

***** Hei-Cast 8019 *****

1. Description

Hei-Cast 8019 is a cast molding urethane resin specially developed and designed for use in the field of hobby and craftwork. This product offers the following characteristics:

- (1) Mixing ratio is 1:1 and both A and B component are low in viscosity. Thus, uneven mixing is difficult to occur and favorable workability is ensured.
- (2) Viscosity of the mixture is extremely low. Resin can therefore flow to the every details of the mold to make molding of precise duplicate possible.
- (3) Curing time is short. Thus, high in productivity.
- (4) It holds toughness inherent to the urethane resin and shows excellent impact strength and flexural property.

2. Basic Properties

Item		Value	Remarks
Appearance	A Comp.	Colorless translucent liquid	Polyols
	B Comp.	Brownish color liquid	Isocyanates
Color of Article		Ivory	Standard color
Viscosity (mPa.s,25°C)	A Comp.	35	Viscometer Type BM
	B Comp.	20	
Specific Gravity (25°C)	A Comp.	0.95	Standard Hydrometer
	B Comp.	1.13	
Mixing Ratio	A : B	100 : 100	Parts by weight
Pot Life	25°C	120 and 180 s	Resin 100g
S.G. of Finished Article	25°C	1.09	JIS K-7112

3. Basic Physical Properties

Item		Value	Remarks
Hardness	Type D	70	JIS K 7215
Tensile strength	MPa	24	JIS K-7113
Elongation	%	40	
Bending strength	MPa	32	JIS K-7171
Young's modulus in flexure	MPa	780	
Impact strength	kJ/m ²	3	JIS K-7110 Izod V Notch
Shrinkage	%	1.2	Inhouse specification
Heat deflection temperature	°C	65	JIS K-7191(1.80 MPa)
Coefficient of thermal expansion	/°C	14×10 ⁻⁵	JIS K-6911

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

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. How to use Hei-Cast 8019

(1) Weighing

Mixing ratio between A and B component is 1:1.

Put a paper cup or the like onto the balance and weigh at first the necessary amount of A component into the cup.

Weigh next the same amount of B component into a separate paper cup.

Use the balance of good accuracy ever possible. We recommend a balance with the minimum scale of below 5 grams.

Wide deviation of mixing ratio can produce duplicates which show tackiness or not in the ivory color.

Don't use cups made from polystyrene as such cups may be solved by the solvent contained in Hei-Cast 8019.

(2) Mixing

After having weighed A and B component accurately, add B component to A component and mix well with a steel pallet or a glass bar.

Mix material in the bottom or at the wall of the cup more carefully, as the material around these areas is more difficult to mix.

Use of wooden bar may cause generation of air bubbles in the duplicate due to the effect of water contained in the wood.

Insufficient mixing can lead to the duplicate with tacky surface or uneven color shade.

Hei-Cast 8019 will start to cure in about 80 seconds after the commencement of mixing.

So, just mix for 10~20 seconds and move to the casting process quickly.

Reactivity is by the way, influenced by the liquid temperature. Namely, the higher liquid temperature gives shorter potlife and the lower liquid temperature gives longer potlife.

(3) Casting

Pour well-mixed liquid quickly into the silicone mold.

Poured liquid will change into beige color in about 80 seconds(25°C) and cures at the same time.

It may take longer time to become beige color when the temperature of rubber mold or liquid temperature of raw material is low or duplicate is of very small size.

We recommend to heat rubber mold to about 60°C. This will help produce a duplicate with good appearance and less shrinkage.

(4) Demolding

Hei-Cast 8019 can be taken out from the mold in 5~10 minutes after you observe the color has changed to beige. Take care that duplicate article is very hot because of the reaction heat. Articles may deform when they are taken out while they are hot.

(5) Painting

When you want to apply paint to the duplicate article, first clean the surface with a steel wool brush and detergent. It is also helpful and the post painting can be made much easier if you apply barrier coat to the silicone mold beforehand.

5. Precautions in handling

- (1) As both A and B components are sensitive to water, never allow water get into the material and also refrain from leaving container open that the material may come into long contact with moisture.

Penetration of water will lead to generation of much air bubbles in the article.

In such case, we recommend to degass under vacuum, A component for short period of time or add 1 to 2 % of dehydrating agent (DH-PASTE) to A component.

- (2) B component will react with moisture to become turbid or to cure into solid material.

Hardened materials are not any more usable.

- (3) Both A and B component contain Xylene and B component also contains more than 1% of 4,4'-Diphenylmethane diisocyanate. Install local exhaust within the work shop to secure good ventilation of the air.

- (4) A and B component are inflammable. Keep away from fire sources and never use near stoves. When you dispose of the raw materials, first mix A and B component together and let them react to cure and then dispose of after cooling down the material long enough.

- (5) Never fail to close container tight after use and store.

- (6) Take care that the material does not come in contact with skin. If it has stuck to hands, wash with soap and water immediately.
- (7) To avoid any accident where workers may swallow it by mistake, don't pour Hei-Cast 8019 into another container. In case of ingestion by mistake, drink a lot of water and induce vomiting if possible and call a doctor.
- (8) If raw materials get into eyes, rinse with flowing water for 15 minutes and call a doctor.
- (9) Those with allergic or diathesis constitution should refrain from using Hei-Cast 8019 as they may get affected with it.
- (10) In case of disposal, mix A and B component together and let them react to cure and then dispose of after observing the material has cooled down enough. Follow local regulations when you dispose of the waste.

6. Delivery Form

A Component: 16 kg UN can. (Partly 1 kg UN can)

B Component: 16 kg UN can. (Partly 1 kg UN 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.