

€ STRAIN GAUGE ADHESIVES

ADHESIVES

TML adhesives ensure a reliable and permanent connection between the strain gauge and the test object and ensure that the component expansion is transferred to the strain gauge's measuring grid without errors. The behavior of the adhesives is optimally matched to the specified DMS series, the specified test object and the specified environmental conditions.

ATTENTION! The adhesives we offer are intended exclusively for use with the strain gauges that we have specified for this purpose. These are not suitable for use with other sensors or for other applications. All adhesives that contain hazardous substances are supplied with a safety data sheet in the German version and, according to the applicable EU directives and laws, may only be used in the Federal Republic of Germany (scope of

the safety data sheet) by appropriately trained specialists. To avoid excessive environmental pollution from the hazardous substances they contain, we only offer these items for the purpose specified in the safety data sheet - installation of strain gauges - and in the small quantities that are customary for this. We reserve the right to refuse orders that exceed these quantities. You can determine the approximate adhesive requirement depending on the size of the strain gauge carrier and the number of strain gauges to be applied here.

Product	Type	Contents	Component	Applicable specimen	Operating temperature	Curing temperature and time	Shelf life
	CN Single component Room-temperature-curing	Single 2g x 5	Cyanoacrylate	Metal, Plastics, Composite	-196~+120°C	Room temperature 20sec.~1 min. (thumb pressure)	6 months

Applications

Single component adhesive for strain gauges. The time required to bond the gauge is extremely short and handling is very easy. The thin bonding layer allows adhesion to plastic objects as well as metal. Measurement of large strain (post-yield measurement) is possible until the next day of bonding of the strain gauge.

	CN-E Single component Room-temperature-curing	Single 2g x 5	Cyanoacrylate	Concrete, Mortar, Wood	-30~+120°C	Room temperature 40sec.~2 min. (thumb pressure)	6 months
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Applications

Single component adhesive featuring high viscosity for bonding strain gauges to porous materials such as concrete and mortar.



Product	Type	Contents	Component	Applicable specimen	Operating temperature	Curing temperature and time	Shelf life
	CN-R Single component Room-temperature-curing	Single 2g x 5	Cyano-acrylate	Metal, Plastics, Composite	-30~+120°C	Room temperature 10~30sec (thumb pressure)	3 months

Applications

Single component adhesive for accelerating cures in lower ambient temperature, or lower relative humidity.

	CN-Y Single component Room-temperature-curing	Single 2g x 5	Cyano-acrylate	Metal, Plastics, Composite	-30~+80°C	Room temperature 60 sec~2 min. (thumb pressure)	6 months
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Applications

Single component adhesive designed exclusively for use on post-yield strain gauge. Offers minimum degradation in bonding performance (peel strength) due to aging. Suitable when a large strain measurement is made after a few days or more of bonding the strain gauge. Measurement of large strain (post-yield measurement) is possible even after one year of bonding.

	P-2 Two-component Room-temperature-curing Mixing ratio: 2~6%	A: 25g * B: 3g *	Polyester	Metal	-30~+180°C	Room temperature Pressure 50~300 kPa 2~3 hrs	6 months
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Applications

Two-component room-temperature-curing polyester adhesive for bonding PF, P and F series strain gauges. Put the necessary quantity of drug A in the supplied mixing vessel, then add drug B by drops to total 2~6% in weight of drug A. Use the mixed adhesive within 10~20 minutes.

	RP-2 Two-component Room-temperature-curing Mixing ratio: 2~4%	A: 25g * B: 3g *	Polyester	Concrete, Mortar	-30~+180°C	Room temperature Pressure 50~300 kPa 2~3 hrs	3 months
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Applications

Two-component room-temperature-curing polyester adhesive for bonding PF and P series strain gauges. The mixing procedure is the same as above for P-2 adhesive. Put the necessary quantity of drug A in the supplied mixing vessel, then add drug B by drops to total 2~4% by weight of drug A. Use the mixed adhesive within 10~20 minutes.



Product	Type	Contents	Component	Applicable specimen	Operating temperature	Curing temperature and time	Shelf life
	PS Two-component Room-temperature-curing Mixing ratio: 2~4%	A: 25g * B: 3g *	Polyester	Concrete, Mortar, Wood	-30~+100°C	Room temperature 2~3 hrs	3 months

Applications

Two-component room-temperature-curing polyester adhesive. Use as a surface precoating agent for bonding P and PF series gauges to concrete and also as an adhesive for WFLM series gauges. The special filler contained exhibits alkali resistance and effectively shuts off moisture and gas from inside of the concrete. Its high viscosity enables use on vertical walls or ceilings.

	NP-50B Two-component Room-temperature-curing Mixing ratio: 3~4%	A: 25g * B: 3g *	Polyester	Metal, Composite	-30~+300°C	Room temperature Pressure 50~300 kPa 16 hrs	6 months
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Applications

Two-component room-temperature-curing polyester adhesive for bonding QF, ZF and BF series strain gauges. Put the necessary quantity of drug A into the supplied mixing vessel then add drug B by drops to total 3~4% by weight of drug A. Use the mixed adhesive within 5~20 minutes.

	C-1 Single component Heat-curing	Single 25g*	Phenol	Metal	-269~+200°C	Pre-curing at 130°C 1 hr, pressure 200~300 kPa. Post-curing at 200°C 1 hr without pressure	3 months
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Applications

Single-component heat-curing type adhesive. For use on strain gauges that are suited to heat curing. Enables reliable measurement for long periods and in high temperature up to 200°C.

	EA-2A Two-component Room-temperature-curing Mixing ratio: 2:1	A: 25g * B: 15g *	Epoxy	Metal, Concrete, Composite	-269~+50°C	Pressure at 50~300 kPa. Room temperature 1 day, or at 50°C 2 hrs	3 months
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Applications

Two-component room-temperature-curing epoxy adhesive for bonding CF series strain gauges for use in temperature from cryogenic (-269°C) up to 50°C.



Product	Type	Contents	Component	Applicable specimen	Operating temperature	Curing temperature and time	Shelf life
	EB-2 Two-component Room-temperature-curing Mixing ratio: 10: 3	A: 10g x3 B: 3g x3	Epoxy	Metal, Composite	-60~+200°C	Room temperature 1 day Pressure 50~200 kPa.	3 months

Applications

Two-component room-temperature-curing epoxy adhesive for bonding strain gauges for use in temperature from -60 to +200°C. Enables stable measurement for a long period of time.

	A-2 Two-component Heat-curing Mixing ratio: 10: 1	A: 25g * B: 5g *	Epoxy	Bolt	-30~+100°C	Room temperature 12 hrs and 140°C 3 hrs	3 months
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Applications

Two-component heat-curing epoxy adhesive for bonding BTM strain gauges.

NB: Shelf life

Effective storing duration on condition that the adhesive is properly kept in a cool, dry and dark place such as a refrigerator (+5~+10°C, do not store in a freezer).

Thumb pressure 100~300kPa

SDS: Safety Data Sheet

TML supplies SDS for all its strain gauge adhesives and coatings. Contact your TML supplier for more information.

For two-component adhesives, use the supplied mixing vessels.

Mixing vessels: Polyethylene make 75mm-diameter, 10mm depth

* : These contents are for outside Japan.