



ASSYST sprl / A.S.O.W. sprl
 Hellegatstraat 13a - 2590 Berlaar - Belgium
 Tel: +32 495 50 61 14 / +32 496 83 70 27
 Website: www.assyst.org / www.artsuppliesonweb.com
 Email: ao@assyst.org / vera.opsommer@assyst.org

ACRYLIC RESIN PLASTICRETE

DESCRIPTION:

PLASTICRETE P-CAST A02 is a water-based acrylic resin which reacts with the special filler to form a solid mass. The system cures at room temperature and in a short time the material achieves mechanical properties much higher than normal gypsum-based products. 50% of the final mechanical performance is achieved after 15 hours at only 20°C. The cured product has limited porosity and low water absorption. Plasticrete can be added with iron oxide based pigments, with aluminium powders or inert fillers to obtain the desired finishing effect. The addition of fillers proportionally reduces the mechanical properties of the material.

APPLICATION:

Small or large architectural elements, flame resistant, low or high density, reproduction of sculptures. By adding the right fillers it is possible to obtain materials resembling natural stone or metal.

PROCESSING:

Mass casting or alternatively, for stratification of glass fabrics or if added with cut fiberglass, for brushing to desired thickness. Curing at room temperature.

SYSTEM SPECIFICATIONS:

Vicat (min) at 25°C 30-34 min

TYPICAL SYSTEM CHARACTERISTICS:

Resin color:	white
Viscosity resin at 25°C:	30-50 mPas
Density resin at 25°C:	1.01-1.08 g/ml
Color filler (powder):	white
Density filler at 25°C:	1.30-1.40 g/ml
Mixing ratio by weight:	100 gr powder: 45 to 55 gr filler
Initial mixing viscosity at 25°C:	1000-1400 mPas
Processing time (at 4,000 mPas, 25°C):	22-30 min
Initial curing:	50-60 min
Time to demould:	4-15 hrs
(depending on: room temperature, thickness, shape etc.)	
Aftertreatment at 40°C:	(15 hrs)
Max. recommended thickness:	Any thickness

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on standard samples cured for 7 days at room temperature

Color:	white
Density:	1.50-1.55 g/ml
Machinability (machine):	Good
Shore/Hardness (D15):	82-86
Flammability:	1.6 mm
Expansion:	< 0.1%
Linear shrinkage after 1 month:	0.15-0.20%.
Bending strength:	
7 days at room temperature:	7-9 MN/m ²
1 month at room temperature:	9-11 MN/m ²
After 30 days in water:	9-11 MN/m ²
Stress at break:	1.5-1.8%
Weight loss after 1 month at	



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room temperature or 24 hours at 60°C:	3.5-5.5%
Weather resistance:	-18°C - +30°C
Indicative water intake, derived from residual porosity, after 1 month immersion:	3.5-5.5%

INSTRUCTIONS FOR USE:

Apply 2 coats of release agent (trennwax or PVA) to the model or mold surface and wait 5 to 10 minutes after each application. After re-homogenization, weigh the liquid (resin) into a clean container at a 50 parts mixing ratio. Add the filler in the appropriate ratio (100 parts) and mix slowly with a mixer to facilitate powder dispersion. Wait 1 minute before starting mixing, manually or mechanically at medium speed (1000-2000 rpm) with whisk or HS Mixer for 2 minutes until a completely homogenized material is obtained. We recommend filtering the material on a filter with a large hole (1-2 mm) to separate any remaining lumps, especially if the casting is directly on the figure. The mixture may be:

- 1) pour directly onto the mould;
 - 2) applied in several layers by brushing if added in the following proportion: 50 parts liquid + 100 parts powder + 6 parts cut fiberglass to obtain fibrous pastes of different consistency;
 - 3) used to impregnate large filling glass fabric (our D5 glass cloth) until the desired thickness is achieved.
- By increasing the amount of resin to 55 parts for 100 parts filler, it is possible to decrease the viscosity, increase the working time but also increase the time needed for complete drying. Wherein reducing the amount of resin to 45 parts for 100 parts of filler increases the viscosity, shortens the working time, speeds up the complete drying of the product and gives a less porous material, particularly suitable for external applications. If the product is applied by stratification it is advisable to apply it as a surface layer with Plasticrete P-Tix as thickener (for instructions refer to the data sheet).

NABE TREATMENT:

Post-treatment is not always necessary. The data in the table were obtained on 4 x 4 cm samples after complete drying. Treatment at 30-40°C in a ventilated warm room after demoulding accelerates the curing of the product. For high temperature applications with dry molds (e.g. Pre-pregs molds) after initial curing at room temperature for at least 6 hours, it is recommended to oven dry the part for 12-24 hours at 60°C.

STORAGE:

The acrylic-water based dispersions can be damaged at temperatures below 0°C: it is therefore advisable to store the product in an area at temperatures above 0°C. The resin must be re-homogenized before use. The filler reacts with moisture and water, so it is necessary to store it in a closed container in a dry place. Before use, it is necessary to condition the products for at least 24 hours at a minimum temperature of 15°C because at low temperatures the curing and stabilization times of the material become much longer.

HANDLING PRECAUTIONS:

The acrylic-water based dispersions and the associated filler are not hazardous products according to EC regulations. Please consult the Material Safety Data Sheet and follow the regulations regarding industrial health and waste disposal.