



# RESOLTECH WWA

## Hardener WWB4

### CLEAR EPOXY CASTING SYSTEM

- Adjustable rigid or flexible casting according to the mixing ratio
- Perfectly transparent
- Very good UV resistance



Resoltech WWA is a unique epoxy system formulated for decorative applications and castings. It is totally clear, UV stabilized, not solvated and compatible with glass. Excellent optical properties and no shrinkage are the key features of this system

Compatible with most substrates such as glass, wood, cement, stone, ceramic, metal, this system will adapt to most requirements of artists & designers.

Thanks to its extremely low viscosity **RESOLTECH WWA / WWB4** system can be used in a large number of applications: jewellery, lamps, flower arrangements, protection coatings...

Its manufacturing process and last generation degassing agents enable to obtain perfectly bubble-free castings.

The RESOLTECH WWA / WWB4 system enables to adjust the rigidity module from hard to flexible. 2:1 mixing ratio in volume will result in rigid castings while increasing the WWB4 ratio (up to 1:1) will result in flexible castings.

Flexible castings are recommended while making inclusions within fragile containers without the risk of crack or breaking while dilatations/contractions due to temperature changes.

For small volume castings (in film or up to 3 to 5 mm) a faster version of the system exists: WWAS.

RESOLTECH cares about the health and safety of its employees and customers, this is why its formulations such as the WWA / WWB4 system are free of solvents or toxic components.

# Resin WWA

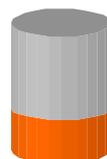
Hardener WWB4

## Clear Epoxy Casting System

### MIXING RATIO

#### Rigid Version

	Resin WWA	Hardener WWB4
<b>By volume :</b>	2	1
<b>Bt weight :</b>	100	40



#### Flexible Version

	Resin WWA	Hardener WWB4
<b>By volume :</b>	1	1
<b>Bt weight :</b>	100	89



### PHYSICAL CHARACTERISTICS @ 23°C

#### Visual Aspect

WWA :	transparent liquid
WWB4 :	transparent liquid

#### Density

WWA :	1.08
WWB4:	0.96
Mélange :	1.00

#### Viscosity

WWA :	1000 +/- 200 mPa.s
WWB4:	90 +/- 25 mPa.s
Mélange :	200 à 400 mPa.s according to mixing ratio

# Resin WWA

Hardener WWB4

## Casting & Inclusions Epoxy System

### REACTIVITY

Pot life 500 gr. or 10cm high mix

Rigid ratio 2/1 vol.

Flexible Ratio 1/1 vol.

WWA - 500g - @ 23°C :  
WWAS - 500g @ 23°C :

10h  
1h

24h  
3h

Hardening 500 gr. or 10cm high mix

Rigid Ratio 2/1 vol.

Flexible Ratio 1/1 vol.

WWA - Hard & releasable from mould @ 23°C : 19h  
WWAS - Hard & releasable from mould @ 23°C : 8h  
Maximum resistances

21 days @ 23°C or 15h @ 60°C

72h  
15h

### MECHANICAL CHARACTERISTICS

Resistances to chocks

Rigid ratio 2/1 vol.

Flexible Ratio 1/1 vol.

35 J/m

450 J/m

Hardness

Rigid ratio 2/1 vol.

Flexible Ratio 1/1 vol.

95 Shore D

70 Shore A

Traction

Rigid ratio 2/1 vol.

Flexible Ratio 1/1 vol.

Resistance :  
Elongation to break :

66 MPa  
8%

18 MPa  
98%

Flexion

Rigid ratio 2/1 vol.

Flexible Ratio 1/1 vol.

Resistance :  
Module :

105 MPa  
3010 MPa

15 MPa  
550 MPa

Evolution of Shore D hardness according to temperature and mixing ratio:

Resin+ Hardener ratio	100/40	100/50	100/60	100/70	100/80	100/90
Shore D hardness after 14 days @ 23°C	85	82	78	67	43	21
Shore D hardness after 8h @ 40°C	86	84	83	75	55	35

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# Resin WWA

## Hardener WWB4

## Casting & Inclusions Epoxy System

### APPLICATION

WWA is a casting system. Moulds can be either hard or made of silicon. Moulding can be carried out by gravity or under vacuum. WWA does not trap air easily and does not heat up when used properly.

Temperature should be between 18 to 25°C. Humidity level below 70%.

The hard mix (2 to 1) will provide a hard casting, suitable for the manufacture of fancy shapes, decorative items, etc. The soft mix (1 to 1) is suitable for castings in glass containers. The resin will then absorb the dilatation of the glass.

Should a new mix be applied onto cured resin, the contact surface should always be sanded if structural cohesion is required.

**Mixing the resin:** The mixing phase is the most important one. 99% of product variations are due to poor mixing. It is highly recommended to follow the basic rules as follow:

- Start by pouring the WWB4 Hardener in the pre-mix container first
- Add the corresponding amount of WWA resin
- Mix thoroughly but avoiding to include too many air bubbles
- Once the mix is transparent and homogeneous, pour into second mixing container (double potting).
- Mix again and ensure perfect optical transparency before casting into mold or glass object,

**Temperature effects:** Epoxy resins are thermosetting plastics, which means that their hardening is linked to temperature: curing/hardening will go faster with temperature and will go slower if temperature decreases.

**The viscosity** will increase while temperature decreases and will decrease at more elevated temperatures

**Mass effect:** The higher volume is casted, the more difficult it will be for the resin to evacuate calories, therefore the resin will have a tendency to accelerate its hardening with higher levels of castings.

**Contraction:** it is commonly admitted that the contraction of epoxy resins is neglectable, therefore they are used for accurate scale reproductions & mouldings.

**Testing:** it is highly recommended to do some tests at each change of one of the parameters of the production: Type of glass used if casted in glass containers, type of materials if casting inclusions, height of the resin to be casted..etc before starting industrial productions

### TROUBLESHOOTING

#### PROBLEM CAUSE

Cloudy or solid state:

Uncured after 24/48 hours  
The mixture gets hot

Air bubbles are entrapped  
Sticky, greasy surface

The glass container breaks  
The casting does not stick

To the glass container

#### CAUSE / SOLUTION

The resin has crystallised due to low temperature. Just reheat the resin in the container to around 50°C until it goes liquid again.

Wrong mixing ratio and/or low temperature.

High temperature and/or too much mixture was prepared.

Mixing was too fast and did not have time to release air.

Ambient humidity level is too high.

Dilatation problem, use the 1+1 mix or close to this ratio.

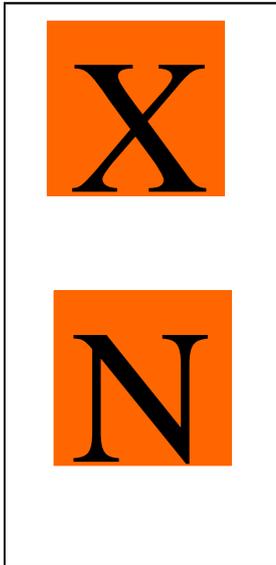
Container was not degreased or curing temperature is too high.

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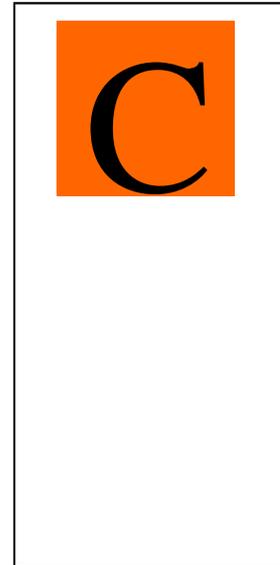
## Hardener WWB4

### LABELLING

#### WWA



#### WWB4



### PACK SIZES

#### WWA / WWB4 rigid version

Kit 1.4 kg : 1 kg + 0.4 kg  
Kit 7 kg : 5 kg + 1 2 kg  
Kit 14 kg : 10 kg + 4 kg  
Kit 35 kg : 25 kg + 10 kg  
Kit 315 kg : 225kg + 3 x 30kg

#### WWA / WWB4 flexible version

Kit 1 kg : 0.53 kg + 0.47 kg  
Kit 4 kg : 2.12 kg + 1.88 kg  
Kit 10 kg : 5.29 kg + 4.71 kg  
Kit 20 kg : 10.58 kg + 9.42 kg  
Kit 60 kg : 31.75 kg + 28.25 kg  
Kit 425 kg : 225 kg + 200 kg

*Nota* The data provided in this document is the result of tests and is believed to be accurate. We do not accept any responsibility over the mishandling of these products and our liability is limited strictly to the

### HYGIENE & SAFETY

It is advised to follow basic rules such as avoiding skin contact, wear masks when producing dust. Please read our standard health and safety sheet for more information.

In case of eye contamination, wash with water and seek medical advice.

### TRANSPORT & STORAGE

Shelf life is minimum one year in sealed containers as provided. Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area.



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