

Pel-Urethane **MU-858A / MU-858B**

1. Characteristics

- * Flame resistant, UL-94 V-0 UL recognized (UL File Number E62027)
- * Good flexibility
- * Similar to ABS Resin

2. Main Application

- * Vacuum prototype modeling
- * Small lot production

3. Property before curing

(Typical value)

Item	Condition ·Unit	MU-858A	MU-858B
Appearance	Visual	Colorless transparent	Light yellow transparent
Specific gravity	25°C	1.28	1.19
Viscosity	25°C mPa·s	850	200
Mixing ratio	By weight %	100 : 170	
Pot life	25°C, 100g	5 minutes	

4. Standard Curing Condition

- *Resin Temperature 30~40°C
- *Mold Temperature 60~70°C
- *Curing 60~70°C x 60~90minutes

5. Property after curing

Item	Condition	Unit	Typical value
Curing Condition			60°C×60minutes
Appearance	Visual		White
Hardness	JIS K-7215 25°C	Shore D	80
Flexural strength	JIS K-7171	MPa	90
Flexural modulus	JIS K-7171	MPa	2000
Impact strength	JIS K-7110 Izod with V notch	kJ/m ²	10
Load deformation temperature	JIS K-7191 Load=1.8MPa	°C	85
Shrinkage	t=4	%	0.3
Flammability	UL94 File Number E62027	3.0mm	V-0

* The above values are typical , and not guaranteed values.

Precaution & Handling Method for Pel-Urethane MU-858

1. Precaution for safe handling and storage

- The material shall be used for initial purpose only.
- Please handle them with care, not to contact with water.
- Residual resin shall be stored in tightly sealed package by keeping out of direct sunlight and high moisture.
- The container shall be sealed with nitrogen or dry air, because the air containing moisture increases, in case the residual resin quantity becomes small.
- When liquid A is contaminated by water, the mixed resin would start foaming at curing, but it might not be fully cured.
- Some of liquid A contains pigment or filler, so agitate it before use.
- When liquid B is contaminated by water, it becomes whitely cloudy or cured. In this case, do not use liquid B. It may deteriorate the property of cured goods.
- Liquid B may cause crystallization partially or entirely when it is at temperature below 5 Degree C.
- If liquid B caused crystallization, heat it up to 60 to 70 Degree C. for 1 to 2 hours, and agitate it before use.
- As soon as liquid B is fused, stop heating and preserve it at room temperature.
- If crystallized liquid B has been left for more than one week or more than 2 days at 60 Degree C., it might cause decomposition.
- Besides, if liquid B is continuously heated or cooled more than required, it might accelerate decomposition.
- If liquid B is decomposed, it becomes no longer fusible, or even if it is fused, it becomes whitely cloudy. In these cases, please do not use it.

2. Precaution for Safety

- Liquid B contains 1% of 4,4-diphenylmethane diisocyanate.
- Work place shall be well ventilated by installing local exhaust.
- The material shall be handled gently not to contact with skin.
In case of skin contact, flush immediately with plenty of soap and water.
- Consult a doctor if symptom of itchiness or pain is recognized.
- The material is classified to flammable substance, so keep it away from fire.
- Please refer to MSDS for details.

3. Vacuum Casting

- ① Pre-defoaming
- More than 15 minutes for each liquid A & B.
- ② Pre-heating of Casting Instruments

- Pre-heat cup, agitating propeller and funnel to remove moisture on their surface.
- ③ Liquid Temperature
- In casting, keep liquid temperature at 30 to 40 Degree C.
 - The higher the liquid temperature, the shorter pot life and the worse workability it would have.
 - The lower the liquid temperature, the higher viscosity, the lower compatibility and more difficult it is to agitate perfectly.
- ④ Mold Temperature
- Pre-heat the mold to 60 to 70 Degree C.
 - Pre-coat mold lubricant beforehand.
 - If mold temperature is too low, cured goods would be brittle or deformed, and the final property would be affected, too.
 - It also effects dimensional accuracy of the product, so please be careful with temperature control.
 - In case of using resin/metal mold, please note that they might cause shrinkage of cured goods.
- ⑤ Casting
- Measure the resin by taking residual volume left in the cup into consideration.
 - It is desirable to pour liquid A into liquid B. Due to higher viscosity of liquid A, it tends to cause imperfect agitation. Please make sure the clearance between cup and agitating propeller.
 - When decreasing pressure, spin the agitating propeller sometimes.
 - When both liquids mixed instantly, the mixed compound may start bubbling and cause overflow from the cup.
 - After agitation for 30 to 60 seconds, cast the mixed resin into mold, and release vacuuming after 90 to 150 seconds.
 - Timing to release vacuuming would be differed by working conditions. If it were too fast, bubbles would not be perfectly removed. If it were too late, bubbles would not burst and remain in the cured goods as pinholes.
- ⑥ Curing Time
- 60 to 70 Degree C. for 60 to 90 minutes.
 - Please note that the thinner the cured goods, the longer curing time it takes.
 - Apply secondary curing at around 60 Degree C. if needed.