

ACRIFIX® 1 R 9019

1-Component Polymerization Adhesive

Product and Use

Type

1-component polymerization adhesive. Clear, slightly purplish thin-bodied solution of an acrylic resin in methyl methacrylate that polymerizes upon exposure to UVA light.

Applications

Preferably used for clear area bonding of **clear** extruded acrylic, e.g. PLEXIGLAS® XT 0A000.

Special features

The good capillary properties of ACRIFIX® 1 R 9019 enable bonding of complex geometries such as laser-cut letters without masking the surrounding areas, and provides **bubble-free joints without adhesive seepage**. (The cutting angle must be removed first).

Storage/Transport

Keep containers tightly closed in a cool place **protected from light**.

UN No.: 1133

Working Instructions

Preparing the parts to be bonded

Degrease the surfaces to be bonded with isopropyl alcohol. **Important:** Internally stressed parts, especially laser cut 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 70 to 80 °C.

Bonding Technique

Fix the parts to be bonded in the desired position (avoid shading). Introduce ACRIFIX® 1 R 9019 into the joint by means of a glue dispenser, PE disposal pipette or disposable syringe. Due to its good capillary properties, the adhesive diffuses under the adherent surface by itself. The bond is then exposed to a suitable UVA light source until fully cured (see section “Curing”).

Other Measures

The parts to be bonded should fit precisely since ACRIFIX® 1 R 9019 only fills gaps to a certain extent. In individual cases it can be advantageous to thicken ACRIFIX® 1 R 9019 with 5–10% ACRIFIX® 1 R 0192; this way potential tolerances can be compensated. Severely stressed bonds or those intended for outdoor exposure should be annealed for 2 to 4 hours at 70 to 80 °C immediately after curing.

ACRIFIX® 1 R 9019 must not be allowed to enter closed cavities (e.g. double glazing, tube interiors) because curing is significantly poorer in these areas and there is a risk of stress cracking in the part to be bonded.

For more details see our Guideline “Joining, Ref. No.: 311–3”

Properties of Bonds

Further treatment of bonded parts:

2 to 6 hours after curing. Sanding and polishing can be performed after 24 hours.

Tensile shear strength ($v = 5 \text{ mm/min}$; butt joint between two parts made of PLEXIGLAS® XT 0F00): cured using Philips Cleo Performance 40 W-R; $20 \pm 5 \text{ MPa}$ (non-annealed), $50 \pm 5 \text{ MPa}$ (annealed for 5 hrs at $80 \text{ }^\circ\text{C}$)

Appearance:

clear, almost colorless, surface may be slightly yellowish

Limitation of Liability

Our ACRIFIX® adhesives and other service products were developed exclusively for use with our PLEXIGLAS® products and are specially adjusted to the properties of these materials. Any recommendations and guidelines for workshop practice therefore refer exclusively to these products.

Claims for damages, especially under product liability laws, are ruled out if made in connection with the use of products from other manufacturers. For further information on safety measures, the exclusion of health risks when handling adhesives and on their disposal, see our Safety Data Sheet.

Availability according to the current sales range.

Safety Measures and Health Protection

Labeling according to (EC) 1272/2008

Danger, contains methyl methacrylate, pentaerythritol tetraacrylate, diphenyl(2,4,6 trimethylbenzoyl)phosphine oxide



Highly flammable liquid and vapour. (H225)

Causes skin irritation. (H315)

May cause an allergic skin reaction. (317)

May cause respiratory irritation. (H335)

Causes serious eye irritation. (H319)

Harmful to aquatic life with long lasting effects. (H412)

Keep away from heat/ sparks/open flames/hot surfaces. — No smoking. (P210)

Avoid release to the environment. (P273)

Wear protective gloves/protective clothing/eye protection/ face protection. (P280)

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/ shower. (P303+P361+P353)

IN CASE OF CONTACT WITH EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)

Dispose of contents in accordance with local regulation. (P501)

Typical Values

Properties	Values
Viscosity; Brookf., II/6/20 °C	~0.6 mPa · s
Density (20 °C):	~0.94 g/cm ³
Refractive index n_{D20} :	~1.416
Color	clear, purplish
Flash point; DIN 51755	~ 10 °C
Storage stability:	2 years after filling, given correct storage
Storage temperature:	Max. 30 °C
Packaging materials:	Aluminum, colored glass
Cleaning agents for equipment:	ACRIFIX® TC 0030, ethyl acetate

Curing

System:	UV-A light polymerization	
Illuminant	curing time (at 25 °C)	
· superactinic UV-A fluorescent lamp, e.g. Philips TL .../05	~30min	bond / lamp and ca. 10 cm
· UV-A fluorescent lamp for tanning beds, e. g. Philips Cleo Performance, from 40W	~30min	lamp / lamp spacing
· direct sunlight	10–20 min	
Pot life (at 200 g in glass vessel with diffuse indoor lighting)	~30min (at 25 °C)	

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Evonik Röhm GmbH is certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment).

Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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