



## Technical Data Sheet for

### Sinohesive™ EZ5101

#### Description

#### Adhesive Type

- Sinohesive™ EZ5101 is a one-component reactive hot melt adhesive with 100% solid content, fast assembly in electronics, electrical appliances, etc., with high initial tack, suitable substrates include metal, glass and most plastics, such as nylon.

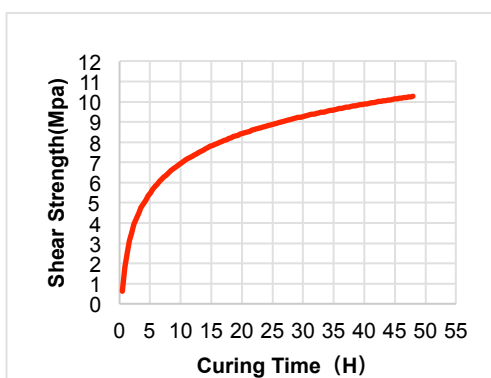
#### Main Feature

- Excellent fluidity
- Longer opening time
- With higher initial adhesion
- With a wide temperature range
- Has good weather resistance capability and solvent resistance capability

#### Performance parameter

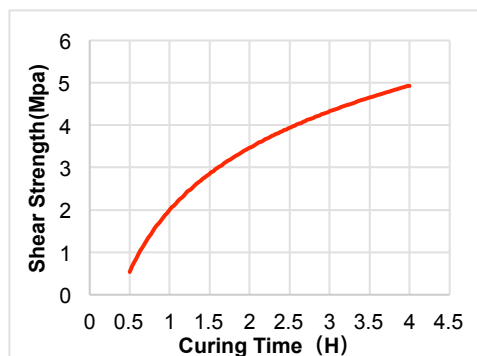
Solid Content	100%
Composition	2-isocyanate end group prepolymer
Status @ 25℃	Solid state
Density @ 110℃	About 1.07 g/cm <sup>3</sup>
Color	Clear and transparent, slightly yellow
Viscosity @ 110℃	3200—4000 mPa.s
Open Time@ 25℃	About 4.5 minutes
Curing Speed @ 25℃	About 24 hours
Shear Strength after Curing(PC/PC)	About 9.3 MPa
Shelf Life	6 months
Package	30 ml syringe

#### Typical Shear Strength - Time Curve (48H)



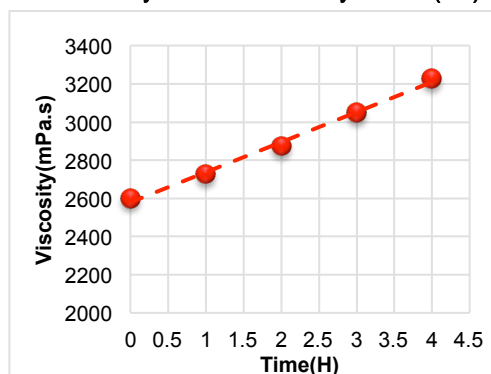
Remark: PC/PC Bead line: 0.3g/m<sup>2</sup> Temperature:26℃ RH%: 50%

#### Typical Shear Strength - Time Curve (4H)



Remark: PC/PC Bead line: 0.3g/m<sup>2</sup> Temperature:26℃ RH%: 50%

#### Viscosity Thermal Stability Curve (4H)



Remark: Keep heating @ 120℃ in syringe

Simulated rework before and after heating intensity change ( MPa ) :

85℃	30min	Oven	
	Normal	After heating	Down to the original ratio
PC/PC:	6.5-8	3.40	42-52%
PC/Al:	4.5-6.5	2.59	40-58%

105-110℃	4-5min	Hot air gun
Normal	After heating	Down to the original ratio
PC/PC: 6.5-8	0.52	6.5-8.0%
PC/Al: 4.5-6.5	0.89	14-20%

#### Guidance

##### Substrate Pretreating

- Oil, dust, water droplets, rust or plasticizer precipitates on the surface of the substrate may seriously affect the properties of the adhesive, therefore, the surface of the part should be clean without contamination.



- During bonding operation, the optimum temperature of the substrate is 20-30℃. Excessive temperature may cause lower strength and shorter opening time. Too low temperature may result in poor bonding or long curing time.

#### Application Equipment

- It is recommended to use an automatic dispenser that can heat 30ml syringes and needles and precisely control temperature.
- Since this polyurethane reactive hot melt will react with moisture in the environment, it must be heated and melted in an isolated environment, without moisture.

#### Operating Temperature

- The recommended operating temperature range is between 105 and 130℃. If the ambient temperature is lower or the production line speed is faster, the setting should be set higher; otherwise, the setting is lower.
- Avoid using excessively high temperature for a long time to prevent excessive viscosity increasing and deteriorating of the glue.

#### Open Time

- After the glue is applied, the glue begins to cross-link with moisture. The open time is about 270 seconds at 25℃, in the case the strip size is 0.25 g/m.
- The bond assembly should be completed as soon as possible within the open time. Bonding beyond open time can result in reduced strength or even poor bonding performance.

#### Press & Assembly

- During bonding and assembling, apply uniform and appropriate pressure to the bonding surface to make sure the rubber strip in even and flat condition.
- Excessive pressure will cause the deformation of the substrate to rebound and the adhesive layer to be too thin; too low pressure will result in too small bonding area and insufficient strength.
- Please determine the holding time of the assembly press according to the specific application, so that the joint surface does not deform and separate after the pressure is released.

#### Curing Condition

- When the cross-sectional dimension of the strip is  $\leq 0.5\text{mm} \times 0.5\text{mm}$ , the ambient temperature is 25℃, and the relative humidity is 50%, the product will be fully cured within 7 days.

- The size of the bonding surface glue, the ambient temperature, the ambient humidity, the permeability of the substrate to moisture, etc. will affect the curing speed.

#### Overfill Cleaning

- If the overflow gel is in a molten state, it should be cooled down to room temperature and scraped off with a hard tool.
- For the residues that are not cured, wipe them off with a rag or some organic solvent that dissolves the polyurethane (e.g. ethyl acetate, isopropanol, toluene, methyl ethyl ketone, etc.)
- Please clean as soon as possible before curing. The sooner, the easier to be cleaned.

#### Health & Safety Protection

- For more detailed safety information, please refer to the MSDS of the product.

#### Shelf Life

- In original containers that are not opened, the temperature is between 5℃ and 25℃, **Sinohesive™ EZ5101** is 6 months. If the package is damaged before use, please stop using it immediately.

#### Importance of Experiment

- The performance of the glue is a critical factor in the final performance of the assembled product, but it is not the only factor. For example, the additives of the substrate, the condition of the surface, the process operation, the environment, etc. will affect the final result. Therefore, we solemnly recommend that before large-scale production, please select equipment, substrate, operators and our glue products to carry out sufficient tests, and determine the next action plan based on the test results, and gradually enlarge the batch size.

#### Conversions:

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$	$\text{NX}0.225 = \text{lb}$
$\text{N/mm}^2 \times 145 = \text{psi}$	$\text{mPa.s} = \text{cP}$
$\text{mm}/25.4 = \text{inches}$	$1\text{MPa} = 1000\text{KPa}$
$1\text{Pa} = 1\text{N/mm}^2$	$1\text{cm} = 0.394\text{in}$
$1\text{N} = 0.225\text{lbf} = 0.102\text{kgf}$	
$1\text{KPa} = 0.0102\text{kgf/cm}^2 = 0.0098\text{atm}$	