



## CS GEL

### PRODUCT DESCRIPTION

Chemence CS-GEL Instant Superglue is a faster curing, very high viscosity Ethyl Cyanoacrylate based adhesive. The new formulation shows greater surface insensitivity thus allowing faster bonding of all substrates and improved performance on wood, card and metals. The new gel formulation exhibits improved thixotropic behaviour and uniform appearance.

### TYPICAL APPLICATIONS

CS-GEL is specially formulated for high strength, general purpose bonding of most metals, wood, card, plastics, rubbers, leather, fabrics and other common substrates. The gel formulation is suitable for bonding poorly mating components and for porous substrates such as china and other ceramics. It is also suitable for use on vertical and over-head surfaces as it will not drip or slump.

### PROPERTIES OF MATERIAL

		Value
Chemical type		Ethyl
Appearance		Clear Gel
Specific Gravity		1.10
Viscosity <sup>1</sup>	cPs	Thixotropic
	(N/mm <sup>2</sup> )	50-90,000
Tensile Strength <sup>2</sup>	(secs)	21
Fixture Time	(hours)	3-60
Full Cure	(°C)	24
Flash Point	(months)	> 85
Shelf Life @ 5°C	(mm)	12
Max Gap Fill	(°C)	0.5
Operating Temperature Range	(°C)	-50 to +80

<sup>1</sup> Brookfield RVT, 'T-spindle' C @ 2.5rpm

<sup>2</sup> ISO 6922

### CURING PERFORMANCE

#### Typical Speed:

Mild Steel	15-30
Balsa wood	~3
Cardboard	25-35
ABS	10-15
PVC	15-30
Buna Rubber	~3

#### Tensile strength attained, ISO6922, on mild steel:

2 mins.	>4 N/mm <sup>2</sup>
10 mins.	>9 N/mm <sup>2</sup>
24 hours (full cure)	15-27 N/mm <sup>2</sup>

#### Cure speed vs. substrate

The speed of cure of cyanoacrylates varies according to the substrates to be bonded. Acidic surfaces such as paper and leather will have longer cure times than most plastics and rubbers. Some plastics with very low surface energies, such as polyethylene, polypropylene and Teflon® require the use of Chemence LA-77 Primer (see LA-77 TDS for further info).

#### Cure speed vs. environmental conditions

Cyanoacrylate adhesives require surface moisture on the substrates in order to initiate the curing mechanism. The speed of cure is reduced in low humidity conditions. Low temperatures will also reduce cure speed. All figures relating to cure speed are tested at 21°C.

#### Cure speed vs. bond gap

Chemence CS-Gel cyanoacrylate will give best results on reasonably close fitting parts. A thinner bond line will give faster polymerisation and a strong bond. Large bond gaps (>0.5mm) will result in slower cure speeds and lower bond strengths

#### Cure speed vs. activator

Chemence Activators LA-11 and LA-12 may be used in conjunction with Chemence CS-Gel where cure speed needs to be accelerated. Cure speeds of less than 5 seconds can be obtained. The use of an activator may possibly reduce the final bond strength by up to 30% - testing on the parts is recommended to measure the effect if bond strength is critical.

### ENVIRONMENTAL RESISTANCE

#### Hot strength

Chemence cyanoacrylate adhesives are suitable for use at temperatures up to 80°C. At 80°C the bond will be approximately 70% of the strength at 21°C. The bond strength at 100°C is approximately 50% of full strength at 21°C.

#### Heat ageing

Chemence cyanoacrylates retain over 80% of their strength when heated to 80°C for 90 days and then tested at 21°C. Heating the bond to 100°C and then testing at 21°C gives bond strength of approximately 35% of initial strength.

#### Chemical / Solvent Resistance

Chemence cyanoacrylates exhibit excellent chemical resistance to most oils and solvents including motor oil, leaded petrol, ethanol, propanol and freon. Cyanoacrylates are not resistant to high levels of moisture or humidity over time.

### REMOVAL OF CURED CYANOACRYLATE

Cured cyanoacrylate may be removed from most substrates, and parts disassembled, with Chemence LA-68 Debonder. It is not possible to fully remove cyanoacrylate from fabrics.

### GENERAL INFORMATION

For safe handling of this product consult the Material Safety Data Sheet.



TECHNICAL

**DIRECTIONS FOR USE**

Bond speed is very fast so ensure that parts are properly aligned before bonding.

Chemence Activators may be required if there are gaps or porous surfaces. Some plastics may require application of Chemence LA-77 Primer.

Ensure parts are clean, dry and free from oil and grease.

Product is normally hand applied from the bottle. Apply sparingly to one surface and press parts firmly together until handling strength is achieved. As a general rule, as little cyanoacrylate as possible should be used – over application will result in slow cure speed and lower bond strength.

Please contact your Chemence representative for further advice on dispensing solutions.

**PRESENTATION**

Tubes: ..... 3g, 4.5g & 20g,  
Available in bulk for use with dispensing systems.

**STORAGE**

Store in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability.

**DATA RANGES**

The data contained in this data sheet may be reported as typical value and/or range. Values are based on actual test data and are verified on a regular basis.

**NOTES**

The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Chemence Ltd. and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.