



Hysol[®] 3471[™]

May 2006

PRODUCT DESCRIPTION

Hysol[®] 3471[™] provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (uncured)	Gray, putty
Components	Two part - Resin & Hardener
Mix Ratio, by weight - Resin : Hardener	1 : 1
Mix Ratio, by volume - Resin : Hardener	1 : 1
Cure	Room temperature cure after mixing
Application	Industrial maintenance
Maximum Gap	1.0 mm
Specific Benefit	<ul style="list-style-type: none"> • Low shrinkage properties • Does not rust

Hysol[®] 3471[™] is a steel filled, two component epoxy adhesive that is ideal for the repair and recovery of worn and damaged machinery. Typical applications include repairing worn parts such as shafts, housings, keyways and flanges as well as broken or damaged parts such as castings, pipes or fabrications. This product can be used for jobs as varied as filling cavities, levelling machinery, repairing cast-steel plates, making core moulds, applying a sacrificial coating or sealing leaking pipes. This product is typically used in applications with an operating range of -20 °C to +120 °C.

TYPICAL CURING PERFORMANCE

Cure Speed

Hysol[®] 3471[™] develops functional strength at 20 °C after 12 hours. At 10 °C, 24 hours is required:

Open Time

Open Time (mixed), minutes:	
@ 10 °C	180
@ 20 °C	60
@ 30 °C	40

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 7 days @ 22 °C

Physical Properties:

Shore Hardness, ISO 868, Durometer D	85
Linear Shrinkage, ASTM D792, %	0.1
Tensile Strength, ISO 527-2	N/mm ² 60 (psi) (8,700)
Tensile Modulus, ISO 604	N/mm ² 5,000 (psi) (725,000)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 7 days @ 22 °C

Lap Shear Strength, ISO 4587:

Steel	N/mm ² 20 (psi) (2,900)
Aluminum	N/mm ² 20 (psi) (2,900)

Compressive Shear Strength, ISO 10123:

Steel pins and collars	N/mm ² 70 (psi) (10,000)
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TYPICAL ENVIRONMENTAL RESISTANCE

Solvent Resistance

Like most epoxy resin based materials, product has excellent resistance to many liquids and solvents. The following information may be used as a guide:

Type of Liquid/Solvent	Product Performance
Water, Dilute acids, Salt solution	Excellent. Some surface discoloration may occur.
10% Caustic Soda	Excellent.
Gasoline, Hydrocarbon fuels and lubricants	Excellent.
Chlorinated solvents	Good resistance but not recommended for continuous long term contact.
Methanol, Acetone, MEK	Poor resistance.

Note: This information refers to fully cured material. Incomplete cure or inadequate mixing will adversely affect solvent resistance.

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 Material Safety Data Sheet, (MSDS).

Directions for use

1. For best performance surfaces for bonding should be clean, dry and free of grease. For high strength structural bonds, special surface treatments can increase the bond strength and durability.
2. Stir each component of resin and hardener separately, then measure out equal amounts of each.
3. Stir thoroughly together for up to two minutes until an even mix is achieved.
4. Apply the product to the working area with the spatula provided.
5. For larger breaks or fractures, the product can be applied to glass fiber matting or a similar support and used as a patch or bandage.

6. If used as a molding compound, use a wax, grease or silicone release agent to prevent adhesion to any surface. Functional strength is normally achieved after 10 to 12 hours, with full cure within 72 hours. These times are reduced with high ambient temperatures.

NOTE: Due to heat generation during the curing process, larger quantities tend to cure more rapidly.

7. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
8. Keep the assembled parts from moving during cure. The joint should be allowed to develop full strength before subjecting to any service loads.
9. After use and before adhesive hardens, mixing and application equipment should be cleaned with hot soapy water.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note

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Reference 1.0