Technical Information

ACRIFIX™ 1R 0192 Bright UV Reactive Cement

Product and Use

ACRIFIX™ 1R 0192 Bright – One-component polymerization adhesive. Clear, purplish viscous solution of an acrylic polymer in methyl methacrylate, which polymerizes **on exposure to light.**

Applications

Preferably for transparent edge and area bonds of **clear** acrylic (PMMA), i.e. ACRYLITE® FF acrylic sheet, ACRYLITE® GP acrylic sheet and parts made of ACRYLITE® molding compounds with one another, but also for other clear plastics such as ABS, PET, PC, PS and PVC.

Typical Values of Properties

Viscosity (Brookfield II/12/68°F/20°C): 1800 ± 200 cp

Density (68°F/20°C): ~ 1.02 g/cm³

Refractive index n_D^{68}: - 1.44

Color: clear, slightly purple

Flash point (Closed Cup): < 39°F / 4°C

Solids content: 32 ± 2%

Storage stability: 2 years in original container, if stored correctly

Packaging materials: aluminum

Thinner: ACRIFIX™ TC 0030, max. 10%

Cleaning agents for equipment: ACRIFIX TC 0030 or ethyl acetate

Curing (polymerization by light)

Light Source	Curing Period (at 5 hrs at 77°F/25°C)	
Fluorescent lamp, illuminant 25:	15 – 30 min	Bond/lamp and lamp/lamp spaced at approx. 10 cm and 20 cm, respectively
Superactinic UV-A fluorescent lamp, e. g. Philips TL.../05:	10 – 15 min	
Tanning studio UV-A fluorescent lamp, e. g. Philips CLEO Performance:	10 –15 min	
Diffuse ambient lighting, illuminant 25:	1.5 – 3 hrs	
Sunlight:	10 – 20 min	
Pot life (at 200 g in glass vessel exposed to diffuse ambient lighting):	~ 30 min (at 25 °C)	

Safety Measures and Health Protection

Contains methyl methacrylate. Irritating to respiratory system and skin. Sensitization by skin contact possible. Keep away from sources of ignition and do not smoke. Avoid contact with skin. Wear suitable protective gloves.

Storage/Transport

Keep container tightly closed in a cool place **protected against light.**

Working Instructions

Preparing the parts to be bonded

Degrease the surfaces to be bonded with water containing a wetting agent (such as detergent), or with ACRIFIX TC 0030. Internally stressed parts must be annealed before bonding in order to avoid stress cracking. The annealing conditions depend on the type of material, the degree of forming and the thickness of the parts to be bonded. Parts made of extruded and injection-molded acrylic should be annealed as a matter of principle. Typical annealing times – also for cast acrylic – are 2 to 4 hours in an airflow oven at 158-176°F (70-80°C). If annealing is not possible, we recommend the use of ACRIFIX™ 1S 2105 (only for commercial use). This assumes the surfaces to be bonded are flat and without V-grooves or superimposed layers, however.

Bonding technique

Fix the parts to be bonded in the desired position (avoid shading) and apply suitable adhesive tape to the joint and to protect surrounding areas. Introduce ACRIFIX 1R 0192 into the joint either directly from the tube or by means of a glue dispenser or disposable syringe, avoiding bubble formation. Then expose the joined parts to a suitable light source (see Curing). For this, "ordinary" fluorescent lamps of illuminant type 25 are preferred, since they provide optimal curing of ACRIFIX 1R 0192 and require no special protective measures against UV radiation at the workplace.

Other Measures

Roughening-up with abrasive paper (grit 230 to 320) improves the adhesion to untreated surfaces of cast acrylic. Severely stressed bonds or those intended for outdoor exposure should be annealed for 2 to 4 hours at 158-176°F (70-80°C) immediately after curing. ACRIFIX 1R 0192 must not get into closed cavities (e.g. double glazing, tube interiors), since the curing process is severely hampered at such sites, and there is a risk of stress cracking in the bonded parts.

Properties of Bond

Further treatment of bonded parts: 2 to 6 hours after curing; sanding and polishing after 24 hours.

Tensile shear strength (v = 2 in/min):

Material (to itself; cured with illuminant 25)	Non-annealed	Annealed (5 hrs at 76°F/80°C)
ACRYLITE GP sheet	4060 ± 725 psi	6960 ± 725 psi
ACRYLITE FF sheet	4060 ± 725 psi	7250 ± 725 psi

Appearance: Colorless, clear. Less bubbles will form with ACRYLITE GP sheet as compared to ACRYLITE FF sheet.

Limitation of Liability:

Our ACRIFIX adhesives and other auxiliary agents were developed exclusively for use with our ACRYLITE acrylic sheet products and are specially adjusted to the properties of these materials. Any recommendations and guidelines for workshop practice therefore refer exclusively to these products. Seller's liability shall be limited to the purchase price of the product supplied (or to have been supplied) hereunder in respect of which damages are claimed. All technical or other advice by seller, whether or not at buyer's request, with respect to the product, its processing, further manufacture, other use or resale or otherwise, is given gratis by seller and seller shall not be liable for, and buyer assumes all risk of, such advice and the results thereof. SELLER SHALL IN NO EVENT BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR OTHER DAMAGES, AND REGARDLESS WHETHER THE CLAIM IS BASED ON WARRANTY, CONTRACT, TORT, STRICT LIABILITY, NEGLIGENCE OR OTHERWISE. Upon satisfactory proof of claim by buyer, and as buyer's exclusive remedy, seller will, within a reasonable time, supply buyer with replacement product of the same or equivalent type, free of charge, freight prepaid or, at seller's option, refund the purchase price for the product upon return of the product or other delivered material, or the unused portion thereof. Buyer charges for replacements and returns for credit will not be allowed unless authorized by seller in writing.

For further information on safety measures, the exclusion of health risks when handling adhesives and on their disposal, see our Safety Data Sheet.

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Technical Support

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