

ACRIFIX® 1S 0107 Quick Set Solvent Cement

Product and Use

ACRIFIX® 1S 0107 Quick Set Solvent Cement is a thin-bodied, quick drying, colorless to slightly yellowish solvent adhesive (one-component) containing methylene chloride that will not blush.

Typical Values of Properties

Viscosity (Brookfield A/60/68°F/20°C):	≤ 15 cp
Density (86°F/20°C):	~1.22 g/cm ³
Color:	clear to yellowish; color does not affect bonding properties.
Flash point (Closed Cup):	No flash point
Solids Content	≤ 1 %
Storage stability	2 years after filling, if stored correctly
Storage temperature	Max 86°F/30°C
Packaging materials	glass, tinplated steel or aluminum bottles (with inside coating)
Curing	physically, through evaporation and absorption in the bonded articles

Applications

ACRIFIX® 1S 0107 is used for making T-joints and bonding narrow areas of all grades of uncross-linked ACRYLITE® products. Cracking only occurs in parts with extreme internal stresses. ACRIFIX® 1S 0107 is not gap-filling. The bond is firm within a short time.

Safety Measures and Health Protection

Contains dichloromethane, a suspected arcinogen. Harmful if inhaled and swallowed; irritating to eyes, respiratory system, and skin. Do not breathe vapor or spray. Avoid contact with eyes and skin. Wear suitable protective gloves and clothing to avoid contact with skin. In operations where eye or face contact could occur, wear eye protection such as chemical splashproof goggles or a face shield. In the event of contact with eyes, rinse immediately with plenty of water and consult a doctor. Keep away from heat, sparks, and flames. In case of fire and/or explosion, do not breathe fumes. Keep container closed and use adequate ventilation.

Bonding Technique

Secure the parts to be bonded in the desired position. Introduce ACRIFIX® 1S 0107 into the joint either from a glue dispenser or

disposable syringe, and avoid bubble formation. It can be used for making T-joints and bonding narrow areas of ACRYLITE® cast and extruded sheet as well as ACRYLITE® Resist. It can be utilized in the same applications as most methylene chloride based cements as long as proper precautions are observed. It will not fill gaps caused by unfinished edges. It is recommended that edges be either scraped or milled to produce a flat level cementing surface.

The resulting bond will be firm in a relatively short period of time depending on the substrate and will have high ultimate strength.

Normally, a sawn or milled edge of one article is bonded at a right angle to the original surface of another article. Avoid bonding in areas where a high stress level is to be expected (e. g. near pin gates or different wall thicknesses). The parts to be bonded must have a very accurate fit. Grooves and notches are not filled. Clean the areas to be bonded with ACRIFIX® TC 0030 or petroleum either before applying the adhesive. Either of two methods may be used:

- a) Lock the two parts in position without adhesive and introduce ACRIFIX® 1S 0107 into the joint from a small nozzled bottle. The adhesive penetrates the joint by capillary action. For sheet thickness > 0.236", the parts should first be put together with the aid of shims (e.g. stainless steel wire, 0.004" – 0.020"). The shims are placed at right angles to the sheet edge and are pulled out after introduction of the adhesive.
- b) The appropriate edge of one of the parts to be bonded is dipped into ACRIFIX® 1S 0107 and placed in contact with the second part after allowing sufficient time for solvent action. The holding time will be about 20 seconds for ACRYLITE® extruded sheet and about 60 seconds for ACRYLITE® cast sheet.

After the short holding time, the bond is locked in position and a pressure of at least 100 g/ cm² adherence is applied. When bonding sawn edges, bubble formation can be reduced by smoothing the edges prior to binding with fine, wet adhesive paper (400-600 grit) or passing the edges over with a scraper and wiping them vigorously several times with a cloth soaked in ACRIFIX® 1S 0107 (wear protective gloves!)

Further Indications

- 1) The maximum pot life of ACRIFIX® 1S 0107 in an open dish is about 30 min because its composition changes by evaporation of predominately one component.
- 2) Whitening around the adhesive joint is due to water condensing from the air (especially if the room temperature is low).

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Properties of Bonds

Initial bond:

ACRYLITE® extruded: ~ 5 sec
ACRYLITE® cast sheet: ~ 30 sec

Time before processing:

Not within the first three hours.

Tensile shear strength:

Annealing increases the strength and also improves weather resistance.

Material (to itself)	Non-annealed	Annealed (at 180°F)
ACRYLITE® extruded	4060 +/- 725 psi	4785 +/- 725 psi
ACRYLITE® cast	3335 +/- 725 psi	4060 +/- 725 psi

Annealing

Crazing will occur if high internal stress from fabrication is not relieved. Internal stress can be minimized by careful fabrication and annealing before the cementing. To anneal ACRYLITE® sheet, place it in an air circulating oven at 160-176°F for an hour for each millimeter of thickness (minimum of two hours). For more information, refer to the ACRYLITE® Fabrication Manual on Annealing on Acrylite.co.

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