Hei-Cast 8400

1. Description

Hei-Cast 8400 is a 3 components polyurethane system developed for vacuum molding applications. The product shows very good flow-ability and curing property, moreover the hardness of finished article can be varied by incorporating C component in the range of Shore A 60°~90°, thereupon the product is said to be the most suitable casting system for duplicating a mold.

2. Basic Property

Product		8400 / 8400N	
Appearance	A Component	Black / Colourless clear	Polyols
	B Component	Pale yellow clear	Isocyanates
	C Component	Pale yellow	
Colour of finished article		Black / Milky white	N type can be coloured
Viscosity	A Component	600 mPa•s(25℃)	Viscometer Type B
	B Component	40 mPa•s(25℃)	
	C Compound	160 mPa•s(25℃)	
Specific gravity	A Component	1.11	Standard Hydrometer
	B Component	1.17	
	C Component	0.99	

Mixing Ratio (A:B:C Weight ratio)		100:100: 0	100:100:50	100:100:100	100:100:150
Pot-life	at 25℃ Minutes	6	6	6	6
Cure time	at 60~70℃×Minutes	60	80	100	120
Hardness	Shore A	90	80	70	60
Tensile strength	kg/cm²	180	120	80	70
Elongation	%	200	250	250	250
Tear strength	kg/cm	70	40	35	25
Resilience	%	50	65	70	70
Shrinkage	%	0.6	0.5	0.5	0.4

(Mechanical properties : JIS K-6301, Shrinkage : Our own method)

3. Vacuum Molding Process

It is recommended that the following advice on vacuum molding process be followed.

3.1 Weighing

Choose the additional amount of “C component” according to desired hardness of a finished article and add it into “A component”.

The same quantity of B component as A component is accurately weighed in a separate container.

3.2 Resin Temperature

Both A component (or A component being incorporating with C component) and B components should be pre-warmed to 25~35℃.

The pot-life is influenced by the resin temperature being pre-warmed. The higher the resin temperature gives the shorter pot-life and the lower the resin temperature, the longer pot-life.

3.3 Mold temperature

Silicone mold should be preheated to 60~70℃.

If the temperature of silicone mold is low, under cure might be take place resulted in poor mechanical properties.

3.4 Pre-degassing

Place both A (or A component being incorporating with C component) and B component in de-gassing chamber for 10~20 minutes. Please degas by the containers for each use.

3.5 Casting

The containers are to be set as the B component is added to A component (or A component being premixed with C component).

After a operation chamber is made vacuous, A component is de-gassed for 5~10 minutes stirring at intervals.

The B component is added into A component (or A component being premixed with C component), then the mixture is stirred for 30~40 seconds under vacuum.

Pore the mixture into preheated silicone mold speedily.

The vacuum in operating chamber is leaked after approx. 90 seconds counting from commence of the mixing.

3.6 Curing condition

Place the filled mold in the thermostatic oven at 60~70℃ for 1~2 hours, after then the castings can be demolded.

Post cure at 60℃ for 2~3 hours is to be done at needed.

4. Precautions by handling

Please attend to the following points in order to produce a good finished article in safety.

4.1 As all A, B and C components are sensitive to moisture, please avoid any moisture contamination and also long time exposure to moisture.

Please seal the container air tightly after the use.

4.2 In case A or C components are contaminated with moisture, many air bubbles might be observed in the cured article. In such case the A and C components are warmed to 80℃, then degas for 10 minutes.

4.3 As the A component tends to crystallize when the ambient temperature goes down below 15℃, it is recommended to heat the crystallized A component to 40~50℃. Then it should be thoroughly agitated before use.

4.4 In case B component is reacted moisture, sometimes it becomes cloudy or hardening is taken place.

The hardened material can not be used anymore.

4.5 B compound is containing more than 1 % of 4,4'-Diphenylmethan diisocyanate.

4.6 Avoid contact with hand and skin.

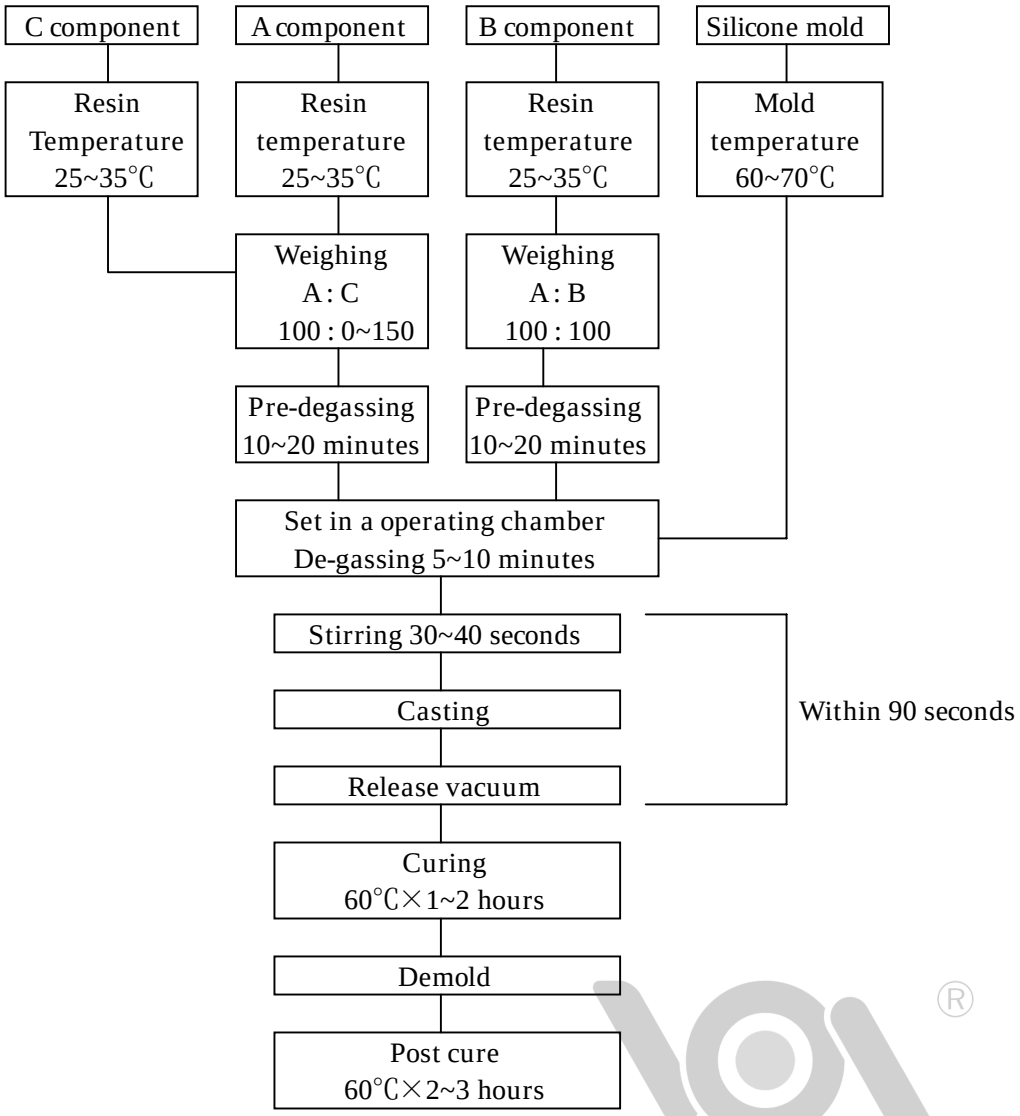
In case contact with hand and skin, immediately wash with soap and water.

4.7 In case contact with eyes, immediately flush eyes with running water for at least 15 minutes and consult physician.

4.8 A duct should be installed as the exhaust gas of vacuum pump is to be discharged in the open air.

4.9 Pay full attention to the ventilation in the working place.

5. Casting flow chart



UPX 8400

真空浇注聚氨酯树脂

用于原型件和模型制作

可变邵氏硬度从 30-90 A

应用

浇注于硅橡胶模中用于制作柔性原型件或小批量的类橡胶件，该产品完全匹配我公司硅胶 Essil296。 .

特性

- 3 组分真空浇注聚氨酯弹性体
- 可调节组分的配比来满足不同的硬度要求
- 染色方便
- 对硅胶模的化学腐蚀小

物 理 性 能					
成分		**UPX 8400 POLYOL**	**UPX 8400 ISOCYANATE**	**UPX 8400 EXTENDER**	**MIXING**
重量混合比		100	100	0 to 700	
外观		液体	液体	液体	液体
颜色		黑色（-K） 无色	淡黄色	奶白色	黑色 米白色
粘度于 25℃ (mPa.s)	BROOKFIELD LVT	300	350	480	**
混合前密度 混合后密度	ISO 1675 :1975 ISO 2781 :1988	1.05	1.20	1.05	- 1.10
可操作时间（200g） 于 25℃ (分钟)					9 – 15**

* 多元醇在低于 15℃下贮存会结晶。请在使用前于 40 - 70℃下预热并摇晃，形成均匀液体。使用前应降至 25 - 35℃。

异氰酸酯部分若发生结晶，请于 70℃解晶 1 小时，但是加热时间不可超过 4 小时。

** 硬度配比可参照第三页的配比表。

操作过程

- 使用前先解晶。如果贮存温度偏低，请将产品预热到 25-35℃。
- 在使用前将多元醇搅拌，直到产品的颜色外观均匀。
- 按照相应比例称量各组分，将增量剂加入多元醇，并预先搅拌均匀。
- 添加最终色料
- 分别脱泡 5 - 10 分钟。
- 将异氰酸酯倒入多元醇（预混增量剂），搅拌 2 分钟。
- 浇注于模温 70℃的硅胶模中，然后在 70℃下固化。

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- 固化 90 – 120 分钟后脱模。
- 如需快速脱模，请将树脂注入预热到 80℃的模具后，保温固化 45 分钟后脱模。

安全防范

通常在手工操作时需注意健康和安全防范
-- 确认工作环境通风良好
-- 操作人员需戴手套和安全眼镜
进一步的资料请参考产物料安全数据表

机械性能 -在 23℃下 (1) 配比: 100-100-0			
硬度	ISO 868 :2003	Shore A1	90
拉伸强度	ISO 37 :2004	MPa	17
撕裂强度	ISO 34 :2004	kN/m	22
断裂延伸率	ISO 37:2004	%	430

技 术 特 性			
线性收缩	-	mm/m	NC
最大浇注厚度	-	mm	20
脱模时间 在 70°C	-	分钟	90-120 *
固化时间 在 23°C	-	天	4

(1): 以上数值是标准样件测试所得的平均值。70℃下 1 小时后脱模，后固化处理： 70℃下 24 小时+25℃下 24 小时

* 硬度参照配比表.

储存

在温度 20℃-30℃间置于干燥环境中保持容器未开封，多元醇组分保质 9 个月，异氰酸酯为 6 个月。开过的包装应在干空气、氮气等环境下盖紧.
多元醇在温度低于 15℃是可能产生结晶，处理方法请参照操作过程。

PACKAGING

ISOCYANATE + POLYOL	EXTENDER
1 X (3X1+3X1) KG	1X(6X1KG) 1X1KG

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根据下列配比表可获得理想的硬度

如要获得中间硬度值可调整增量剂的量如 邵氏硬度 55A, 配比 : 100-100-220.

HARDNESS A SHORE	MIX RATIO		
	POLYOL	ISOCYANATE	EXTENDER
90	100	100	0
85	100	100	10
80	100	100	50
70	100	100	100
65	100	100	150
60	100	100	200
55	100	100	220
45	100	100	320
40	100	100	500
35	100	100	600
30	100	100	700

HARDNESS A SHORE	SOME MECHANICAL PROPERTIES		
	Elongation	Tensile strength	Tear strength
	(ISO 37:2004)%	(ISO 37:2004)MPa	(ISO 34:2004)MPa
90	430	16.20	22.20
65	390	6.70	11.50
40	430	3.60	6.30
30	550	2.10	3.75

声明：

以上技术资料是基于我们对产品在推荐的工艺和严格的条件下的测试结果而获得的。用户在使用 AXSON 产品时有责任严格按我们的规范操作，对于客户不按我们相应的规范使用，AXSON 将不提供解释与帮助，并不承担相应的责任与损失。

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