

**PROVISIONAL TDS**

## 2K500

### Two-Component Polyurethane Coating

2K500 is a tough, flexible, high performance two-component, VOC-free conformal coating, designed specifically for selective coating processes. 2K500 is characterised by greater coating thickness and enhanced edge coverage and shows improved adhesion, hardness and scratch resistance.

- Conformal coating with excellent clarity and resistance to discolouration
- Excellent resistance to humidity, condensation and immersion in water
- Coating with improved adhesion and hardness; low stress during automotive thermal shock cycles
- High coating thickness achievable; enhanced edge coverage

**Approvals**

**RoHS-2 Compliant (2011/65/EU):**  
**REACH Compliant:**  
**IPC-CC-830:**  
**BMW GS95011-5:**

**Yes**  
**Yes**  
**Meets Requirements**  
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**Liquid Properties**

|                           |                      |
|---------------------------|----------------------|
| Appearance:               | Pale Coloured Liquid |
| Density @ 20°C:           | 1.05 g/ml (mixed)    |
| Flash Point:              | >100°C               |
| Solids Content:           | 100%                 |
| VOC Content:              | 0g/L                 |
| Mix Ratio:                | 1:1 by volume        |
| Viscosity (mixed) @ 25°C: | 1000-1500            |
| Useable Life @ 20°C:      | 40 Minutes           |
| Touch Dry Time at 20°C:   | 240 Minutes          |
| Recommended Drying Time:  | 10 Minutes @ 80°C    |

**Dry Film Coating**

|  |   |
|--|---|
| Colour:  | Clear/Colourless                                    |
| Recommended Coating Thickness:                 | 100-300µm   |
| Temperature Range:                             | -40 to +140°C                                       |
| Thermal Shock Range:                           | -65 to +125°C                                       |
| Thermal Shock (1000 cycles):                   | No cracking, blistering or delamination             |
| Softening Temperature                          | >125°C  |
| Shore Hardness:                                | A70-80  |
| Glass Transition Temperature (T <sub>g</sub> ) | -29°C (DMA)   |
| Elongation at Break (ASTM D638 IV)             | 150-200%  |
| Elastic Modulus                                | 420 MPa @ -40°C<br>172 MPa @ 25°C<br>16 KPa @ 125°C |

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All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification.

Electrolube cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.

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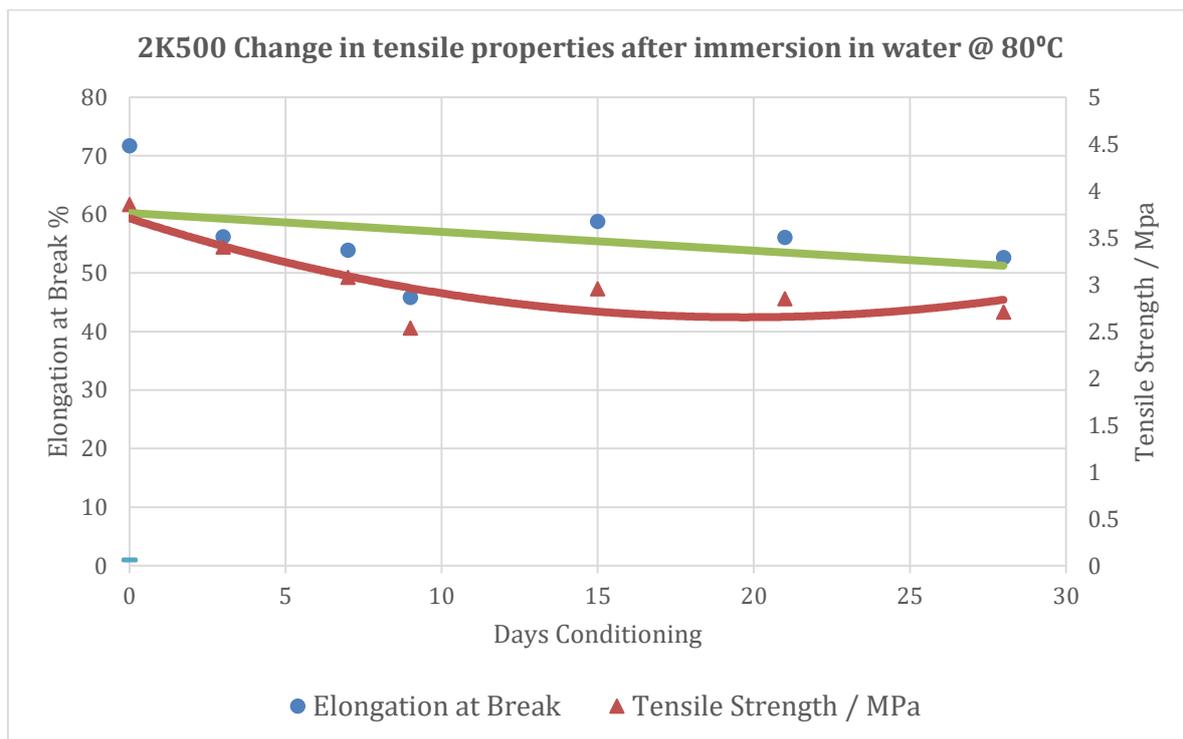
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 Certificate No. FM 32082

|                                   |                              |
|-----------------------------------|------------------------------|
| Tensile Strength                  | 4.5 MPa @ 25°C               |
| Dielectric Strength:              | 90 kV/mm                     |
| Dielectric Constant:              | 2.5                          |
| Surface Insulation Resistance:    | $1 \times 10^{15} \Omega$    |
| Comparative Tracking Index:       | > 600 Volts                  |
| Dissipation Factor @ 1MHz, 25°C:  | 0.01                         |
| Moisture Resistance (IPC-CC-830): | $1.63 \times 10^{10} \Omega$ |

**Additional Data**

2K500 shows outstanding resistance to immersion in water at 80°C maintaining its initial tensile strength and a large degree of its elongation at break or elasticity.



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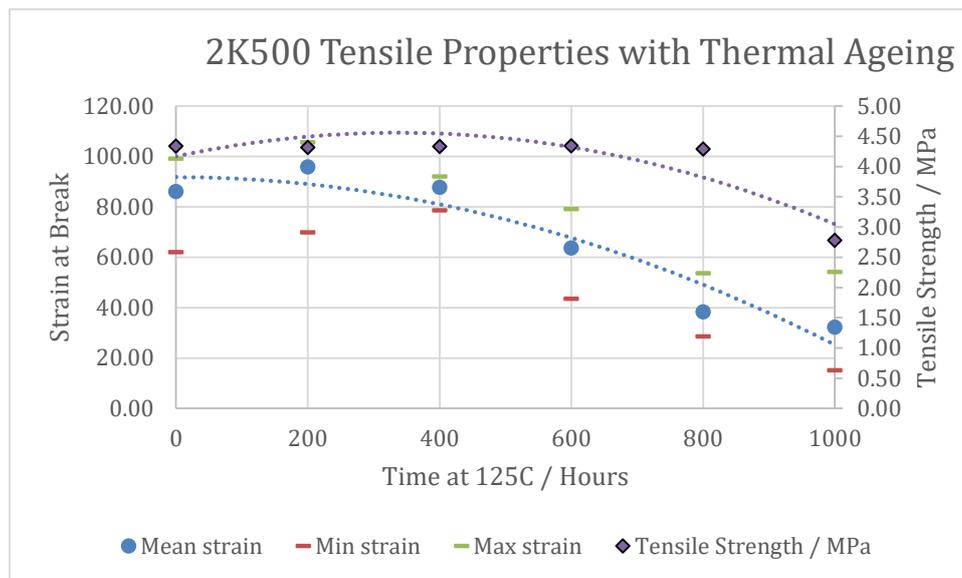
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2K500 shows excellent retention of elongation and minimised increase in tensile strength when aged at 130°C in air.



### Directions for Use

2K500 is intended to be applied by selective spray coating. It is recommended that the use of a high accuracy, volumetric metering system, such as progressive cavity pumps are used to control the mix ratio of the two components. It is recommended that a 10 turn static mixer is used to ensure complete mixing of the two components prior to reaching the dispense valve. The use of a heated recirculation system, or heated applicator block can result in reduced film builds and faster cycle times. 60°C is a typical set-point.

The material works best when a relatively high flow rate and low atomising air combination is used, but this will depend on the design of the assembly, required cycle times and other process considerations.

### Inspection

2K500 contains a UV trace, which allows inspection of the PCB after coating to ensure complete and even coverage; the stronger the reflected UV light, the thicker the coating layer is. UV light in the region of 375nm should be used for inspection.

Revision 0: Nov 2015