

***** Hei-cast 8400A/8430B *****

1. Overview

Hei-cast 8400A/8430B is a vacuum casting urethane material with the following characteristics.

- (1) Due to its hardness of A94, low-density polyethylene and thermoplastic elastomer (olefin, styrene, vinyl chloride, polyester, and polyamide) products can be produced experimentally and applied as small-lot products.
- (2) It has good fluidity and fills the details of the mold with resin.
- (3) It contains no plasticizers.

2. Basic characteristics

Item		Values		Notes
Appearance	A Liquid	8400NA	Clear and colorless	Polyols (freezing at 15°C or below)
		8400A	Black	
	B Liquid	8430B	Clear and yellowish	Isocyanates
Product Color		milky white/black		
Viscosity (mPa·s, 25°C)	A Liquid	600		BM type viscometer
	B Liquid	200		
Specific gravity (25°C)	A Liquid	1.00		Standard pycnometer
	B Liquid	1.20		
Mixing ratio	A:B	100:100		By weight
Pot life	25°C	5-6 min.		Resin 100 g
Product specific gravity	25°C	1.15		JIS K-7112

NOTE) A component freezes at 15°C or below. Warm and melt and shake well before use.

Use of 8400A+8430B is recommended. The addition of 8400 C is not expected.

3. Basic physical properties

Item		Values	Notes
Hardness	Type A	94	JIS K-7215
	Type D	44	
Tensile strength	MPa	31	JIS K-7312 Speed 500 mm/min
Elongation	%	270	
100% modulus	MPa	14	
200% modulus	MPa	22	
Tearing strength	N/mm	84	
Shrinkage rate	%	0.7	In-house standard (thickness 4mm)
		0.8	In-house standard (thickness 10mm)

NOTE) Specimen curing conditions: Mold temperature 60°C 60°C x 60 min + 60°C x 24 h + 25°C x 24 h

This physical property value is representative of our measurements and is not a specification value.

The physical properties of the product vary depending on the shape and molding conditions. Please

use the product after thoroughly checking it.

4. Change in Hardness with Time

	Demolding 1 hour	1 day	2 days	3 days	4 days	7 days
Hardness Type A	83	93	94	95	95	95

NOTE) Specimen curing conditions: Mold temperature 60°C 60°C x 60 min + 25°C x days

This physical property value is representative of our measurements and is not a specification value.

The physical properties of the product vary depending on the shape and molding conditions. Please use the product after thoroughly checking it.

5. Vacuum casting method

(1) Pre-degassing

Perform preliminary degassing in the degassing chamber for about 5 minutes.

Be sure to degas only the amount used.

It is recommended to be degassed at 25 to 35°C of the liquid temperature.

Vacuum degassing at a liquid temperature of 50°C or higher for a long time may cause curing failure due to volatilization reduction of the active ingredient.

(2) Resin temperature

Keep the liquid temperature at about 25°C to 35°C for both A component and B component during casting.

If the liquid temperature is high, the pot life will be shortened, and if it is low, it will be longer.

(3) Mold temperature

Keep the silicone mold temperature between 60 and 70°C in advance.

If the mold temperature is low, curing failure may occur, resulting in deterioration of physical properties.

Also, the mold temperature affects the dimensions of the product, so please manage it thoroughly.

(4) Casting

Set the container so that A component is added to B component.

Stir and defoam the solution B occasionally for about 5 to 10 minutes while the work room is evacuated.

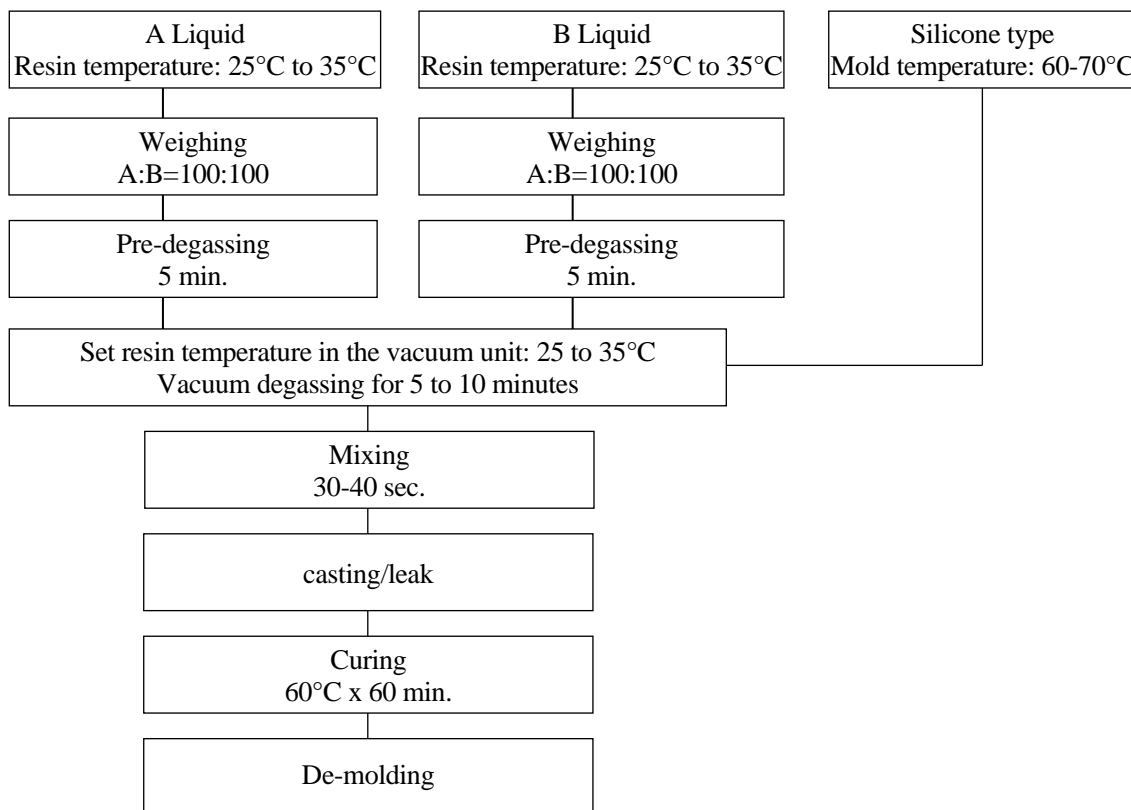
Add A component to B component, stir for 30 to 40 seconds, and quickly pour and leak into the silicone mold.

(5) Curing conditions

Placing it in a thermostatic chamber of 60-70°C, and then demolding it after 60 minutes of curing.

If necessary, perform secondary curing at 70°C to 80°C for 2 to 3 hours.

6. Vacuum casting flow chart



7. Handling precautions

- (1) A component and B component dislike moisture. Do not allow them to come into contact with moisture for long periods of time, as well as mixtures. Always seal them after use.
- (2) If moisture gets into A component, many bubbles will be generated in the cured product. In such cases, use a separately sold dehydrating agent (DH PASTE).
- (3) A component freezes at 15°C or below. Warm at 40 to 50°C and shake well before use.
- (4) Vacuum degassing of A component at 50°C or higher for 20 minutes or more may cause poor curing due to volatilization of the active ingredient.
- (5) B component may react with moisture and become cloudy or hardened. Do not use the material that are extremely transparent or hardened, as they may deteriorate physical properties.
- (6) If B component is heated at 50°C or above for a long period of time, it may deteriorate and the container may swell at the internal pressure. Store the product at room temperature.

8. Safety and health precautions

- (1) B component contains 1% or more of 4,4'-diphenylmethane diisocyanate. Provide a local exhaust ventilation system in the work area and be careful of ventilation.
- (2) Be careful not to touch the ingredients directly with your hands or skin. In case of contact, wash them off immediately with soapy water. Leaving it in contact for a long time may cause rash.
- (3) If the ingredients get into the eyes, immediately wash the eyes with running water for 15 minutes and consult an ophthalmologist.

(4) Provide a duct so that exhaust air from the vacuum pump is discharged outdoors without fail.

9. Fire Defense Law Hazardous Materials Classification

Liquid A: Hazardous substances Class 4 Petroleum Class 3 Hazardous Class III

Liquid B: Hazardous substances Class 4 Petroleum Class 4 Hazardous Class III

10. Packing form

Liquid A: 8400 NA, 8400A 1kg royal can

Liquid B: 8430B 1 kg royal can

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