

PRODUCT DESCRIPTION

SEALTEC 1216 is a general industrial grade Cyanoacrylate adhesive. It has been specially formulated to achieve the strongest possible bond between rough or irregular surfaces, on most metals, plastics or rubbers. **SEALTEC 1216** is a one-component, solvent-free system and does not require the use of a catalyst, heat or clamps. When a thin layer of **SEALTEC 1216** applied between two surfaces comes into contact with atmospheric moisture, a rapid polymerization occurs producing the ultimate bond.

TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---------------------------------------|--|
| Base | Ethyl Cyanoacrylate |
| Color | Transparent, colorless to yellowish liquid |
| Specific Gravity @ 25°C | 1.1 |
| Refractive Index (n D ²⁰) | 1.439 |
| Flash Point | See MSDS |
| Vapor Pressure (hPa) | < 1 |
| Viscosity (cP) · 25°C | 900 – 1300 |
| Shelf life | 12 months |

*Keep in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability. When stored in a refrigerator, allow the adhesive to gradually warm to room temperature prior to use. It will prevent condensation inside the bottle which can reduce shelf life. Containers should be tightly sealed when not in use. The shelf-life is 18 months from date of manufacture.

TYPICAL CURING PERFORMANCE

The rate of cure can be affected by temperature, humidity, the smoothness of the surface, the closeness of the surface and specific surfaces being bonded. Although full functional strength is developed in a relatively short time, curing continues for at least 24 hours before full chemical/solvent resistance is developed.

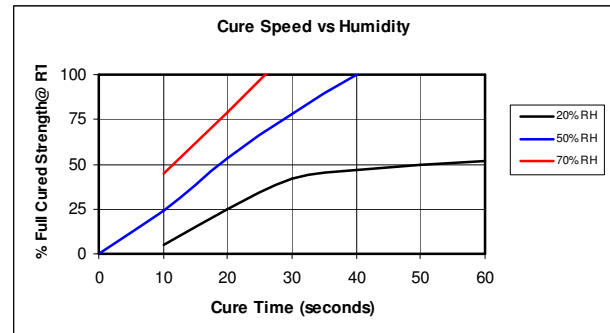
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. Acidic surfaces such as paper and leather may have longer cure times than most plastics and rubbers. Some plastic with very low surface free energies, such as polyethylene, polypropylene, PTFE and silicone rubber may require the use of a primer. The table below shows the fixture time achieved on different materials at 25°C/50% RH. This is defined as the time to develop shear strength of 0.12 N/mm² (1.2 kgf/cm²) and the strength keeps at least 10 seconds.

| | |
|-----------------|-----------------|
| Steel to Steel | 20 – 55 seconds |
| Stainless Steel | 30 – 90 seconds |
| Aluminum | 10 – 30 seconds |
| Zinc plated | 40 – 90 seconds |
| ABS to ABS | 15 – 45 seconds |
| ABS to NBR | 5 – 15 seconds |
| ABS to Wood | 5 – 10 seconds |
| NBR to NBR | 5 – 10 seconds |
| Polycarbonate | 20 – 60 seconds |

Cure Speed / Humidity

The following graph shows the tensile strength developed at different levels of humidity.



Cure Speed vs. Bond Gap

The rate of cure will depend on the bond line gap. A thinner bond line will give faster polymerization and a strong bond. Large bond gaps will result in a slower cure and lower bond strength. Sealtec Activator may be used to increase cure speed.

Cure Speed vs. Activator

Sealtec Cyanoacrylate Activators may be used in conjunction with Sealtec Cyanoacrylate Adhesive where cure speed needs to be accelerated. Cure speeds of less than 2 seconds can be obtained. The use of an activator may reduce the final bond strength. If bond strength is critical testing on the parts is recommended to measure the effect. When using the activator apply it to one side of the bond and the adhesive to the other.

TYPICAL PROPERTIES OF CURED MATERIAL

| Physical Properties | |
|---|------------------------|
| Coefficient of Thermal Expansion (K ⁻¹) | 100 x 10 ⁻⁶ |
| Coefficient of Thermal Conductivity (W/m.K) | 0.10 |
| Softening Point | 165°C |
| Electrical Properties | |
| Volume Resistivity (Ω.cm) | 1 x 10 ¹⁶ |
| Surface Resistivity (Ω) | 1 x 10 ¹⁶ |
| Dielectric Constant @ 10 kHz | 2.30 |
| Dielectric Dissipation Factor @ 10 kHz | <0.02 |
| Dielectric Breakdown Strength (kV/mm) | 25 |

TYPICAL PROPERTIES OF CURED MATERIAL

After 24 hours at 25°C.

| Tensile Strength | |
|------------------|-------------------------------|
| Steel | 190 – 210 Kg/ cm ² |
| Stainless Steel | 250 – 450 Kg/ cm ² |
| Aluminum | 170 – 190 Kg/ cm ² |
| Copper | 150 – 170 Kg/ cm ² |
| PVC | 40 – 60 Kg/ cm ² |
| ABS | 50 – 70 Kg/ cm ² |
| Polycarbonate | 80 – 120 Kg/ cm ² |
| Polystyrene | 30 – 45 Kg/ cm ² |
| NBR | 5 – 9 Kg/ cm ² |
| SBR | 5 – 10 Kg/ cm ² |

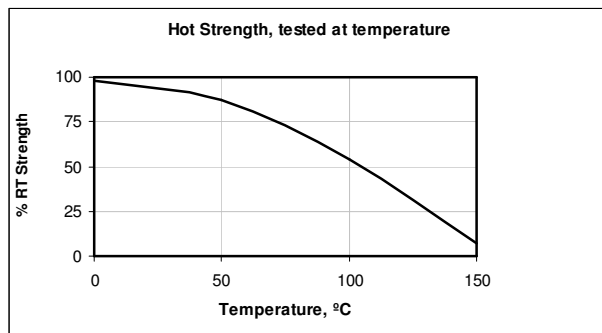
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 1 week @ 25°C

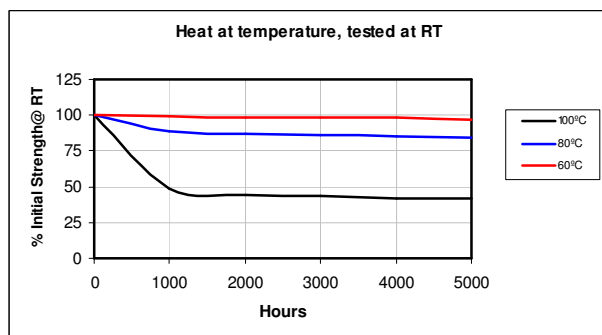
Lap Shear Strength, ISO 4587/ASTM D1002/JIS K6850
GBMS (Grit Blasted Mild Steel)

Heat Aging

Aged at temperature indicated and tested @25°C



Heat Aging:



Chemical/Solvent Resistance

Aged under conditions indicated and tested @25°C

| Environment | Temp. °C | % of initial strength | | |
|-----------------------|----------|-----------------------|---------|----------|
| | | 100 hrs | 500 hrs | 1000 hrs |
| Water | 25 | 97 | 92 | 85 |
| Ethanol | 25 | 96 | 94 | 95 |
| Isopropanol | 25 | 100 | 98 | 96 |
| Water/Glycol | 25 | 95 | 90 | 94 |
| Unleaded Gasoline | 25 | 101 | 95 | 95 |
| Motor Oil | 25 | 102 | 95 | 90 |
| 98% Relative Humidity | 40 | 90 | 85 | 70 |

GENERAL INFORMATION

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 (SDS).

Directions for use:

1. Make sure the surfaces to be bonded are clean and dry (preferable to solvent-wipe plastics, glass, and rubber, and to acid-treat metals).
2. Dispense a drop or drops to one surface only. Apply only enough to leave a thin film after compression.
3. Press parts together and hold firmly for a few seconds. Good contact is essential. An adequate bond develops in less than one minute. (Maximum strength is achieved in 24 to 48 hours).
4. Wipe off excess adhesive from the top of the container and recap **SEALTEC 1216** if left uncapped, may deteriorate by contamination from moisture in the air.
5. Because **SEALTEC 1216** condenses by polymerization, sometimes whitening will occur on the surface of the container or the bonded materials. Should this happen, wipe surfaces well with acetone.

Storage

Keep in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability. When stored in a refrigerator, allow the adhesive to gradually warm to room temperature prior to use. It will prevent condensation inside the bottle which can reduce shelf life. Containers should be tightly sealed when not in use. Product removed from containers may be contaminated during use. Do not pour back any product to the original container. Misuse of product will void all warranties. The shelf-life is 18 months from date of manufacture.

PRECAUTIONS

- 1) Use with proper ventilation. Avoid contact with skin and eyes.
- 2) If contact with skin occurs, rinse with warm water or

dissolve gradually with solvent such as acetone or nitromethane. Do not try to remove forcibly.

- 3) If adhesive gets into eye, keep eye open and rinse thoroughly. Seek medical attention immediately.
- 4) Keep well out of reach of children.
- 5) Keep adhesive in a cool, dry location and out of direct sunlight. For long-term storage, refrigeration 5 °C is recommended.
- 6) When take out the product from refrigerator, please allow adhesive to reach room temperature before opening bottle to prevent condensation inside the bottle which can reduce shelf life.

Important Notice:

Sealtec AG believes the information on the data sheets is reliable and accurate as is technical advice provided by the company. Sealtec AG makes no warranties (expressed or implied) regarding the accuracy of the information and assumes no liability regarding the handling and usage of this product. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. Sealtec AG further disclaims any liability for consequential or incremental damages of any kind including lost profits. No agency or representative or employee of this company is authorized to change this provision.