Technical Data Sheet

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ONEBOND INSTANT GEL ADHESIVE 754

Description

ONEBOND INSTANT GEL ADHESIVE 754 is a cyanoacrylate adhesive specially formulated for the assembly of difficult-to-bond materials. It will highly polymerize with moisture in the air for a fast cure and meet the highest industrial standards. The gel consistency prevents adhesive flow even on vertical surfaces. ONEBOND 754 product does not contain solvent and it is used in demanding applications for a wide range of materials including plastics and elastomers, where very good performance characteristics are required. They include resistance to most types of environmental exposures, moderate heat, aging and many different chemicals, as well as high strength and fatigue resistance. The product is a single component system and does not require heat, mixing, clamps and the use of a catalyst. When a thin layer of ONEBOND 754 applied between two surfaces meets atmospheric moisture, a rapid polymerization occurs producing the ultimate bond strength. The product is also suited for bonding porous materials such as wood, paper, leather and fabric.

Typical physical properties

Composition:	Ethyl 2-Cyanoacrylate
Appearance:	Clear to slightly cloudy gel
Components:	Single part- requires no mixing or heating
Specific gravity @25ºC (g/ml):	1.1
Cure:	Humidity
Viscosity, Brookfield @25ºC mPa·s (cP):	150000 - 200000 (thixotropic)
Full cure (hours):	24
Shelf life:	12 months unopened when stored at 2 - 10 ºC

Typical Curing Performance

Under normal conditions, atmospheric humidity initiates the curing process. Although full functional strength develops in a relatively short time, curing continues for at least 24 hours before reaching maximum strength. The rate of cure can be also affected by temperature, the smoothness of the surface, the closeness of the surface and specific surfaces being bonded.

Cure speed (FIXTURE TIME) 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 prime. Materials are tested at 25 ºC/50% RH and fixture time is defined as the time to develop shear strength of 0,12 N/mm2 and the strength keeps at least 10 seconds.

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Substrate	Fixture Time (s)
Pine wood	30 - 45
Beech wood	10 - 15
Oak wood	30 - 60
ABS	< 5
Polycarbonate	10 - 15
Aluminum A5754	10 - 20
Mild Steel	< 5
Leather	5 - 15
Paper	5 - 10

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.

Typical Performance of Cured Material

Adhesive properties
Cured for 72 hours @ 25 ºC

Lap Shear Strength
According to ISO 4587 / ASTM D1002

Substrate	Fixture Time (s)
ABS	8 - 9*
Aluminum	9 - 11
PVC (Polyvinyl Chloride)	7 - 9*
GBMS (Grit Blasted Mild Steel)	20 - 25
PC (Polycarbonate)	9 - 11*
NBR (Nitrile-Butadiene Rubber)	0,5 - 1*

(*) Substrate failure

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Typical Environmental Resistance

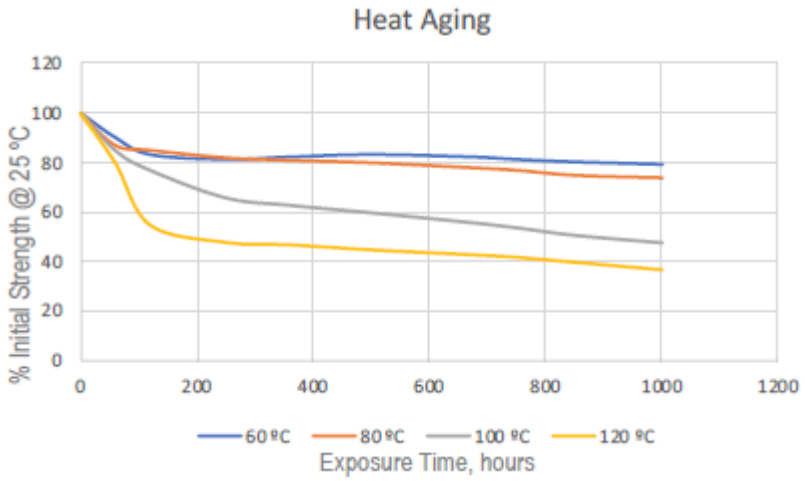
Heat Aging

Cured for 1 week @ 25 ºC

Lap Shear Strength

According to ISO 4587 / ASTM D1002
GBMS (Grit Blasted Mild Steel)

Aged at temperature indicated and tested at 25 ºC



Chemical / Solvent Resistance

Aged under indicated conditions and tested @ 25 °C

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
Water	25	89	86	71
Ethanol	25	103	97	96
Isopropanol	25	110	105	100
Water/glycol	25	100	90	85
Unleaded Gasoline	25	95	92	94
98% Relative humidity	40	87	85	72

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Lap Shear Strength
According to ISO 4587 / ASTM D1002
PC (Polycarbonate)

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
Air	25	102*	101*	105*
98% Relative humidity	40	101*	97*	97*

(*) Substrate failure

General Informartion

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, dry and grease-free before applying the adhesive.
2. Dispense a drop or drops to one surface only.
3. Bring the components to together quickly and correctly aligned.
4. Apply sufficient pressure to ensure the adhesive spreads into a thin film.
5. Do not disturb or re-align until sufficient strength is achieved, normally in a few seconds.
6. Any surplus adhesive can be removed with solvent, such as nitromethane or acetone
7. Because ONEBOND 754 condenses by polymerization, sometimes blooming will occur on the surface of the container or the bonded materials. Should this happen, wipe surface well with acetone or nitromethane.
8. Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

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 warrantees. The shelf-life is 12 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.

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5. Keep adhesive in a cool, dry location and out of direct sunlight. For long term storage, refrigeration to 5 ºC 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

The information provided in this Technical Data Sheet (TDS), including the recommendations for use and application of the product, is based on our knowledge and experience with the product as of the date of preparation of this TDS. The product can have a great variety of applications and different working and application conditions according to the environment in which it is found, which are beyond our control. Therefore, Onebond will not be responsible for the suitability of our product in the processes and production conditions for which it is used, nor for the applications or results that are expected from it. We recommend that you carry out your own tests to confirm the operation of our product. Onebond 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.

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