

**PLASTIDITE****COLLACRYL**Adhesives for acrylic sheets  
Adhesives and auxiliaries

## SOLVENT - BASED ADHESIVES

### General description

Solvent-based adhesives for physical hardening.

Products based on special solvents and PMMA resin.

These products act through partial dissolution of the surfaces to be welded and through evaporation and diffusion of the solvents in order to create a solid bond of the two joined partes.

ATTENTION: suitable for transparent colourless, or also opaque-coloured, PMMA methacrylate sheets and allow very good initial bond strength.

The joint obtained are totally transparent and colourless, very solid and often free of bubbles; good thickness fillers can also be executed.

They can be exposed to external light and weather conditions with improved performance whether subjected to further annealing.

Suitable to weld acrylic PMMA material, casted or extruded, not crosslinked and not scratch resistant: in such cases perform preliminary tests in order to evaluate the usability and the final toughness of the weld.

In the case of satin sheets the surface aesthetic appearance is modified.

In case of coloured sheets, colour migration phenomena can occur.

In the case of highly pigmented sheets ( for example densely colored white sheets ) reductions in the final toughness of the bond may occur.

In the case of hi-impact sheets, a diminished elastic property in the area adjacent to the junction is manifested.

In the case of fire-resistant sheets there are slower hardening and lower toughness.

Available products :

K 365 viscous for general use and for laser-cut edges.

K 360 fluid for general use and for laser-cut edged

K 25 viscous for general use

K D viscous for general use of lower aesthetic

K 450 no chlorine viscous for general use

K 440 no chlorine fluid for general use

K 400 no chlorine thinner

K 90 not filling solvent based adhesive with immediate contact adhesion

K 320 not filling solvent based adhesive with immediate contact adhesion on polycarbonate and PETG

Packaging: box containing 6 aluminium bottles of 1 liter each

Storage: locked in a cool area (ideal in a refrigerator, no freezer)

Dispensers: optimal in PE

Tools cleaning: with K 400 and K 90 thinners or DCL 20 cleaner or pure acetone

## Typical values

Values estimated at 23° C and with a relative humidity UR=50%

	<b>K 365</b>	<b>K 360</b>	<b>K 25</b>	<b>K D</b>
Viscosity, Brookfield (mPa*s)	900-1.200	500-600	900-1.200	900-1.200
Density (g/cm3 )	≅ 1,17	≅ 1,18	≅ 1,22	≅ 1,20
Solid content (+/- 2%)	13	6	15	15
Maximum dilution with K 90 (%)	10	10	10	10
Tensile strength (MPa) (DIN 53455, ISO 527)	28-30	25-28	24-26	23-25
Setting time (sec) casted	20-30	10-20	20-30	20-30
Setting time (sec) extruded	10-15	5-10	10-15	10-15
Processing time (hours)	3	3	3	3
	<b>K 450</b>	<b>K 440</b>		
Viscosity, Brookfield (mPa*s)	900-1.200	500-600		
Density (g/cm3 )	≅ 1,12	≅ 1,05		
Solid content (+/- 2%)	13	11		
Maximum dilution with K 400(%)	10	10		
Tensile strength (MPa) (DIN 53455, ISO 527)	30-35	35-40		
Setting time (sec) casted	60-90	40-80		
Setting time (sec) extruded	30-45	20-40		
Processing time (hours)	3	3		
	<b>K 90</b>	<b>K 320</b>		
Viscosity, Brookfield (mPa*s)	0,8-1,0	0,8-1,0		
Density (g/cm3 )	≅ 1,30	≅ 0,90		
Solid content (+/- 2%)	1	1		
Tensile strength (MPa) (DIN 53455, ISO 527)	30-35	≅ 20		
Setting time (sec) casted	5-10			
Setting time (sec) extruded	0-5			
Setting time (sec) to polycarbonate		5-10		
Processing time (hours)	3	3		

## Working instructions

A slight yellowish color of product does not affect the final result.

The presence of possible whitening in the junction show excessive humidity and compromises the final toughnesses of the bond.

The further working processes can be performed already after the hardening, preferably after 3 hours, in any case, bear in mind that the stabilization will be definitive after 24 hours.

Heat tends to shorten the hardening process and could encourage the formation of cracks.

Reduced bonding times could cause a lower final toughness.

Products can be mixed if an optimal customized viscosity is required.

The dilution with the thinners allows to regulate the viscosity according to the type of use, the employment temperature and the equipment used.

It is not recommended to dilute the adhesives with quantities exceeding those advised.

Dilution tends to a greater aggressiveness of the product on the sheet.

Adhesives have to be chosen according to rapidity and viscosity.

The solvent based adhesives are not ideal to the bond of very extended flat surfaces, as in the central areas, there might be an excess of retention of the solvents and the resulting formation of bubbles.

The solvent based adhesives can also be used with the dipping technique, prior covering of the parts not involved with PE tapes and films, polyester or cellulose acetate.

The submerged surface softens in a few seconds (see specific setting times), and then it must be bonded with the second part kept firm for at least 30 seconds until the initial stabilization of the bond.

### General processing techniques:

The products should be used at room temperature of 20-25° C, preferably in low humidity areas.

If stored in the refrigerator, they must be taken to room temperature before use.

Preventive cleaning of the parts to be welded must be done by using specific detergent Cleaner CL 70.

The junction area can be roughened with sandpaper (320-400 grain) to encourage and improve the adhesion.

The areas adjacent to those of application, have to be covered with suitable PE adhesive tapes or with PE adhesive sheets or with special water-based peelable paints.

Adhesives have to be kept in the dispenser, as much as is required for the complete deaeration, especially with the most viscous ones.

Attention has to be paid in order to eliminate even finer bubbles which are more difficult to be identified.

The adhesives have to be locked in order to avoid the formation of hardened surface film.

The parts of adhesive which emerge from the joint section, have to be removed in a short time ( few minutes ), using Cleaner DCL 20, which allows to remove them without affecting the sheet and without forming halos.

Place the pieces to be joined and apply the adhesive with a dispenser or with disposable syringe after having waited for the elimination of the air included; pay attention to apply slowly without forming bubbles and without moving the pieces of the junction.

Apply a slight pressure for a few minutes to consolidate the bond; avoid excessive pressure and subsequent release for possible inclusion of air and retreats.

Excessive pressure may cause cracks on the bonded parts.

The formation of air bubbles and retreats may depend on an inadequate wetting of the surfaces of the joint.

Do not allow the adhesive to enter the closed cavities for strong slowdown of hardening with possible formation of cracking of the parties.

Bonding of two flat surfaces can be executed pouring the adhesive on one of the two surfaces following the diagonals and then adding the second sheet, placed on side, bonding it rapidly and gently eliminating the possible air bubbles in the edges.

Provide a base that allows the dripping of excess product, or seal the edges with suitable tapes in order to prevent spillage.

Very heavy sheets and blocks have to be spaced in order to allow optimal thickness of adhesive and prevent excessive pressure.

In the same case, but with vertical positioning, should be attention to the greater formation of bubbles which must have the time to escape from the top.

Remember that usually there are volume retreats after curing.

In corner bonds it is better to create an adhesive drawstring along the edges in order to create a stockpile of material which can diminish both the formation of the retreats and the air inclusions.  
 Maintain an opening angle, by sawing the border in oblique, in order to facilitate the entry of the adhesive.  
 The opening angle will be greater for low thicknesses that need more material to create the right toughness.  
 With angles of reduced opening, very fluid adhesives which enter in the capillarity can be used to execute bonds, in such case pay attention to the complete wetting of the junction edge.

To prevent cracking, and in particular in case of extruded material, a preventive annealing of the pieces to bond has to be done.

The time required depends on the quality of the material, the size and thickness of the sheets, and indicatively will be of 2 - 4 hours at temperatures of 70-80° C with subsequent slow cooling.

In order to obtain high resistances both mechanics and to external exposure of the articles joined, perform the annealing of the pieces already welded.

The overlapping of two polaroid sheets on transparent colourless pieces allows to visualize possible differences with the finding of possible iridescences in the tight areas.

Laser-cut edges are always very stressed, in such case use specific solvent products, or follow the described procedure of annealing.

The further working processes can be performed already after the curing, in any case, bear in mind that the stabilization will be definitive after at least 24 hours.

Heat tends to shorten the hardening cycles and could encourage the formation of cracks and bubbles.

Alternative materials joinable with PMMA

PC possible with solvent product K 90  
 PC + PC with specific product K 320 solvent or K 90 solvent

PETG K 320 solvent

ABS K 270 2 components reactive  
 PS K 450 and K 440 solvent  
 PVC K 365 and K 360 solvent  
 PVC Copolymers  
 Neutral Silicone

UP  
 PPO neutral Silicone  
 PES PUR acrylate with primer  
 PSU

CAB K 270 2 components reactive  
 Neutral Silicone

PE  
 PP Not matchable  
 PTFE

GLASS K 201, K 151, K 121 with KGL 51 additive  
 Neutral Silicone  
 PUR acrylate with primer

WOOD K 270 2 components reactive  
 Neutral Silicone

METALS neutral Silicone

STONES  
 CORK neutral Silicone  
 LEATHER

In all cases it is absolutely expected a preliminary test, being general information without a guarantee.

For different materials, take into account the different extensions if thermally stressed.

In the case of not metals and plastic materials, consider the possible humidity which creates both obstacles in the bonding and aesthetics.

In the case of porous materials it is always advisable to work with fluid adhesives which improve permeability.

To join small surfaces it can be used also cyanoacrylic adhesive with rapid grid.

## Safety and waste

Complete information regarding safety are contained on the pertinent sheet.

All products are exclusively designed for professional use.

Not perfectly clean packaging must be disposed as special waste ( waste code LoW 15.01.10 packages containing contaminating residues ) to give to the authorized firms.

## Informative annotations for the sale

The products sold by the company must be transported, stored, processed, and variously utilized in a professional manner by qualified personnel in accordance with the specifications described, which at the moment of the order confirmation, are considered known by the buyer together with the safety standards outlined in the product sheet.

The ordering party is responsible for the use of the material received.

Information about the proper use and maintenance of the products have a distribution characteristic for the product, show the characteristics and possible use and do not constitute any warranty expressed or implied to the buyer who has the responsibility to verify the functionality and/or the possibility of application to its use with qualified personnel.

The buyer is responsible for verifying compliance and the suitability of the goods received.

Eventual damages during the transport and the eventual successive verification to the delivery for hidden damages must be recorded by a copy of the document of delivery with receipt with the specific description of "acceptance with reserve".

Standard references: Code of the consumption DLgs 06-09-2005 n. 206

Any claim by the buyer must be received in writing with reference to the purchase invoice of material object of dispute and should be offered the opportunity to examine or to investigate on the spot the flaw and its possible causes.

In case of regular claim, verified the veracity of the complaint, the Company undertakes to replace the defective material with the same or with other equivalent if it is explicitly expressed the agreement of our sales department of returned material.

The information contained in this sheet are the currently best knowledge, the company reserves the right to modify them at any time according to its technical progress; the contents of this sheet are modified exclusively by our company.