low Pressure Casting Process

(1) Dispensing machine(Automatic casting machine)

Use 2 component PU dispensing machine which can perform the process from weighing of A component and B component and mixing with a stirrer to cleaning of mix-head automatically.

The properties of this material may be affected negatively depending on the material of the parts of dispensing machine contacted with this material.

More information is available from our sales staff.

(2) Temperature of resin

Keep a temperature of 25-30°C for both A and B components

Higher liquid temperature means shorter pot life and lower liquid temperature means longer pot life.

(3) Mold temperature

Keep the temperature of mold at 40-60°C beforehand.

Extremely too low mold temperatures may cause improper curing to result in lower physical properties.

(4) Weighing

Mixing ratio is 100:130(by weight). Adjust the output of dispensing machine to the tolerance of $\pm 5\%$.

(5) Mixing

A and B component will be mixed on a dynamic stirring system. Mixing efficiency will differ depending on the quantity to be dispensed and the number of rotation of the dispensing machine. It is suggested to find optimum casting condition of the machine before casting.

(6) Casting

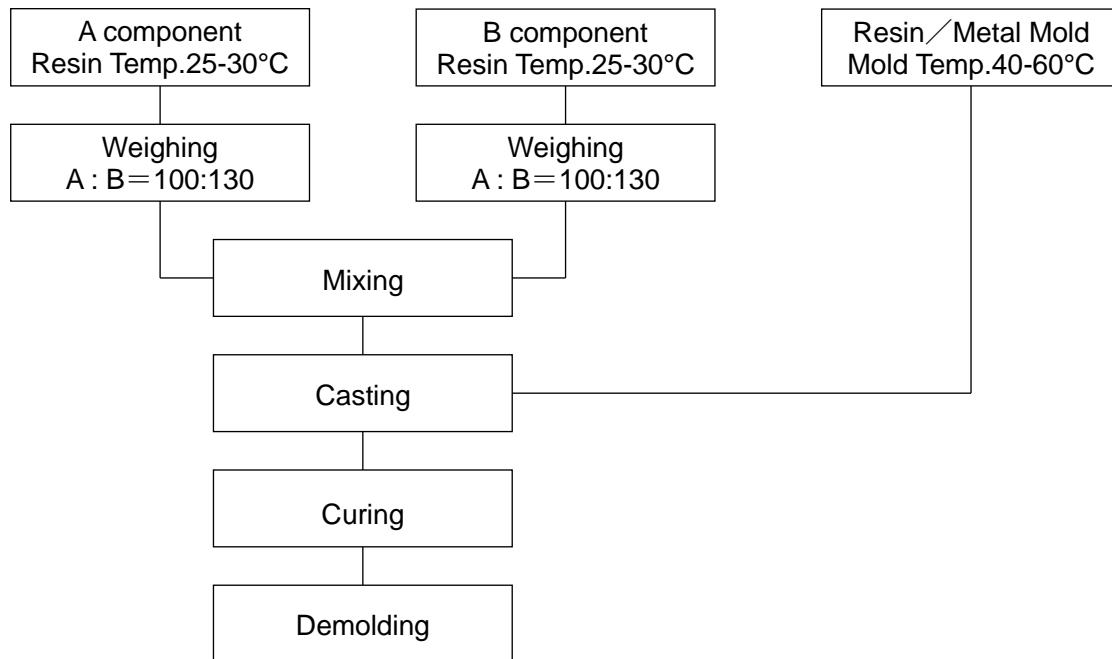
Cast the resin into the mold which has been given a coat of mold release agent beforehand and prepared appropriately with air venting, seals for parting line, etc.

(7) Curing condition

Place filled mold in thermostatic oven of 40-60°C.

Articles just after demolding may deform depending on the shape when it is post cured at temperatures higher than the mold temperature. We ask you to place it in a suitable jig to avoid deformation during the post cure at high temperatures.

5.Flow chart of low pressure casting



6.Precautions in handling

- (1) Store A component and B component in the place with low humidity at 15-25°C.
Both A and B components are sensitive to water. Don't allow water get into material and don't allow moisture come prolonged contact with the material. Close container tight after use.
Let nitrogen gas or dry air flow in the working tank of the dispensing machine for A and B component to seal the moisture from the air.
- (2) Please note that A component will deteriorates when it is stored for longer period of time at over 25°C.
- (3) Penetration of water into A component may lead to generation of much air bubbles in the cured product.
- (4) A component contains coloring agent. Stir it well before use.
- (5) B component will react with moisture to become turbid or to cure into solid material.
Don't use the material when it has lost the transparency or it has shown any hardening as these materials will lead to much lower physical properties.
- (6) B component in part or in whole may freeze when it is stored for longer period of time at temperatures below 5°C. Frozen material can be used after melting. Warm it up at 60-70°C for 1-2 hours, stir it well and use after warming it up to 25-30°C.
- (7) Prolonged heating of B component at temperatures over 40°C will affect quality of B component and the cans may be inflated by the increased inner pressure.
- (8) When B component is stored in a frozen state, it deteriorates more quickly.
We recommend to melt frozen material completely and store it at 15-25°C.

7. Precautions in Safety and Hygiene

- (1) B component contains more than 1% 4,4'-Diphenylmethane diisocyanate.
Install local exhaust within the work shop to secure good ventilation of the air.
- (2) Take care that hands or skin are not coming in direct contact with raw materials. In case of contact, wash with soap and water immediately. It may irritate hands or skin if they are left in contact with raw materials for longer period of time.
- (3) If raw materials get into eyes, rinse immediately with flowing water for 15 minutes and see a doctor.

8. Dangerous materials classification according to the Fire Services Act

A component Fourth Class Petroleum Group, Dangerous Materials Fourth Group

B component Fourth Class Petroleum Group, Dangerous Materials Fourth Group

9. Delivery Form

A component 20kg

B component 20kg

In using our products based on the technical information contained herein, you are requested to thoroughly test our products as to their suitability for your intended application and determine their validity with your own responsibility.

As the applications and processing conditions of our products to be applied by users are beyond our control, we can not bear any responsibility for this technical information in terms of accuracy, the results obtained from their use and the possible infringement of patent rights of any third parties.