

Monolith[®] 342-1

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Two-part methacrylate adhesive

Characteristics:

Monolith 342-1 is a two-part methacrylate adhesive designed for structural bonding of thermo-plastic, metal and composite assemblies. Combined at a 10:1 ratio, it has an working time of 4 to 6 minutes and achieves 75% of ultimate strength in 15 to 18 minutes. **Monolith 342-1** is the standard choice for composites bonding applications in the transportation industry, because it requires virtually no surface preparation. In addition, this product provides a unique combination of high strength, excellent fatigue endurance, outstanding impact resistance, and superior toughness. **Monolith 342-1** is supplied in blue colour in ready-to-use cartridges, 20 litre pails and can be dispensed as a non-sagging gel using standard meter-mix equipment.

Benefits:

- No Surface Preparation
- High Strength
- 100% Reactive
- Excellent Tolerance to
- Off Ratio Mixing
- Non-Sagging

Applications:

Good results on following materials:

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| <ul style="list-style-type: none"> ABS Acrylics Aluminum* Fibreglass Gelcoats PVC | <ul style="list-style-type: none"> Polyesters (including DCPD modified) Steel, Carbon⁷ Steel, Stainless* Styrenics Urethanes (General) Vinyl Esters |
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* **Primer** Suggested

Chemical resistance:

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| <p>Excellent resistance to:</p> <ul style="list-style-type: none"> • Hydrocarbons • Acids and Bases (3-10 pH) • Salt Solutions | <p>Susceptible to:</p> <ul style="list-style-type: none"> • Polar Solvents • Strong Acids and Bases |
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Technical data:

Physical Properties (Uncured) -Room Temperature

	Adhesive	Activator
Viscosity:	40,000 – 60,000 mPa·s	40,000 - 60,000 mPa·s
Colour	Off white	Blue
Density g/cm ³ :	0.96	1.09
Mixing ratio by weight:	10	1
Mixing ratio by volume:	8.9	1

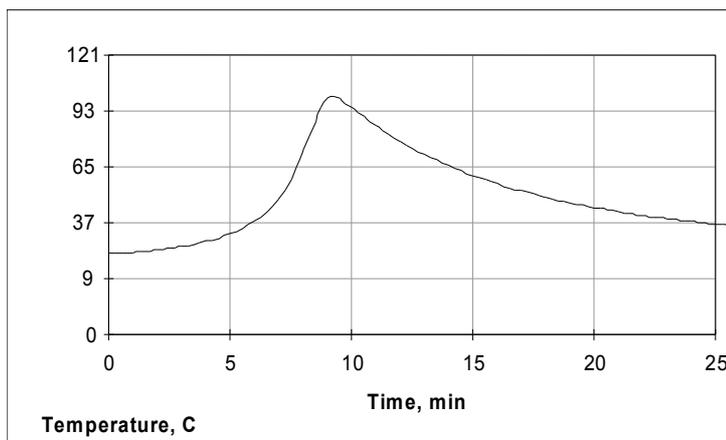
Curing in room temperature

Working time:	4-6 minutes
Fixture time:	15-18 minutes
Full cure:	6 hours
Flash point:	+9°C
Working temperature:	-55°C to 120°C
Gap filling:	1 to 8 mm
Density after mixing:	0.97 g/cm ³

Physical Properties (Cured) -Room Temperature

Tensile strength, MPa	18.6 – 20.6
Modulus, MPa:	517 - 689

Elongation to break (%):	100 - 125
Shear strength (ASTM D1002), MPa	12 – 15.5



Typical Exotherm Curve for 342-1 at 23°C (10 grams)

Handling:

Monolith 342-1 adhesive (Part A) is flammable. Contents include Methacrylate Ester. Keep containers closed after use. Avoid skin and eye contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get medical attention. Harmful if swallowed. Keep out of reach of children. Keep away from heat, sparks, and open flames.

Note: Because of the rapid curing features of this product, large amounts of heat are generated when large masses of material are mixed at one time. The heat generated by the exotherm resulting from the mixing of large masses of adhesive can result in the release of entrapped air, steam, and volatile gases. To prevent this, use only enough material as needed for use within the working time for the product and confine gap thickness to no more than 8mm. Questions relative to handling and applications should be directed to PROXIMA NTR at +48/44 6328922.

Application:

Monolith 342-1 may be applied manually or with automated equipment. Automated application may be accomplished with a variety of 1 to 1 meter-mix equipment delivering both components to a static mixer. For information concerning meter-mix equipment, contact Proxima NTR Sales Representatives. Pre-measured cartridges are also available, as well as the hand-held guns with which to dispense the adhesive. For more information, contact Proxima NTR at +48/44 6328922. To assure maximum bond strength, surfaces must be mated within the specified working time. Use sufficient material to ensure the joint is completely filled when parts are mated and clamped. All adhesive application, part positioning, and fixturing should occur *before* the working time of the mix has expired. After indicated working time, parts must remain undisturbed until the fixture time is reached. Automated equipment should be constructed of stainless steel or aluminum. Avoid contact with copper or copper containing alloys in all fittings, pumps, etc.. Seals and gaskets should be made of Teflon, Teflon-coated PVC foam, ethylene/propylene or polyethylene. Avoid the use of Viton, BUNA-N, Neoprene or other elastomers for seals and gaskets. Clean-up is easiest *before* the adhesive has cured. Citrus terpene or N-methyl pyrrolidone (NMP) containing cleaners and degreasers can be used for best results. If the adhesive is already cured, careful scraping, followed by a solvent wipe may be the most effective method of clean-up.

EFFECT OF TEMPERATURE

Application of adhesive at temperatures between 18°C and 26°C will ensure proper cure. Temperatures below 18°C will slow cure speed; above 26°C will increase cure speed. The viscosities of Parts A and B of this adhesive are affected by temperature. To ensure consistent dispensing in meter-mix equipment, adhesive and activator temperatures should be held reasonably constant throughout the year.

Cleaning:

For cleaning when uncured use popular solvents water with soap. After curing one can remove adhesive only mechanically.

Storage:

The shelf life of Monolith 342-1 adhesive and activator (Parts A and B) is 6 months from day of shipment from Proxima NTR. Shelf life is based on continuous storage between 12°C and 23°C. Long term exposure above 23°C will reduce the shelf life of these materials. Prolonged exposure of activators, including cartridges which contain activators, above 37°C quickly diminishes the product's reactivity and should be avoided. Shelf life can be extended by refrigeration (7°C - 12°C). These products should never be frozen.

Notes:

Proxima NTR strongly recommends all substrates be tested with the selected adhesive in the anticipated service conditions to determine suitability.

- **Open Time:** The maximum time after application of the adhesive to ensure surface wetting.
- **Working Time:** The time elapsed between the moment Parts A and B of the adhesive system are combined and thoroughly mixed and the time when the adhesive is no longer useable. Times presented were tested at 23°C.
- **Fixture Time:** The interval of time after which surface being joined will support a 1 kg dead weight on a 12.7 mm overlap joint 25.4 mm wide without movement. Times presented were tested at 23°C.
- **Resistance to chemical exposure** varies greatly based on several parameters including; temperature, concentration, bondline thickness, and duration of exposure. The chemical resistance guidelines listed assume long term exposures at ambient conditions.
- In a typical bond line, exotherm temperatures will be lower than the temperatures shown.
- Urethane-modified super-weathering gelcoats may require an alternate adhesive. As with all substrates, these gelcoats should be tested with the selected adhesive to determine suitability.
- Exterior applications require the use of coatings or primers that will inhibit oxidation of the steel.

Delivery:

Side-by-side cartridges 380 ml (minimum order 1 box = 10 pieces.)

All information on this data sheet is based on laboratory testing and is not intended for design purposes. Proxima NTR makes no representations or warranties of any kind concerning these data. Due to variance of storage, handling and application of these materials, Proxima NTR cannot accept liability for results obtained.

This Technical Data Sheet cancels all previous similar documents.

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