

## \*\*\*\*\* Hei-Cast 8530 \*\*\*\*\*

## 1. Description

Hei-Cast 8530 is a highly flexible vacuum casting material developed for PE and PP prototypes.

- (1) Its low viscosity makes it superb in fluidity.
- (2) Because of its low flexural modulus and high elongation, moldings with a texture similar to that of PE and PP products can be obtained.
- (3) Fully cured products have excellent impact resistance.

## 2. Basic properties

Item		Value	Remarks
Appearance	A comp.	Black	Polyols
	B comp.	Pale yellow translucence	Isocyanates
Color of Article		Black	
Viscosity (mPa·s, 25°C)	A comp.	400	Viscometer Type BM
	B comp.	160	
Specific gravity (25°C)	A comp.	1.05	Specific gravity cup
	B comp.	1.19	
Mix Ratio	A : B	100 : 100	Ratio by weight
Pot Life	25°C	8min	Resin 100g
S.G. of Finished Article	25°C	1.13	JIS K-7112

## 3. Basic physical properties

Item		Value	Remarks
Hardness	Type D	70	JIS K-7215
Tensile strength	MPa	22	JIS K-7113
Modulus of elongation	MPa	1000	
Elongation	%	80	
Bending strength	MPa	33	JIS K-7171
Young's modulus in flexure	MPa	830	
Impact strength	kJ/m <sup>2</sup>	12	JIS K-7110 Izod V Notch
		9	JIS K-7110 Charpy V Notch
Shrinkage	%	0.6	Inhouse specification
Heat deflection temperature	°C	65	JIS K-7191 (1.80MPa)
Coefficient of thermal expansion	°C <sup>-1</sup>	10×10 <sup>-5</sup>	JIS K-6911
Demolding time	min	60~90	Mold temp. above 60°C

Remarks: Curing condition : Mold temperature: 60°C×60 min. +25°C×24 hours.

Above physical properties are given from our laboratory measurements as typical values and not for specification. When using our product, it must be noted that physical properties of final product may vary depending on its contour and molding conditions

#### 4. Vacuum Molding Process

##### (1) Pre-degassing

Degass both A and B components in a de-gassing chamber for about 30 minutes. Degass material as much as you need.

##### (2) Temperature of resin

Keep a temperature of 25~30°C for both A and B component during casting. The higher, the liquid temperature, the shorter is the pot life and the lower, the liquid temperature, the longer is the pot life. Extremely too low temperatures may cause insufficient mixing and improper curing.

##### (3) Mold temperature

Keep the temperature of silicone mold to 60~70°C in advance. Too low mold temperatures may cause improper curing to result in lower physical properties. Mold temperatures should be controlled precisely as they affect the dimensional accuracy of the finished article.

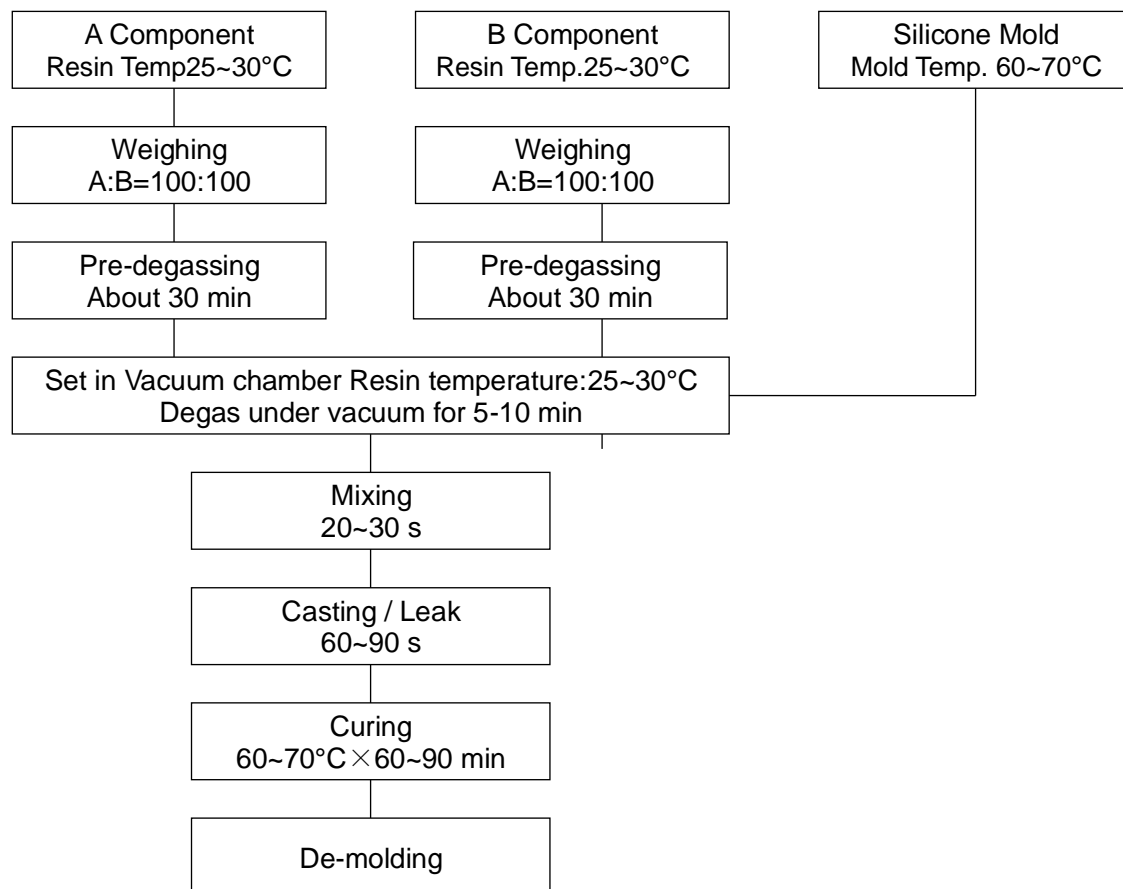
##### (4) Casting

Containers are set in such a way that A component is added to B component. Apply vacuum to the chamber and de-gass B component for 5~10 minutes while it is stirred from time to time. Add A component to B component and stir for 20~30 seconds and then cast the mixture quickly into the silicone mold. Release vacuum in 1 to 1 and half a minute after commencement of the mixing.

##### (5) Curing condition

Place filled mold in thermostatic oven of 60~70°C for 60 to 90 minutes and demold the article. Perform post curing at 60~70°C for 2-3 hours depending on the requirements.

#### 5. Flow Chart of Vacuum Casting



#### 6. Precautions in handling

- (1) As both A and B components are sensitive to water, never allow water get into material or air moisture come prolonged contact with material. Close container tight after use.
- (2) Penetration of water into A component may lead to generation of much air bubbles in the cured article. If this should happen, we recommend to add 1 to 2 % of dehydrating agent to A component to remove water.
- (3) Prolonged heating of A component may shorten the pot life of system. So, store it at room temperature.
- (4) B component will react with moisture to become turbid or to cure into solid material. Do not use material when it has lost transparency or has hardened already as these materials will lead to much lower physical properties.
- (5) B component in part or in whole may freeze when it is stored for longer time at temperatures below 5°C. Frozen material can be made usable after melting. Warm up container to 60 ~ 70°C for 1~2 hours and stir thoroughly before use.
- (6) Prolonged heating of B component at temperatures over 50°C will affect its quality and the cans may be inflated by the increased inner pressure.
- (7) When B component is stored in a frozen state, it deteriorates more quickly on storage than a liquid material. We recommend to melt frozen material completely and store it at 20~25.

#### 7. Precautions in Safety and Hygiene

- (1) B component contains more than 1% of 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 with flowing water for 15 minutes and call a doctor.
- (4) Install duct for vacuum pump to ensure that air is exhausted to the outside of the work shop.

#### 8. Dangerous Goods Classification according to Fire Services Act

A Component: Fourth Petroleum Group, Dangerous Materials Fourth Group.

B Component: Fourth Petroleum Group, Dangerous Materials Fourth Group.

#### 9. Delivery Form

A Component: 5 L tin can.

B Component: 5 L tin can.

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.