



ChemTools 8414 Cyanoacrylate Adhesive Plastic Bonder

ChemTools 8414 is a medium viscosity cyanoacrylate adhesive, with enhanced performance on vinyl and other plastics.

Applications:

- Specially formulated to bond various plastics such as ABS, polycarbonate, styrene, polypropylene, PVC, polyesters. PET, etc.
- Bonding vinyl plastics to themselves or to metals.
- Optical goods, Medical devices, Telephone and Camera manufacturing, Toys, Gift items, O-Rings, etc.

Bonds:

■ Acrylic	■ Polycarbonate	■ Polyamide
■ PVC	■ PEEK	■ PETG
■ Polysulfone	■ PET	■ Latex
■ ABS	■ Rubber	■ Metals

Bonding Times:

Under normal conditions, the surface moisture initiates the curing process. Functional strength developed in a short time but curing continues for at least 24 hours before full chemical/solvent resistance is developed. The rate of cure will depend on substrate used.

Steel	15-30 seconds	ABS	2-10 seconds
Polycarbonate	15-50 seconds	PVC	2-10 seconds
Neoprene	> 5 seconds	Phenolics	5-15 seconds
Aluminium	2-10 seconds	Nitrile Rubber	5-7 seconds

Physical Properties:

Liquid

Composition	Ethyl Cyanoacrylate Adhesive
Appearance	Colorless liquid
Viscosity@ 25°C, cps (Brookfield LVF, Spindle 1-60 rpm)	70 - 100

Cured Adhesive

Gap Filling	0.2 mm
Tensile Shear Strength	15-18 N/mm ²
Service Temperature Range	-60 to + 80°C
Full Cure	24 hours
Melting Point Temperature	160 to 170°C



Mechanical Properties

Glass Transition Temperature, ASTM E228	125°C
Dielectric Strength, ASTM D149, v/mil	625
Coefficient of thermal expansion, ASTM D696, K ⁻¹	90 x 10 ⁻⁶
Coefficient of thermal conductivity, ASTM C177, Wm ⁻¹ K ⁻¹	0.1

Shear Strength, ASTM D1002/DIN 53283

ABS	8 – 14 N/mm ²
Neoprene Rubber	10 – 15 N/mm ²
PVC	6 – 9 N/mm ²
Acrylic	10 – 15 N/mm ²
Polycarbonate	5 – 20 N/mm ²

Chemical Resistance Properties:

Chemical	Temperature	%Initial Strength Retained	
		500 hrs	1000 hrs
Isopropanol	22°C	85	85
Petrol	22°C	80	75
Motor Oil	40°C	90	90
Mineral Spirit	22°C	90	90

Application Method:

- All surfaces must be clean, dry, dust and grease free. Best result will be achieved with surfaces that have been lightly abraded immediately prior to bonding.
- If using accelerator apply to one component surface only. Apply thin film of adhesive to the other surface and bring the pieces together immediately. Hold for few seconds without disturbing the joints.
- Thin bond lines favour high cure speed. Increasing the bond gap will slow down the rate of cure.

Storage:

Anaerobic adhesives shall be ideally stored in a cool, dry place in unopened containers at a room temperature between 7°C to 28°C. Please do not return any unused material to its original container.

PRECAUTIONS: This product and the auxiliary materials normally combined with it are capable of producing adverse health effects ranging from minor skin irritation to serious systemic effects. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheets (MSDS) for this and all other products being used are understood by all persons who will work with the material.

Warranty: All products purchased from or supplied by ChemTools are subject to terms and conditions set out in the contract. ChemTools warrants only that its product will meet those specifications designated as such herein or in other publications. All other information supplied by ChemTools is considered accurate but are furnished upon the express condition the customer shall make its own assessment to determine the product's suitability for a particular purpose. ChemTools makes no other warranty, either express or implied, including those regarding such other information, the data upon which the same is based, or the results to be obtained from the use thereof; that any product shall be merchantable or fit for any particular purpose; or that the use of such other information or product will not infringe any patent.