

NEUKADUR ProtoCast 105

Polyurethane Casting Compound

altropol

Main features

- very good flowability
- very impact resistant
- very easy to colour
- high dimensional stability under heat
- curing to be white

Applications

- all kinds of moulds and patterns
- prototyping

Properties in the non-crosslinked state (approx. values)

		NEUKADUR ProtoCast 105 Comp. A	NEUKADUR ProtoCast 105 Comp. B
Colour		slightly yellowish	slightly yellowish
Mixing ratio	p.b.w.	100	200
Density 20 °C	g/cm ³	1.09	1.16
Viscosity 25 °C	mPa·s	650	160

Properties of the mixture (approx. values)

			PC 105 A / PC 105 B	after storage 2 hours at 70 °C
Mixed viscosity (25 °C)	mPa·s		325	
Density (20 °C)	g/cm ³	DIN 53479	1.15	
Pot life (25°C)	minutes		5	
Demouldable after (70 °C)	minutes		60	
Hardness	Shore D	DIN 53505		82
Colour (cured)			white	
Recommended layer thickness	mm		5	

Mechanical values (approx. values after 2 h 70 °C, for hardener PTG 4 additionally + 4 h 80 °C)

Tensile strength	MPa	DIN 53455	71
Tensile elongation	%	DIN 53455	15
Flexural strength	MPa	DIN 53452	99
Modulus in flexure	MPa	DIN 53457	2,300
Dimensional stability under heat 110 x 13 x 6mm	°C	HDT	105
Impact strength after 2 h 80 °C	KJ/m ²	DIN 51230	>35
Linear dimensional change	%	500 x 50 x 3mm	0.3

How to process the material

NEUKADUR ProtoCast 105 Component A has to be homogenized thoroughly prior to processing. Tightly close receptacles after every use. After 30 – 60 minutes, the cured material has not yet got its full impact strength (the same is only obtained after approx. 1 - 2 hours at 70 °C) so that demoulding should be made with care, particularly when it deals with thin parts.

We recommend pouring NEUKADUR ProtoCast 105 Comp. A/B into moulds having been preheated to 70°C (e. g. of ProtoSil RTV 240) and tempering the compound for at least 1 hour at 70°C before demoulding. Recommended thickness of cast layer: up to max. 5 mm

Furthermore, we recommend evacuating NEUKADUR ProtoCast 105 Comp. A for 15 minutes at the highest possible vacuum, then releasing the same to 20 – 25 mbar before adding NEUKADUR ProtoCast 105 Comp. B. At < 20 mbar, heavy

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foaming may occur at the moment when both components are poured together. NEUKADUR ProtoCast 105 Comp. A can also be heated up to for example 40 ° C beforehand; in this case, approx. 10 minutes will be enough for evacuation as far as the same takes place at full vacuum.

It is also possible to evacuate NEUKADUR ProtoCast 105 Comp. B (larger quantity) under vacuum and under stirring and to add component A (smaller quantity) to component B. This may stop a too heavy foaming of component B at <5 mbar and possibly prevents a heavy foaming when component A and component B are poured together.

When castings of a layer thickness >5 mm shall be produced, we recommend mixing NEUKADUR ProtoCast 105 Comp. A with the pot life retarder NEUKADUR ProtoCast 105 VZ. The mixing ratio of the NEUKADUR ProtoCast 105 VZ with NEUKADUR ProtoCast 105 Comp. B is 100 : 180. This measure minimizes the shrinkage, but prolongs simultaneously the demoulding time. Furthermore, the dimensional stability under heat of the VZ is a little bit lower than that of NEUKADUR ProtoCast 105 Comp. A/B

When castings of a layer thickness <1 mm shall be produced, we recommend the addition of our catalyst UL 1 % or UL 10 %. By adding e.g. 0.1 % of the catalyst UL 1 % to the mixture, the pot life will be reduced by approx. 1 minute, but the demoulding time will be reduced significantly. The catalyst should be stirred into component A.

NEUKADUR ProtoCast 105 - manual casting: NEUKADUR ProtoCast 105 Comp. A is very sensitive to humidity. When ProtoCast 105 Comp. A/B shall be processed by manual casting, we recommend stirring 5 to 10 % of Zeolith paste as 3rd component into Comp. A before adding NEUKADUR ProtoCast 105 Comp. B.

Form of delivery

NEUKADUR ProtoCast 105 Comp A	0.5 kg	1 kg	5 kg	25 kg
NEUKADUR ProtoCast 105 Comp. B	1kg	5 kg	25 kg	
NEUKADUR ProtoCast 105 VZ	0.5 kg	1 kg		

Storage

We recommend keeping the material in tightly closed original receptacles at temperatures of 20 - 25 °C. When duly stored, the material can be used within the shelf life indicated on the labels (the first 2 digits of the batch number indicate the week, the 3rd digit indicates the year).

Measure of precaution

With the aid of the current safety data sheets, which contain physical, ecological, toxicological and other data relating to safety, the user can inform himself on the safe handling and storage of the products.

Our technical service - in words, in writing or by trials - is given according to the current state of our knowledge. It does however not relieve the customer/user from the duty to check by himself if the products supplied by us are suitable for the intended processes and purposes. Application, use and processing of the products take place beyond our control possibilities and lie therefore exclusively in the area of responsibility of the processor. Any existing property rights of third parties are to be considered. We guarantee the perfect quality of our products in accordance with our general terms and conditions of business. When handling our products you have to observe the legal rules and the rules for the industrial hygiene. As for the rest, we refer to the corresponding safety data sheets.

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• www.altropol.de •

• Altropol Kunststoff GmbH • Rudolf-Diesel-Straße 9 - 13 • D-23617 Stockelsdorf • Tel. +49 (0)451-499 60-0 •
• Fax. +49 (0)451-499 60-20 • E - Mail: info@altropol.de •