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AI APPLICATION INFORMATION

# AI 3/1: Processing instructions for ELPECAST® casting compounds of the series Wepuran VT 3402 KK

The crystal-clear, highly transparent casting compounds of the series **Wepuran VT 3402 KK** are distinguished by their very good weather resistance and excellent UV light stability and fulfil high demands on optical properties.

To achieve this, an optimum potting without bubbles and flowmarks is required. Consequently, it is vital to avoid humidity, air inclusions and “dead zones” (unmixed material) during processing. The advice below will be of help when processing this product:

| | |
|---|---|
|  | Please read this technical report and the publications listed below carefully before using the product. These sheets are enclosed with the first shipment of product or sample. |
| **MSDS** | The corresponding material safety data sheet contains detailed information and characteristics on safety precautions, environmental protection, transport, storage, handling and waste disposal. |
| **TR** | Technical Report “Casting compounds of the series Wepuran VT 3402 KK“ |
| **TI** | Technical information TI 15/2 ”Selection criteria and processing instructions for casting compounds” |
| **TI** | Technical information TI 15/3 “Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents“ |
| **TI** | Technical information TI 15/10 “Processing of 2-pack systems“ |

Since the many different permutations make it impossible to evaluate the whole spectrum (parameters, reactions with materials used, chemical processes and machines) of processes and subsequent processes in all their variations, the parameters we recommend are to be viewed as guidelines only that were determined in laboratory conditions. We advise you to determine the exact process limitations within your production environment, in particular as regards compatibility with your specific follow-up processes, in order to ensure a stable fabrication process and products of the highest possible quality.

The product data specified in the technical reports is based upon standard processing conditions/test conditions of the mentioned norms and must be verified if necessary while observing suitable test conditions on processed products.

Feel free to contact our application technology department (ATD) if you have any questions or for a consultation.

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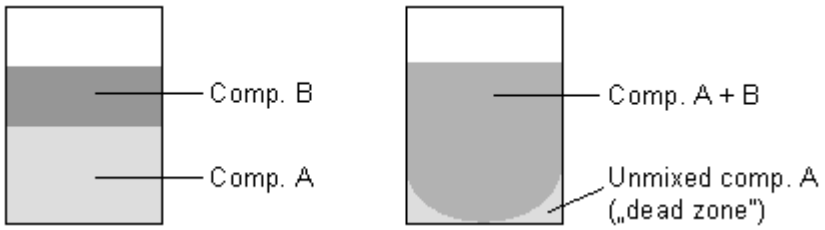
# Processing

- → Ensure that the surface to be potted is clean, grease-free and dry, and that your workplace is as dust-free as possible. Air humidity should not exceed 75 % r. h.
- → Heat the components to be potted to 50–80 °C [122-176 °F] for 30 min to remove even the slightest condensation, e. g. in the case of humid weather or on a cold component in a warm environment.
  Perform potting before condensation forms again.
  Do not pot cold components.
- → Bring the containers of both components at least to the temperature at which they shall be processed.
- → Mix both components in the specified mixing ratio.
  Both components are packed in the correct mixing ratio.
- → To avoid penetration of moisture close opened containers carefully after use and upend them once. Consume opened containers as soon as possible.

## Mixing of both components

- → Mix component A and hardener (component B) thoroughly with each other. Care must be taken that no unmixed material remains in the corners of the containers.




**Unmixed material** **”Dead zones” after mixing**

- → Should flowmarks appear while mixing continue to mix until they have disappeared.
- → If possible, use a mechanical stirring unit.
- → Ensure no air is stirred in. Use suitable mixing elements as shown below, **no** household mixers or drills with mixer attachment.

**Left: Agitator with basket, right: Paddle stirrer with holes**
Source: Collomix Rühr- und Mischgeräte GmbH, Gaimersheim, and Bochem Instrumente GmbH, Weilburg, Germany

## Processing of dyestuff concentrates and hazing paste

Dyestuff concentrates and hazing paste can be mixed with the casting compounds of the series **Wepuran VT 3402 KK** in different mixing ratios. The quantity of component A and hardener (component B) of the casting compound to be applied changes accordingly. We provide a “Mix calculator” in the DOWNLOAD CENTER of our website that enables you to calculate the necessary quantities of the individual components fast and easily. The added quantity of dye(stuff) concentrates and hazing paste must not exceed a total of 40 %, for **VT 3402 KK-ALU**, **VT 3402 KK-NV-HE**, **VT 3402 KK-NV-HH** and **VT 3402 KK-NV-SB** it must not exceed 20 %.

➔ Do not mix the casting compound **Wepuran VT 3402 KK-NV-SV-HB** with dyestuff concentrates or hazing paste as this will cause the UL approval to expire.

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**Mix calculator for the casting compounds Wepuran VT 3402 KK, VT 3402 KK-NV, VT 3402 KK-NV-LT and VT 3402 KK-NV-UVP for mixing with the hazing paste TP 3492 LS and the dyestuff concentrates FK 3432 and FK 3452**

| | |
|---|---|
| desired total quantity in grammes | 100 |
| desired hazing in % | 0 |
| desired colouration in % | 0 |

| | |
|---|---|
| Component A | 50,0 g |
| Hazing paste TP 3492 LS | 0,0 g |
| Dyestuff concentrate | 0,0 g |
| Hardener (Component B) | 50,0 g |
| Total | 100 g |

**Input mask of a mix calculator (www.peters.de)**

Stir **TP 3492 LS** before use

➔ Stir the dyestuff concentrate or the hazing paste into component A and then add the hardener (component B).

➔ Add the hazing paste **TP 3492 LS** shortly before processing since otherwise the filler may settle.

## Evacuation of mixture

In order to avoid entrapping air in the compound, the air must be removed by means of vacuum (approx. 30-50 mbar) when mixing. Ensure that the compound is evacuated before **plus** after potting if necessary, in order to remove trapped air.

Peters has “Bubble-free” systems on offer consisting of a desiccator and a pump. They permit to evacuate approx. 500 g of casting compound in an easy manner.

➔ Note that a larger size desiccator and a higher performance pump may be needed for evacuating larger quantities.

➔ Select the size of the desiccator in such way that the quantity usually prepared for your application can be evacuated at one and the same time. The container used for this purpose should be filled up with casting compound to no more than one third to prevent overfoaming during evacuation.

➔ When potting certain casting compounds of the series **Wepuran VT 3402 KK** note that even a quantity of 500 g already generates a remarkable amount of heat. Owing to the strong heat development surface defects may occur when potting quantities > 1 kg. In this case, casting compounds with a significantly reduced reactivity and heat development should be used. For this purpose, **Wepuran VT 3402 KK-NV-LT** is best suited (see also the selection chart in the technical report, item “low heat development when cured”).

Besides the quantity prepared, geometry is also important. If for example, the quantity of casting compound is applied on a large surface, heating will be limited.

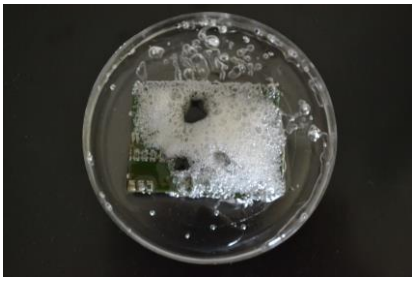
➔ Perform tests with your own assemblies.

### Machine processing

The casting compounds of the series **Wepuran VT 3402 KK** can be very easily processed in mixing and dosing units such as the Peters Mixdo.

## Troubleshooting

The following table gives details of typical mistakes, causes and solutions:

| Mistake | Cause | Solution |
|---|---|---|
| Bubbles in the compound while material cures  from a different perspective:  | Air entrapped during mixing of components cannot be released | Evacuate at approx. 30 mbar after mixing |
| Strong formation of bubbles  | Moisture in the compound/ on the substrate | Dry assembly directly before encapsulation, e.g. at 60°C for 30 min |

| Mistake | Cause | Solution |
|---|---|---|
| Strong formation of bubbles  | Wrong mixing ratio, too much hardener added (component B) | Verify mixing ratio and observe recommended ratio |
| Surface defects  | 1. Too much product prepared at one time<br>2. Cured at too high a temperature | 1. Process smaller quantities at one time<br>2. Avoid curing above 60 °C<br>Use **Wepuran** VT 3402 KK-NV-LT |

# Disclaimer

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Any questions? We would be pleased to offer you advice and assistance in solving your problems. Samples and technical literature are available upon request.

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