

Teroson MS 930NA

October 2016

PRODUCT DESCRIPTION

Teroson MS 930NA provides the following product characteristics:

Technology	MS [®] - Polymer		
Chemical Type	Modified silane polymer		
Appearance (uncured)	Black, White and Gray		
Odor	Odorless		
Cure	Atmospheric moisture		
Cured Thermal Stability	≤80°C (≤176°F)		
Application	Sealing or Bonding		
Specific Benefit	Broad adhesion		
	UV stability		
	Easy application		
	Non-corrosive		

Teroson MS 930NA is a low modulus, flexible adhesive used for elastic sealing on various substrates. It is a one component adhesive/sealant based on a modified silane polymer, which cures by reaction with moisture to an elastomeric thermoset product. The skin formation and curing times are dependent on humidity, temperature, and joint depth. By increasing the exposure to moisture these times can be reduced. Teroson MS 930NA is sag-resistant leading to high initial tack. It is non-corrosive and free of solvents, isocyanates, silicones, PVC, and is odorless. It demonstrates good adhesion without primer to a wide variety of substrates and is compatible with suitable The adhesive/sealant also paint systems. demonstrates good UV resistance and can therefore be used for interior and exterior applications. The cure speed can be accelerated by using MS 9371B at 10:1 mixing ratio.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C 1.45 to 1.57^{LMS}

Flash Point - See SDS

Viscosity, Cone & Plate ISO 3219, Pa·s:

Cone CP25-2 @ shear rate 10 s⁻¹ 125 to 260^{LMS} Cone CP25-2 @ shear rate 0.5 s⁻¹ 1.400 to 3.100

Extrusion Rate, g/min, ASTM C1183:

1/8" Orifice @ 90 psi 125 to 500^{LMS}

TYPICAL CURING PERFORMANCE

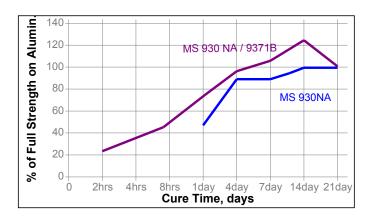
Skin Over Time

Skin over time is the time the surface of the adhesive forms a skin upon exposure to atmospheric moisture at 25 \pm 2 °C, 50 \pm 5% RH.

Skin Over Time, minutes 15 to 65^{LMS}

Cure Speed vs. Time

The graph below shows the shear strength developed over time at 22 $^{\circ}$ C / 50 $^{\circ}$ RH on aluminum and tested according to ISO 4587.



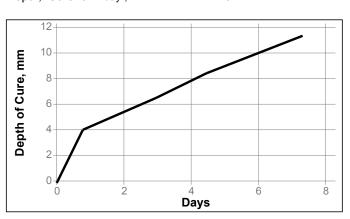
Depth of Cure

The depth of cure depends on temperature and humidity. Depth of cure was determined by filling a 50 mm deep cup and removing the cured film of material. The cured section of product is measured to determine depth of cure.

The graph below shows the increase in depth of cure with time at $@22 \degree C/40$ to 60% RH

>2.5LMS

Depth, Cure for 1 day, mm





TYPICAL CURING PERFORMANCE WHEN MIXED WITH ACCELERATOR

 Gel Time @ 22 °C, minutes
 40 to 45

 Open Time @ 22 °C, minutes
 50 to 60

 Fixture time, 3kg weight, minutes
 75 to 90

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 7 days @ 22 °C / 50±5 % RH

Physical Properties:

 Shore Hardness, ISO 868, Durometer A
 25 to 40^{LMS}

 Elongation, at break, ISO 527-3, %
 380

 Tensile Strength, ISO 527-3
 N/mm²
 0.8 to 1.4^{LMS}

 (psi)
 (116 to 203^{LMS})

Electrical Properties:

Surface Resistivity, IEC 60093, ohms 1.4×10¹³ Volume Resistivity, IEC 60093, ohm-cm 2.6×10¹¹

TYPICAL PERFORMANCE OF CURED MATERIAL Adhesive Properties

Cured for 21 days @ 22 °C Lap Shear Strength, ISO 4587:

Aluminum (Alclad) N/mm² 1.0 (psi) (145)Aluminum N/mm² 8.0 (116)(isg) Mild steel N/mm² 1.0 (psi) (145)Stainless steel N/mm² 1 1 (160)(psi) Galvanized Steel N/mm² 1.0 (psi) (145)Glass N/mm² 0.9 (psi) (131)Polycarbonate N/mm² 0.5 (73)(psi) **PVC** N/mm² 1.0

"T" Peel Strength, ISO 11339:

Aluminum N/mm 4 (lb/in) (23)

(psi)

(145)

Cured for 1 day @ 22 °C, (when mixed with accelerator)

Physical Properties:

Shore Hardness, ISO 868, Durometer A
Elongation, at break, ISO 527-3, %
Tensile Strength, ISO 527-3
N/mm² 0.7
(psi) (100)

Cured for 7 days @ 22 °C, (when mixed with accelerator)

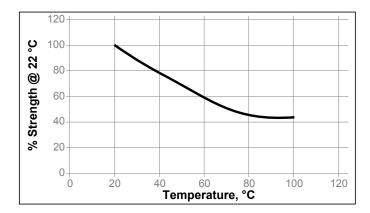
Physical Properties:

Shore Hardness, ISO 868, Durometer A
Elongation, at break, ISO 527-3, %
Tensile Strength, ISO 527-3
N/mm²
0.9
(psi) (130)

TYPICAL ENVIRONMENTAL RESISTANCE

Hot Strength

Tested at temperature
Cured for 21 days @ 22 °C / 45 to 55% RH
Lap Shear Strength, ISO 4587:
Mild Steel, 0.8 mm (0.03") gap



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C

		% of initial strength		
Environment	°C	500 h	1000 h	
Motor oil	40	140	135	
Gasoline	22	155	180	
Isopropanol	22	130	200	
Salt fog, 95% RH	49	115	110	

Heat Aging

Cured for 7 days @ 22 °C / 40 to 60% RH: Aged @ 50 °C for 500 hours: Change in Tensile Strength, % 18 Change in Elongation, % -14 Aged @ 50 °C for 1,000 hours: Change in Tensile Strength, % -9 Change in Elongation, % -38 Aged @ 80 °C for 500 hours: Change in Tensile Strength, % 5 Change in Elongation, % 12 Aged @ 80 °C for 1,000 hours: Change in Tensile Strength, % 0 Change in Elongation, % -1

GENERAL INFORMATION

When bonding and sealing PMMA, e.g. Plexiglas® and polycarbonate, e.g. Makrolon® or Lexan®, under tension, stress cracking may occur.

In such cases the product should not be utilized.

There is no adhesion to polyethylene, polypropylene and PTFE (e.g. Teflon®).

Substrates not mentioned above should be subject to trials.

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use:

- For best performance bond surfaces should be clean and free from grease.
- Moisture curing begins immediately after the product is exposed to the atmosphere, therefore parts to be assembled should be mated within a few minutes after the product is dispensed.
- The bond should be allowed to cure (e.g. seven days), before subjecting to heavy service loads.
- Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification^{LMS}

LMS dated February 22, 2006. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

(°C x 1.8) + 32 = °F kV/mm x 25.4 = V/mil mm / 25.4 = inches μ m / 25.4 = mil N x 0.225 = lb N/mm x 5.71 = lb/in N/mm² x 145 = psi MPa x 145 = psi N·m x 8.851 = lb·in N·m x 0.738 = lb·ft N·mm x 0.142 = oz·in mPa·s = cP

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage: [Except as otherwise noted] All trademarks in this document are trademarks and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.