Technical Data Sheet

LOCTITE® EA 9490™

Known as NORTH AMERICA - Fixmaster Underwater Repair Epoxy
May 2017

PRODUCT DESCRIPTION

LOCTITE® EA 9490™ provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (uncured)	Green/White[LMS]
Appearance (form)	Stick
Components	Two components - requires mixing
Cure	Room temperature cure
Application	North America - Bonding
Specific Benefit	• Cures under water and will adhere to most damp surfaces • Bonds virtually any material • Repair, fill and seal holes, cracks and worn surfaces • May be drilled, tapped, sanded or machined and painted after cure

LOCTITE® EA 9490™ is a two-component, room temperature curing epoxy adhesive used for high strength, permanent bonding of metals, ceramics, concrete, wood and most plastics. This product can withstand temperatures of up to 150°C (300F) . LOCTITE® EA 9490™ works on both wet and dry surfaces and sets up and cures underwater. This putty like material is ideal for plumbing, irrigation and marine applications because it is unaffected by chlorinated or salt water. Typical applications include plugging and filling cracks, leaks and holes in pipes, fitting tanks, valves and pumps, especially in plumbing irrigation and marine applications where applications are underwater.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Flash Point - See SDS

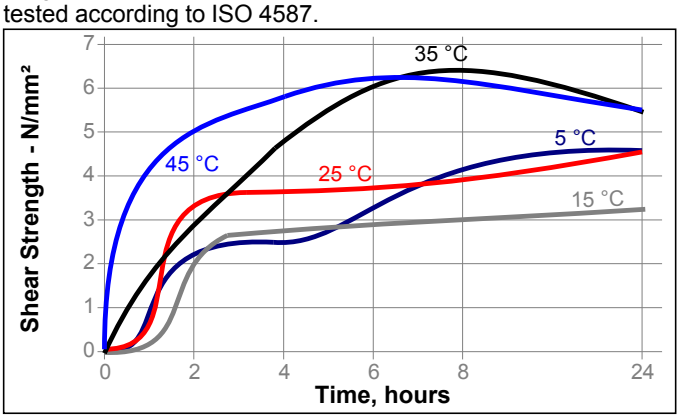
TYPICAL CURING PERFORMANCE

Curing Properties

Gel Time @ 25 °C, minutes	10 to 15
Working life, minutes	20 to 30[LMS]

Cure Speed vs. Temperature

The graph below shows the shear strength developed with time on grit blasted steel lap shears at different temperatures and tested according to ISO 4587.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Shore Hardness, ISO 868, Shore D		>70[LMS]
Abrasion Resistance, ASTM D4060: mg 1 Kg load, CS-10 wheels, Weight of Material Lost		245
Coefficient of Thermal Conductivity ASTM F 433, W/(m·K)		0.797
Glass Transition Temperature ISO 11359-2, °C		4
Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:		
Below Tg		29×10^{-06}
Above Tg		120×10^{-06}
Compressive Strength, ISO 604	N/mm² (psi)	29 (4,240)
Compressive Modulus, ISO 604	N/mm² (psi)	760 (110,500)
Tensile Strength, ISO 527-2	N/mm² (psi)	8.5 (1,225)
Tensile Modulus, ISO 527-2	N/mm² (psi)	680 (98,700)
Elongation at break, %	4.6	
Flexural strength , ASTM D790	N/mm² (psi)	22 (3,210)
Flexural modulus , ASTM D790	N/mm² (psi)	1,525 (221,100)

Electrical Properties:

Volume Resistivity, IEC 60093, ohm-cm	9.1×10^{12}
Surface Resistivity, IEC 60093, ohms	23.2×10^{12}

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength, ISO 4587:

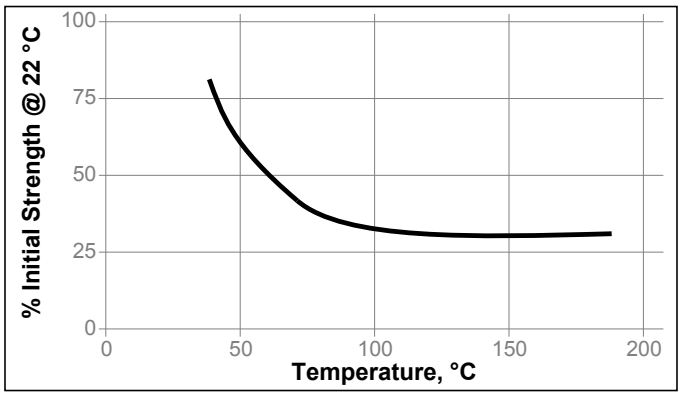
Grit Blasted Mild Steel (GBMS)	N/mm²	≥3.45[LMS]
	(psi)	(≥500)

TYPICAL ENVIRONMENTAL RESISTANCE

Lap Shear Strength, ISO 4587:
Grit Blasted Mild Steel (GBMS)

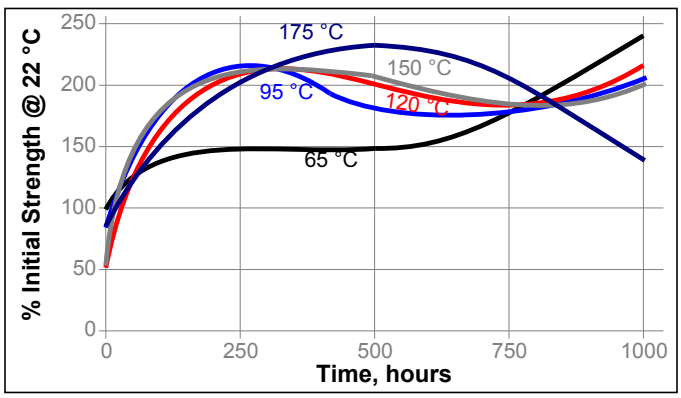
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested @ 22 °C



GENERAL INFORMATION

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:

1. **CAUTION**: Do not apply to surfaces above 66 °C (150F).

2. Apply to clean and dry surface for best strength. LOCTITE® EA 9490™ can be applied to wet surfaces, but bond strength will be lower.

3. For maximum adhesion, clean and sand surface.

4. Use gloves; do not mix with bare hands.

5. Cut required amount of material from stick. Remove clear plastic wrapper from cut section.

6. To mix, first twist the material to produce a spiral pattern of resin and hardener. Next, knead material for 2-3 minutes or until a uniform color is achieved.

7. Firmly apply for patch, repair or bonding. When applying underwater, form material into a ball and push firmly onto surface to displace as much water as possible between adhesive and surface.

8. For a smooth finish, wet a cloth or gloved finger with water and smooth.

Technical Tips for Working With Epoxies

Working time and cure depends on temperature and mass:

- The higher the temperature, the faster the cure.
- The larger the mass of material, the faster the cure.

To speed the cure of epoxies at low temperatures:

- Store epoxy at room temperature.
- Pre-heat repair surface until warm to the touch.

To slow the cure of epoxies at high temperatures:

- Mix epoxy in small masses to prevent rapid curing.
- Cool resin/hardener component(s).

Loctite Material Specification[LMS]

LMS dated January 29, 2002. 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. Material removed from containers may be contaminated during use. Do not return liquid to original container. 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**. Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those recommended. 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
µm / 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

Reference 0.1

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.
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