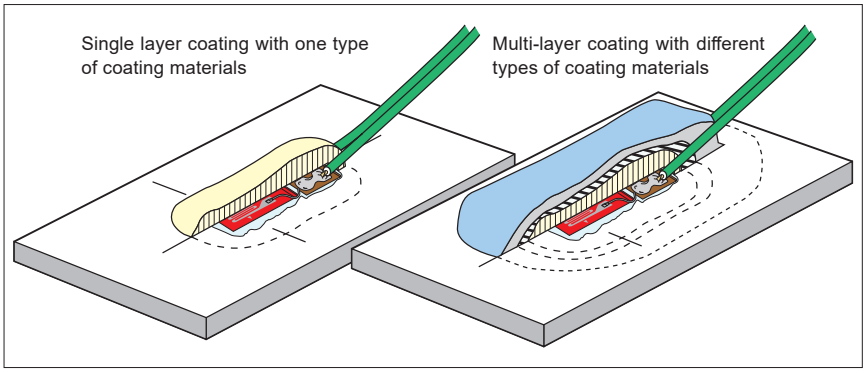
Coating Materials

The type of coating required and the application method differ depending on the environment in which the strain gauge is used. In general, if one type of coating is not sufficient, multiple coatings can be combined to protect the strain gauges. At TML, the coating applied directly to the surface of the strain gauge is referred to as the first coating with subsequent coating layers referred to sequentially as the second coating, third coating, etc. Multi-layer coatings offer better strain gauge protection.



Type	Materials	Color	Contents	Operating temperature	Curing conditions	
W-1	Microcrystalline wax solid	Light yellow	500g	0~+50°C	Hot melting +100~+120°C Hardening in room temperature	
N-1	Chloroprene rubber based solvent thinned	Light yellow	25g *	–30~+80°C	Air-drying A half day in room temperature	
K-1	Special rubber based solvent thinned	White	25g *	–269~+60°C	Air-drying A half day in room temperature	
UE-1	Special rubber based solvent thinned	Brown	25g *	–40~+150°C	Air-drying A half day in room temperature	
SB tape	Butyl rubber	White	10mm(wide)x3mm (thick) 5m long/roll	–30~+80°C	Pressure sensitive	
VM tape	Butyl rubber	Black	38mm(wide) x1mm (thick) 6m long/roll	–20~+80°C	Pressure sensitive	
KE-348W	Silicone rubber	White	100g	–50~+200°C	Air-drying A half day in room temperature	
KE-348T		Transparent	100g			
TSE3976-B	Silicone rubber	Black	100g	–50~+250°C	Air-drying One day in room temperature	

SDS : Safety Data Sheet

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

Coatings in special substances

For use in special substances such as acids, alkalis and alcohols, contact TML or your local representatives.

* : These contents are for outside Japan.

	Purpose	Applications
	Moisture- and water-proofing coating for laboratory and field requirements where mechanical protection is not needed, or used as the first coating for multi-layer coating.	The solid W-1 is put into a heating appratus (temperature-regulated oil bath is recommended) and completely melted at 100 to 120°C. The hot melted W-1 is applied over the area to be coated with a brush. The W-1 cools down and turns into solid as soon as applied. It is usually applied repeatedly till the cooled W-1 forms an adequate thickness.
	Moisture- and water-proofing coating for laboratory and less severe field requirements where mechanical protection is not needed.	A layer of N-1 is applied directly from the tube or with a brush over the area to be coated. Curing time is about half a day in room temperature, but it depends on conditions such as the specimen material, temperature, and so on. If the coating layer is too thin, apply another layer to make an adequate thickness.
	Moisture-proofing coating from cryogenic to room temperature for laboratory requirements. Does not provide a high degree of mechanical protection.	A layer of K-1 is applied directly from the tube or with a brush over the area to be coated. Curing time is about half a day in room temperature, but it depends on conditions such as the specimen material, temperature, and so on. If the coating layer is too thin, apply another layer to make an adequate thickness.
	Oil-resistant coating for laboratory and field requirements. Does not provide a high degree of mechanical protection.	A layer of UE-1 is applied directly from the tube or with a brush over the area to be coated. Curing time is about half a day in room temperature, but it depends on conditions such as the specimen material, temperature, and so on. If the coating layer is too thin, apply another layer to make an adequate thickness.
	Moisture- and water-proofing coating for laboratory and field requirements where mechanical protection is not needed, or used as the first coating for multi-layer coating. Offers excellent moisture and water resistant characteristics and is very convenient for use.	The SB tape is cut in an appropriate length and applied over the area to be coated. The application is completed by pressing down the SB tape firmly with a spatula or your finger covered with the separating paper. It is also applied under the leadwire prior to the overcoating.
	Used as the second coating or later for multi-layer coating. Offers excellent moisture and water resistant characteristics. Very convenient for use.	The VM tape is cut in an appropriate length and applied over the area to be coated with finger pressure. The VM tape must not be applied directly over a strain gauge as a first coating.
	Suitable for laboratory requirements with high temperature conditions where high degree of mechanical protection is not needed.	The KE-348 is applied directly from the tube over the area to be coated. Curing time is about half a day in room temperature, but it depends on conditions such as temperature, humidity and so on.
	Suitable for laboratory requirements with high temperature conditions where high degree of mechanical protection is not needed.	The TSE3976-B is applied directly from the tube over the area to be coated. Curing time is about one day in room temperature, but it depends on conditions such as temperature, humidity and so on.

Important point

The application of coating material has an effect on test results when repeated strain is applied in the test such as a fatigue test (strain level of $\pm 1500 \times 10^{-6}$).
Give careful consideration before the test, and apply the coating carefully. Please contact us for further information if necessary.