



TECHNICAL DATA SHEET

PS-18 Acrylic Adhesive

MIL SPEC A-8576C Type II

FOR CEMENTING	ADVANTAGES
Acrylic (All Grades) Dissimilar Materials: <ul style="list-style-type: none">• ABS• CAB• Wood• Vinyl• Kydex®• Polycarbonate	<ul style="list-style-type: none">• High Joint Strength• High Joint Clarity• Gap Filling Ability• Bubble-Free• Fast Curing

GENERAL DESCRIPTION

Caseway PS-18 is a high strength, three-component structural adhesive for bonding acrylic to itself and other plastics such as ABS, CAB, Vinyl, Kydex®, Polycarbonate, and other materials. Recommended when fast curing time is required. It polymerizes at room temperature forming a clear bond within a few hours. PS-18 is highly versatile and can be used in many applications such as aerospace, museum, aquariums, and more. Tensile strengths of more than 5000 psi can be obtained. For outdoor exposure PS-30 is recommended.

TYPICAL PROPERTIES AND CHARACTERISTICS	
Color: Clear	Working Time (Pot Life): 15 - 25 minutes
Fixture Time: 2 hours	Coverage Area (.04 thickness): Pint Kit - 5 sq. ft Quart Kit - 10 sq. ft Gallon Kit - 40 sq. ft
Viscosity: 1760 - 3620 cps	
80% Strength: 24 - 48 hours	
Reaction Time: 15 - 35 minutes	

*Typical Properties & Characteristics may vary depending on factors such as but not limited to product and room temperature, humidity, materials, and application.

DIRECTIONS FOR USE

*It is the responsibility of the user to test the material compatibility and method used to apply this product before actual application.

Preparation: Parts to be cemented should be prepared before mixing. The surfaces to be joined should be clean and fit accurately without forcing. Surfaces to be cemented may be left as cast, sanded (either wet or by hand), scraped, or machined. Unproper sanding, scraping, or machining may cause stress (crazing). Crazing is a network of fine cracks running on, or slightly under, the surface of plastic materials. The tendency to craze is greatly increased when the stressed material is exposed to a solvent or to solvent vapors. Edges to be cemented should not be polished since polishing usually rounds corners and creates crazing.

PS-18 should be used between 65°F - 75°F. Component temperature should be between this range before use. Humidity and temperature can greatly affect reaction time and joint strength.

Mixing: Ensure all tools and containers will not corrode and are not lined with a coating that will affect either component. Mixing with wood utensils may cause moisture contamination. It is recommended to use a clean glass, polyethylene, or polypropylene container.

Caution! Never mix components B and C directly; A violent reaction may occur.

Mixing Continued:

1. Accurately measure all 3 components using the proportions table.
2. Add Component B to Component A and stir.
3. Instantly add Component C and stir until all components are thoroughly blended. It is recommended to stir evenly in the container without whipping to prevent introducing air into the mixture.
4. Working time will vary depending on mixing time, temperature, and the reaction time provided on the PS-18 certification. If degassing is required, working time may be as little as 10 minutes.

MIXING PROPORTIONS

Component A	Component B	Component C
130 grams	2.4 grams	5 cc (.17 oz)
200 grams	3.6 grams	8 cc (.26 oz)
260 grams	4.8 grams	10 cc (.43 oz)
Pint (16 fl oz)	9.6 grams	20 cc (.67 oz)
Quart (32 fl oz)	19.2 grams	40 cc (1.34 oz)
Gallon (128 fl oz)	76.8 grams	160 cc (5.36 oz)

*Mix only as much can be used in 15 - 20 minutes

APPLICATION

Degassing before applying is required only if maximum strength and best appearance of the joint is required. It will usually be sufficient to allow the mixed cement to sit for 5 - 10 minutes before cementing to allow bubbles to rise to the surface. The product should be used immediately after degassing because the pot life may be as little as 10 minutes.

Apply to one or both surfaces using a polyethylene squeeze bottle, brush, or other suitable applicator.

PS-18 may be used to join acrylic to dissimilar materials. The joint strength will vary and usefulness of the joint limited due to the differences in thermal expansion between dissimilar materials.

Do not use cleaning products that may introduce moisture into the joint.

Cure: The bond will harden in 40 - 60 minutes. Joints are usually cured enough for handling in approximately 2 - 4 hours. For maximum strength, the part should be heat treated for 4 hours at 150°F within 24 hours after PS-18 has cured. The user must determine when machining can be done, (recommended after 24 hours) depending on joint and application. Large areas are more difficult to bond without bubbles and may require 4 or more hours to dry before handling. Bonds typically reach 65 - 80% in 24 - 48 hours.

Low joint strength may be due to several causes. Improper fit of parts, inadequate mixing of the cement, excessive clamping pressures, or poor technique may all help weaken cemented joints

ASSEMBLY

Studies have shown that higher joint strengths can be obtained if a deliberate gap is left between the edges to be joined, with PS-18 polymerizing and filling the gap. The optimum joint configuration is the "open-V" groove. Carefully made, well-finished, open-V groove joints between pieces of colorless acrylic can be almost invisible and exceptionally strong. Parts should be held firmly in a fixture or jig until the PS-18 has hardened (approximately 2 - 4 hours). When joints are made without a gap, the force used to hold the pieces together should be just enough pressure to force any air bubbles out of the joint. Ensure not to apply too much pressure as to force the adhesive out of the joint.

Jigs: The success of a cementing job often depends on the design of the jig(s). The jig should keep the two parts firmly together, but should not force them out of shape. If the part is flexed or forced out of shape, local areas will be stressed and may cause crazing when brought in contact with the cement. The pressure should be great enough to:

- a. Squeeze all air bubbles from the joint.
- b. Avoid stress concentrated at any one point, and
- c. Compensate for the shrinkage that takes place in the joint during setting or hardening.

For most joints, a uniform pressure of approximately 1/psi has been found satisfactory.

PRELIMINARY ANNEALING

Preliminary annealing before cementing will help eliminate or reduce stresses present in machined or saw-cut areas, which may result in crazing during application of cement. Annealing should be done less than 24 hours before cementing if possible.

AVAILABILITY

Available in pint kits (16 fl oz), quart kits (32 fl oz), gallon kits (128 fl oz), 5-gallon kits (640 fl oz), and 55 gallon drums.

Every order comes with certification (Military Spec: MIL-A-8576C, Type II. 13 November, 1984 SAE-AMS-A-8576 REV A, Type II).

SHELF LIFE

Component A: 9 months (274 days)

Component B: 12 months (365 days)

Component C: 9 months (274 days)

STORAGE

Tightly seal and cover containers. Components A & B may be affected if evaporation occurs. Store in original containers in a cool, dark area, away from direct sunlight and sources of ignition (heat, sparks, flames, hot surfaces). Store locked up in a area not accessible to children.

SAFETY

All components of this product are flammable and considered a hazardous materials. Do not handle until all safety precautions have been read and understood. Read the product label & safety data sheet (SDS) for information on proper handling, health risks, firefighting methods, spill procedures, emergency contact information, precautionary information, disposal information & more. SDS are available at www.casewayproducts.com or by emailing support@casewayproducts.com.

Wear protective gloves, protective clothing, eye protection, face protection. This product should never be used in a poorly ventilated (confined) area and without a suitable respiratory mask. This product is intended for use by experienced individuals

* The information, suggestions, technical data, and advice provided on this sheet are based on test results, knowledge, and experience believed to be accurate and reliable. However, all information, suggestions, technical data, and advice are not to be considered a warranty and Caseway Industrial Products, Inc. assumes no liability for any direct, indirect punitive, incidental, special consequential damages, to property or life.