7 Super-X Series

Super-X No.8008

Cemedine Super-X is an epoch-making one-part quick curing adhesive with three significant features which are said to be ideal properties of the adhesives; "pressure-sensitive adhesion", "elastic adhesion" and "solventless adhesion".

Features

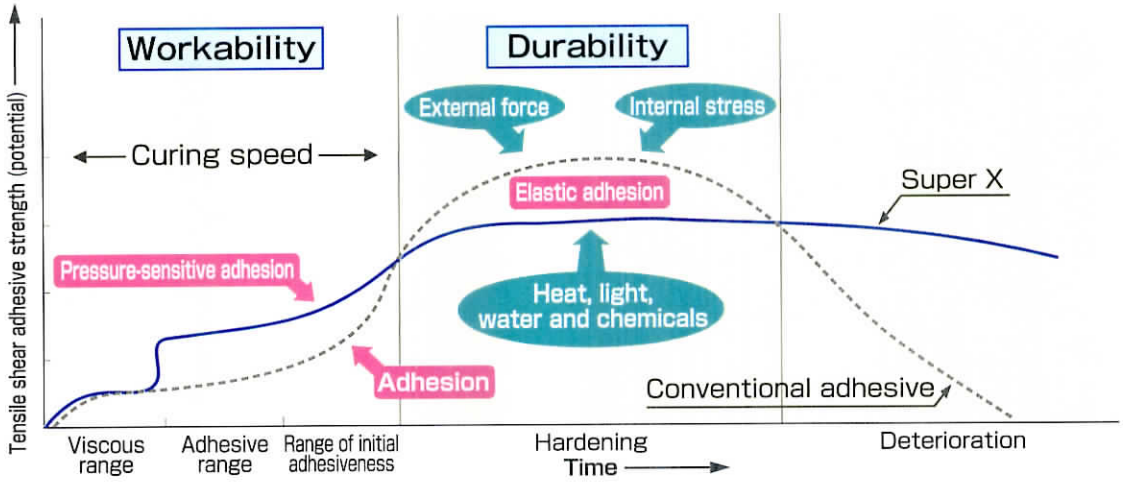
1 Pressure-sensitive adhesion
Curing reaction is caused by moisture absorbed from the air. Pressure-sensitive range is reached in this curing process about 10 min. after application. If adherends are put together during this time, they bind instantaneously as in the case of rubber contact adhesive, eliminating the need for temporary fixation.

2 One-part solventless agent providing quick curing at normal temperature
Easy-to-use, safe, and clean adhesive featuring one-part solventless agent capable of quick curing at normal temperature is provided.

3 Adhesive property over an extensive range
Super-X products allow for adhesion of various types of plastics, rubbers and ceramics over an extensive range, and also over different types of metals. These products provide excellent adhesion over a very extensive range of materials, eliminating the need for selecting a particular adhesive for each type of material, as in the case of conventional agents.

4 Durability
The Super-X as elastic adhesives do not peel off. Once materials are adhered, the Super-X provides durability in the range from low temperature (-60℃) to high temperature (120℃). Because of the rubber state of the hard film, the Super-X sufficiently follows expansion, shrinkage and other changes of adherents.

[Super-X conceptual diagram]



Application

- Adhesion required to have initial adhesive strength
- Adhesion of different types of materials having different thermal expansion coefficients
- Adhesion required to have durability due to repeated heating, cooling and vibration
- Siloxane-free: not including low molecular weight cyclosiloxane (D3 to D10 Cyclosiloxane compound)

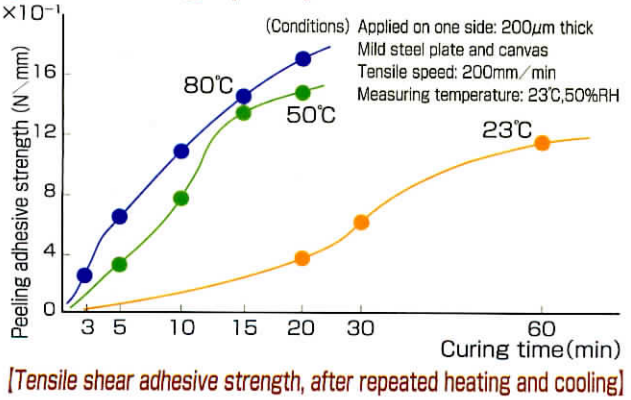
[Adhesive strength for various types of adherends]

Classification	Adherend	Tensile shear adhesive strength after 7-day curing (N/mm²)	
		Open time, 3 min.	Open time, 25 min.
Metal	Steel plate (SPCC, SPCD)	3.92	3.92
	Aluminum (*1)	4.21	4.12
	Stainless steel	4.21	3.92
	Copper	4.51	4.21
Plastics	Polycarbonate	4.31	3.23
	Bakelite	4.21	4.02
	ABS	2.45	1.96
	Unplasticized polyvinyl chloride	3.92	3.14
	Styrene	2.74	2.25
	Acryl	2.94	2.16
	6-nylon	2.84	2.65
	FRP(*2)	4.02	2.94
	Polyethylene foam (*3)	0.98	–
	Polypropylene(*4)	2.45	–
	PEEK(polyether ketone)	3.14	–
	PES(polyether sulfone)	3.82	–
	PSF(polysulfone)	3.53	–
	PET(polyethyleneterephthlate)	1.67	–
	PPS(polyphenylene sulfide)	3.72	–
	PPO(polyphenylene oxide)	4.41	–
	PAR(polyarylate)	4.12	–
	Oxybenzoyl polyester	2.25	–
Others	Slate	1.86	1.67
	Plywood	2.65	3.14

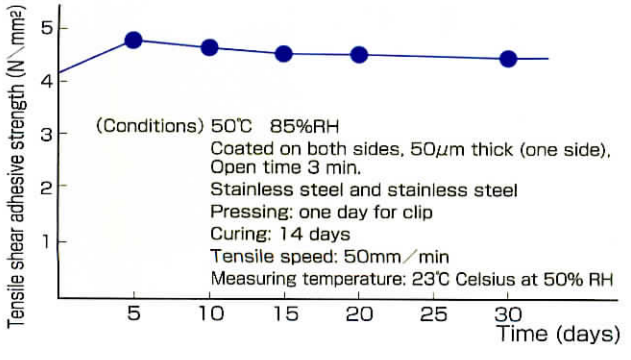
Conditions: Coated on both sides, 50μm thick (one side), tension speed between adherends: 50mm/min.

Note: *1 and *2: Surface preparation causes adhesive strength to become uneven; it must be confirmed in advance.
*3: Surface preparation by exposure to ultraviolet ray.
*4: Primer (Cemedine PP-7F) to be used.

[Initial curing speed]



[Tensile shear adhesive strength, after repeated heating and cooling]



[Adhesive strength for various types of rubbers]

Classification	Adherent	Peeling adhesive strength after 7-day curing (N/mm)
Rubbers	Natural rubber	0.88 Substrate failure
	NBR	2.36 Cohesion failure
	Silicone rubber	0.84 Substrate failure
	SBR	2.36 Substrate failure
	EPDM	0.80 Adhesion failure
	EPDM(*)	2.36 Cohesion failure
	Chloroprene rubber (CR) (*)	0.72 Adhesion failure
	CSM(chlorosulfuric oilyethylene)(*)	0.56 Adhesion failure

(*)···Degreasing by MEK after treatment by sand paper (#120)

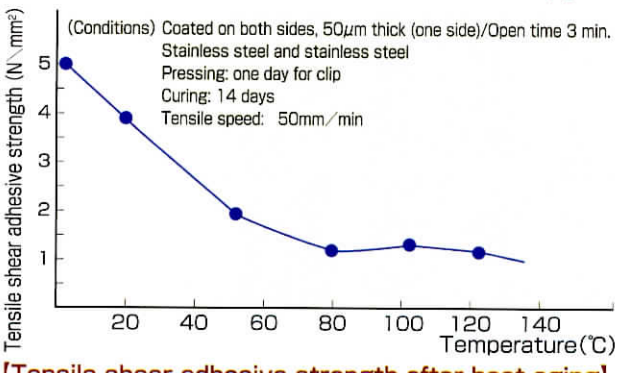
[Chemicals resistance]

Chemicals	Tensile shear strength after dipping in chemicals (N/mm²)
Unprepared	4.31
Water	3.63
Acetic acid (1% water solution)	3.72
Acetic acid (10% water solution)	1.96
Sulfuric acid (3% water solution)	4.41
Sulfuric acid (30% water solution)	4.02
Sodium hydroxide (1% water solution)	4.41
Sodium hydroxide (10% water solution)	4.51
Machine oil (Idemitsu: Mechanic Oil)	4.21
Salt (10% water solution)	4.31
Methylethylketone*	0.29
n-hexane *	0.78

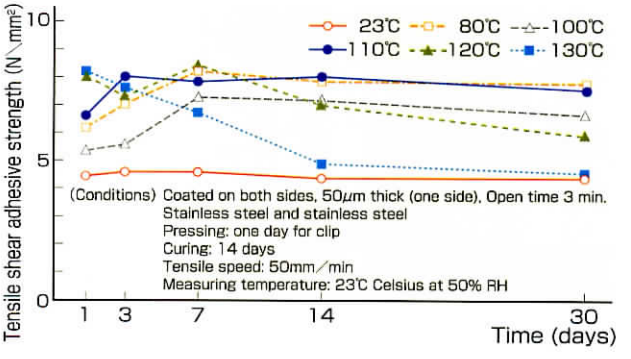
(Conditions) Coated on both sides, 50μm thick (one side), open time 3 min. Stainless steel and stainless steel, Pressing: one day for clip, Curing: 7 days, Number of days to be dipped in chemicals: 7, Tensile speed: 50mm/min.

*··· Deterioration of solvent is observed, but no problem with short-time contact, for example, in washing.

[Tensile shear strength on each temp]



[Tensile shear adhesive strength after heat aging]



7 Super-X Series

【List of Super X Adhesives】

Product name		Super X No.8008 RoHS適合品	Super X No.8008 black RoHS適合品	Super X No.8008 clear	Super X No.8008 L black RoHS適合品	Super X No.8008 LL black RoHS適合品
Base		Special polymer containing silyl group	Special polymer containing silyl group	Special polymer containing silyl group	Special polymer containing silyl group	Special polymer containing silyl group
External appearance		White paste	Black paste	Light yellow translucent paste	Black paste	Black paste
Viscosity (Pa·s／23℃)		90	90	65	24	14
Specific gravity (g／cm^3)		1.26	1.26	1.07	1.24	1.21
Tack free time		11	11	8	11	11
Tensile shear adhesive strength (N／mm^2)		3.7	3.7	3.4	3.2	2.9
T type peeling adhesive strength (N／mm)		2.5	2.5	1.7	2.4	1.8
Curing properties	Hardness (Shore A)	48	48	49	39	34
	Glass transfer point (℃)	−63	−63	−64	−68	−61
	Breaking strength (N／mm^2)	1.8	1.8	1.6	0.9	0.7
	Breaking extension (%)	220	220	150	300	275
	Linear expansion coefficient	2.1×10^{-4}	2.1×10^{-4}	1.8×10^{-4}	2.4×10^{-4}	3.6×10^{-4}
Electric Character-istics	Volume resistivity (Ω·cm)	1.1×10^{12}	4.7×10^{11}	1.3×10^{12}	1.2×10^{12}	1.0×10^{12}
	Dielectric constant (100Hz)	6.15	7.07	3.89	6.99	6.56
	Dielectric loss tangent (100Hz)	0.22	0.34	0.11	0.24	0.25
VOC grade		JAIA F☆☆☆☆ 4VOC基準適合	JAIA F☆☆☆☆ 4VOC基準適合	JAIA F☆☆☆☆ 4VOC基準適合	JAIA F☆☆☆☆ 4VOC基準適合	JAIA F☆☆☆☆ 4VOC基準適合
Capacity standards		170g·333ml	170g·333ml	333ml※	170g·333ml	333ml

*The specification of tube product is for 135ml. Please contact Customer Service for details.
*VOC : VOLATILE ORGANIC COMPOUND.

Adhesive for electrical components SX720 (W, WH, B, and BH)

Features

1. Nonflammable product (UL94V-O listed). (file No.E178790)
2. One-part elastic adhesive capable of curing at normal temperature and humidity.
3. Quick initial adhesion, high tack power for various types of materials, and excellent durability.
4. Safe and global environment-friendly adhesive.
   - Employs no halogen-based, antimony oxide, or phosphorus-based materials.
   - Designated 14 chemical substances under the guideline of Ministry of Health, Labour and Welfare is not used.
5. Free of siloxane
   - Contains no low molecular siloxane component.

   *D3 to D10 cyclosiloxane compound

Application

- Fixing of circuit boards such as condenser and coil
- Sealing of power supply and transformer for insulation
- Sealing of electronic components for waterproofing

[List of SX720 Adhesives]

Product name		SX720W RoHS適合品	SX720WH RoHS適合品	SX720B RoHS適合品	SX720BH RoHS適合品
Base		Special polymer containing silyl group	Special polymer containing silyl group	Special polymer containing silyl group	Special polymer containing silyl group
External appearance		White paste	White paste	Black paste	Black paste
Viscosity (Pa·s/23℃)		45	85	45	85
Specific gravity (g/cm^3)		1.56	1.57	1.56	1.57
Tack free time		10	8	10	8
Tensile shear adhesive strength (N/mm^2)		3.4	3.2	3.4	3.2
T type peeling adhesive strength (N/mm)		1.0	1.0	1.0	1.0
Curing properties	Hardness (Shore A)	78	81	78	82
	Glass transfer point (℃)	−64	−69	−63	−69
	Breaking strength (N/mm^2)	3.4	3.2	3.4	3.2
	Breaking extension (%)	100	50	100	50
Electric Character-istics	Linear expansion coefficient	1.1×10^{-4}	7.3×10^{-5}	8.7×10^{-5}	8.1×10^{-5}
	Volume resistivity (Ω·cm)	2.1×10^{12}	1.7×10^{12}	2.3×10^{12}	1.4×10^{12}
	Dielectric constant (100Hz)	6.2	5.9	6.6	6.2
	Dielectric loss tangent (100Hz)	0.23	0.31	0.27	0.28
Thermal conductivity (W/m·k)		0.91	0.92	1.09	1.00
Capacity standards		200g·333ml	200g·333ml	200g·333ml	200g·333ml