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ThreeBond Co., Ltd.

Technical Data

ThreeBond 1530C

Single Component, Moisture Curable, Elastic Adhesive (Clear)

1. Product description

ThreeBond 1530C is a solvent-free, single component, moisture curable, elastic adhesive. Its main component is a silyl-containing special polymer. The adhesive cures when reacting with a trace of moisture in the air. It exhibits strong tackiness about seven minutes (at a temperature of 23°C and a relative humidity of 50%) after it is applied. If a substrate is bonded at this stage, it is unnecessary to temporarily fix the substrate with a jig. When a substrate is bonded immediately after the adhesive is applied in the same manner as when it is bonded with a conventional adhesive, the adhesion will increase with time.

On one hand, the adhesive is applicable to parts on which RTV silicone (sealant or potting agent) is used. Since the adhesive does not contain low molecular cyclic siloxane, there is no problem of electrical contact failure.

2. Features

- (1) Solvent-free and environmentally-friendly
- (2) Less odor
- (3) Single component and fast curing
- (4) Light- or heat-curing equipment not required
- (5) Has initial tackiness therefore temporary fixing not required.
- (6) Elastic adhesive with good peel strength and vibration and impact stress relaxation Good adhesion between different materials
- (7) Good adhesion to wide range of materials, including metals, plastics, rubbers, wood materials and inorganic materials
- (8) Cured adhesive is clear, and its overflow is invisible.

3. Applications

Bonding (universal bonding), sealing and potting of various materials

4. Properties and characteristics

4.1 General properties

Test item	Unit	Result	Test method	Remarks
Appearance	—	Translucent	3TS-201-02	—
Viscosity	Pa·s	100	3TS-210-02	No.7 × 20 rpm
Specific gravity	—	1.31	3TS-213-02	—
Skinning time	min	7	—	23°C, 50%RH

4.2 Characteristics of cured material: (23°C, 50%RH) × Curing for 7 days

Test item	Unit	Result	Test method	Remarks
Tensile strength	MPa	4.1	3TS-320-01	—
Elongation	%	200	3TS-320-01	—
Hardness		A55	3TS-215-01	—

* Dumbbells No.3 Cured film thickness 2 mm

4.3 Lap shear strength (3TS-301-13)

Unit : MPa

Material		Result	Remarks
Metals	Aluminum	4.3	Cohesive failure
	Iron (SPCC-SB)	3.5	Cohesive failure
Plastics	Acryl	3.8	Cohesive failure
	PPO (Polydimethylphenyleneoxide)	4.7	Cohesive failure
	ABS	2.4	Cohesive failure
	Nylon 66	3.2	Cohesive failure
	PC (Polycarbonate)	4.5	Cohesive failure
	Polystyrol	2.5	Interfacial failure
	Phenol	4.3	Cohesive failure
	PPS (Polyphenylene sulfide)	1.3	Interfacial failure
	PET (Polyethylene terephthalate)	1.1	Interfacial failure
Other	Lauan plywood	4.0	Cohesive failure

* Bonding of substrates of same material/Application to both surfaces/Open time: 5 min (time after application to bonding)

* (23°C, 50%RH) × Curing for 7 days

4.4 T-peel strength (3TS-304-23)

Unit : kN/m

Material	Result	Remarks
Aluminum	1.9	Cohesive failure
Canvas	1.6	Cohesive failure

- * Bonding of substrates of same material/Application to both surfaces/Open time: 5 min (time after application to bonding)
- * (23°C, 50%RH) × Curing for 7 days

Surface treatment of test pieces

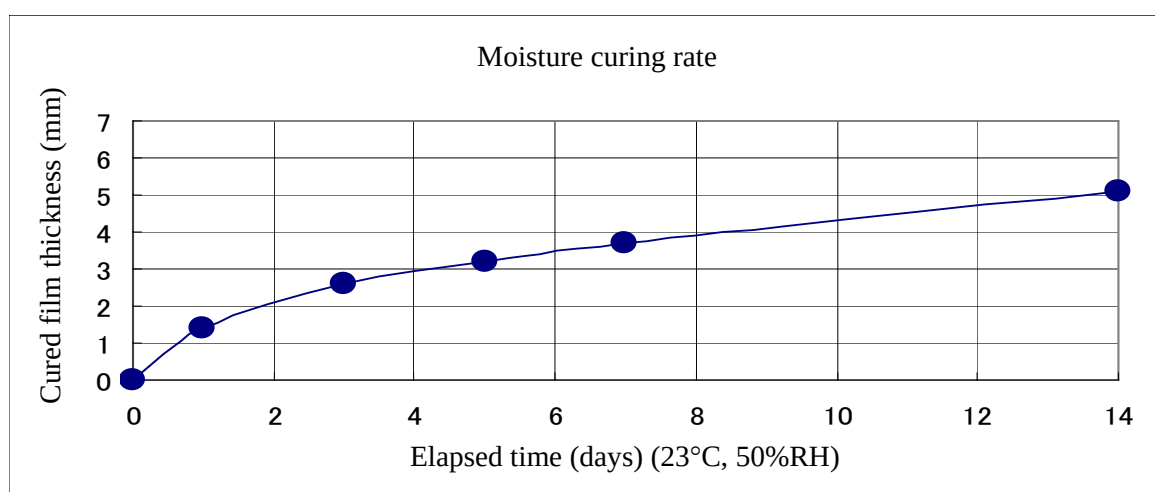
Metals	Degreasing with xylene
Plastics	Wiping with ethanol
Rubbers	Degreasing with xylene after rubbing with sandpaper

- * Note that the adhesive will not exhibit sufficient adhesion to some materials, such as polyethylene, polypropylene, polyacetal and fluorocarbon resin.

5. Moisture curing rate (thick film curability), (3TS-222-94)

The moisture curing rate in an environment at 23°C and 50%RH is shown below.

The curing rate of de-oxime silicone under the same conditions is about 1.5 to 3.0 mm/day.



6. Usage

(A) Application to both surfaces

- (1) Completely remove stains such as rust, oil and dirt from the surfaces of the substrates with sandpaper or alcohol.
- (2) Apply the adhesive thin and uniformly to both surfaces with a spatula.
- (3) Strong tackiness like adhesive tape will develop after the surfaces are left for about 7 minutes (at 23°C and 50%RH).

Laminate the surfaces at this time, and temporary fixing will not be required. The strong tackiness is maintained within about 7 to 20 minutes after application. If the surfaces are left unbonded for a longer time, the strong tackiness will not be obtained, and re-application will be required.

(B) Application to one surface

- (1) Completely remove stains such as rust, oil and dirt from the surfaces of the substrates with sandpaper or alcohol.
- (2) Apply the adhesive thin and uniformly to one surface.
- (3) Laminate the surfaces within 5 minutes. In this case, there is no temporary fixing effect, therefore use a jig to temporarily fix them.
 - * If the adhesive is applied too thick, the initial tackiness will develop later.
 - * If the tackiness is not necessary, substrates can be bonded immediately after application. (Only when the bonding area is small)
 - * The time to development of tackiness slightly varies depending on temperature and humidity. Check the tackiness when using the adhesive.
 - * After bonding, the substrates will be fixed after 1 to 2 hours. Practical strength can be attained in 24 to 48 hours.
 - * The curing time depends on the coating thickness, temperature and humidity. Check the curing time when using.

7. Directions for use

- (1) Harmful to health. Do not directly touch nor inhale fumes.
- (2) When using this adhesive, wear appropriate protective equipment.
- (3) Keep out of reach of children.
- (4) If in eyes, rinse with clean water for over 15 minutes, and get medical attention.
- (5) If on skin, wipe off with a cloth, and wash the skin with soap.
- (6) Before using, sufficiently confirm whether the method of application and the purpose are appropriate.
- (7) Work with the product in accordance with related laws and regulations, such as the Industrial Safety and Health Act.
- (8) For other hazard and toxicity information, see the material safety data sheet (MSDS).

8. Storage

To prevent deterioration and contamination, seal the cap tightly. When storing, avoid high temperature, high humidity, direct sunlight and heat sources. Store in a dark dry place at -5 to 25°C.

9. Disposal

Dispose of the product as industrial waste.

10. Cautions**For Industrial Use Only**

(Do not use for household purposes.)

This product was developed for general industrial use. Before using this product, the user must accept the following terms.

- The technical data given herein are not guaranteed values, but examples of experimental values obtained by our specified test methods.
We do not guarantee that the uses described herein do not conflict with any intellectual property right.
- Users are asked to examine whether the product is appropriate to the purpose of use and can be used safely before they use it and bear all responsibilities and hazards involved in its use. Never use the product for medical implants that may be embedded, injected or left in the body.
- We are not liable for personal injury or property damage caused by improper handling of this product.
If the properties or usage of the product to be used are unclear, never use it.
- For detailed safety information of the product, see the material safety data sheet (MSDS).
To obtain the MSDS, contact our sales office or customer service center.
- Information in this technical document is subject to change at our discretion.