ALCHEMIX 8454 Adhesive

8454 Adhesive 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.

Applications

8454 Adhesive 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 Uncured Material

Property	Units	Result
Chemical Type	-	Ethyl
Appearance	-	Clear Gel
Specific Gravity	-	1.10
Viscosity @ 2.5rpm **Viscosity @ 20rpm**	mPa.s	50,000 – 90,000 7,000 – 20,000
Tensile Strength	N/mm^2	21
Fixture Time	Seconds	3 – 60
Full Cure	Hours	24
Flash Point	℃	> 85
Shelf Life (20℃)	Months	12
Max Gap Fill	mm	0.5
Operating Temperature Range	℃	-50 to +80

Typical Curing Performance

Substrate	Cure Time (seconds)
Mild Steel	15 – 30
Balsa Wood	~3
Cardboard	25 – 35
ABS	10 – 15
PVC	15 – 30
Buna Rubber	~3

Directions for Use

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

Activators may be required if there are gaps or porous surfaces. Some plastics may require application of 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.

Environmental Conditions

Cyanoacrylates 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℃.

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 8770 Primer.

Activator

Activator 8479 may be used in conjunction with cyanoacrylates where cure speed needs to be accelerated. Cure speeds of less than 2 seconds can be obtained with most cyanoacrylates. The use of an activator can reduce the final bond strength by up to 30% Testing on the parts to measure the effect is recommended.

Bond Gap

Cyanoacrylates give best results on close fitting parts. The product should be applied in a very thin line in order to ensure rapid polymerisation and a strong bond. Excessive bond gaps will result in slower cure speeds. 8479 Activator may be used to greatly increase cure speeds.

Environmental Resistance: Hot Strength

Cyanoacrylates 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.

Chemical / Solvent Resistance

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 a Debonder.

It is not possible to fully remove cyanoacrylate from fabrics

Storage

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

Further Information

All data listed relates to typical values. This data should not be considered a product specification.

Our technical advice, whether verbal, or in writing is given in good faith, but without warranty – this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended process and use.

Before using any of our products, users should familiarise themselves with the relevant Technical and MSDS provided by Alchemie Ltd.

Alchemie Limited

Alchemie Ltd develop, formulate and distribute Epoxy Resins, Polyurethane Resins, Silicones, Model Boards and Sheet Wax for use in the following applications:

- Electrical encapsulation
- Rapid Prototyping
- Prototypes
- Casting
- Gel Coating
- Laminating
- Model Making
- Master Models
- Flexible and rigid mould making

We offer fast service, technical support, development expertise, innovative products, diverse knowledge and experience.

We are a well-established company, with a high level of investment and experience. We implement BS EN ISO 9001.