




Chem-Set CA5 Cyanoacrylate Adhesives

Chem-SetTM CA5 Cyanoacrylate

August 2020

Features & Benefits

-  Versatile and general purpose
-  Good gap fill ability
-  Instant setting

Approved to MIL-A-46050C Type II Class 3 (existing designs)

Description

Chem-SetTM CA5 is a medium-high viscosity cyanoacrylate for large gap fill applications.

Chem-SetTM CA5 provides faster set times and improved gap-filling capability compared to conventional cyanoacrylates. The adhesive bonds to a wide range of substrates including metals, ceramics, plastics and elastomers. It is excellent for bonding difficult-to-bond plastics such as polyacetals. It can also be used on passivated metal surfaces.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	1,200-2,400 mPa.s (cP)
Specific gravity	1.1

Typical Curing Properties

Maximum gap fill	0.43 mm 0.017 in
Fixture / handling time* (0.3 N/mm ² shear strength is achieved)	5-10 seconds (Steel) 5-10 seconds (Buna N Rubber) 5-10 seconds (Phenolic)
Full strength	24 hours

*Handling times can be affected by temperature, humidity and specific surfaces being bonded.

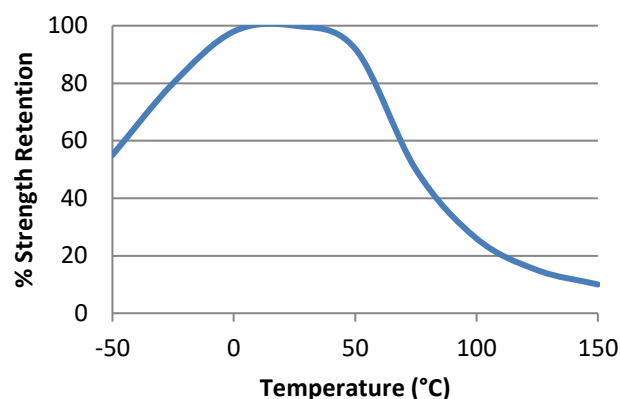
Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel 20-22 N/mm ² (2900-3200 psi) ABS >6 N/mm ² (>870 psi)** PVC >6 N/mm ² (>870 psi)** Polycarbonate >5 N/mm ² (>725 psi)**
Impact strength (ASTM D-950)	3-5 kJ/m ² (1.4-2.4 ft-lb/in²)
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C
Coefficient of thermal conductivity	0.1 W/(m.K)
Hardness (ISO868)	85 Shore D

*Strength results will vary depending on the level of surface preparation and gap.

**Substrate failure

Hot Strength



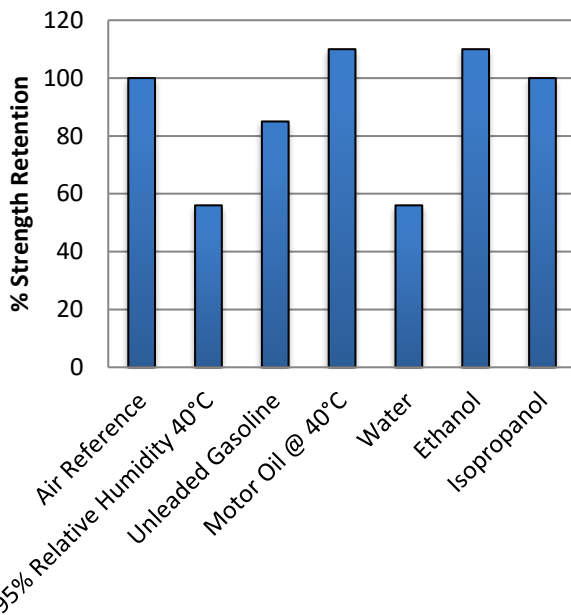
"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

Chem-SetTM CA5 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

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Chemical Resistance



Specimens were immersed for 1000 hours at 22°C (unless otherwise stated).

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Use a suitable solvent (such as acetone or isopropanol) for the degreasing of surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Directions for Use

- 1) Apply the adhesive sparingly to one surface.
- 2) Bring the components together quickly and correctly aligned.
- 3) Apply sufficient pressure to ensure the adhesive spreads into a thin film.
- 4) Do not disturb or re-align until sufficient strength is achieved, normally in a few seconds.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration. Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

Storage & Handling

Storage Temperature	2 to 7°C (35 to 45°F)
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Allow adhesive to reach room temperature before opening bottle to prevent condensation inside the bottle which can reduce shelf life.



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