

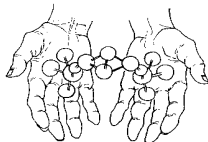
# ManuSpec Company, Inc.

\*MSBond\*MSCoat\*MSSeal\*

Phone (281) 351-9889

[www.manuspec.net](http://www.manuspec.net)

Fax (281) 351-9896



*“A World of Adhesive Solutions”*

## TECHNICAL DATA BULLETIN

### ManuSpec MS2110A / MS9298B Structural Laminating Adhesive

#### PRODUCT DESCRIPTION:

ManuSpec MS2110A / MS9298B, is a two part, low viscosity epoxy compound that is designed for composite laminate repair. ManuSpec MS2110A / MS9298B has a working life of ~60 minutes at 25°C (75°F), for 100g of mixed product. When exposed to higher temperature, substrates and applications, ManuSpec MS2110A / MS9298B retains its' designed strength properties with a shortened work life. Please note that the working life is significantly decreased when masses greater than 1 lb are mixed before application.

The mix ratio of ManuSpec MS2110A / MS9298B resin to hardener is 100:22 by weight and 100:27 by volume. When fully cured, the material produces a durable, resilient bond that has strong environmental resistance to strong acids, bases and aggressive solvents. ManuSpec MS2110A / MS9298B was designed primarily for composite repairs to ferrous and aluminum substrates.

#### INSTRUCTIONS FOR USE:

Combine the proper proportions of resin and hardener in a clean container. Mix both components thoroughly until a uniform consistency is achieved. The work life of the mixture will vary with temperature and the quantity of material. **CAUTION: Mixed material evolves significant heat when quantities greater than 1 lb are mixed well, not applied, and remain in a concentrated mass.** Consult MSDS for additional safety measures.

#### Properties of Materials As Supplied:

(All tests are conducted at 25<sup>o</sup>±/- 2<sup>o</sup>C, unless otherwise indicated.)

#### Part A MS2110A Resin:

| Property             | Test Method | Unit           | Value          |
|----------------------|-------------|----------------|----------------|
| Chemical Type        | ---         | ---            | Epoxy          |
| Appearance           | Visual      | ---            | Pale Yellow    |
| Density              | ASTM D792   | g /cc (lb/gal) | ~1.15 (9.6)    |
| Brookfield Viscosity | ASTM D2393  | cP             | ~1,450 – 1,550 |

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**Part B MS9298B Hardener:**

| Property             | Test Method | Unit           | Value       |
|----------------------|-------------|----------------|-------------|
| Chemical Type        | ---         | ---            | Amine       |
| Appearance           | Visual      | ---            | Clear       |
| Density              | ASTM D792   | g /cc (lb/gal) | ~0.95 (7.9) |
| Brookfield Viscosity | ASTM D2393  | cP             | 15 - 25     |

**Properties of Mixed Material:**

| Property                   | Test Method | Unit           | Value  |
|----------------------------|-------------|----------------|--------|
| Chemical Type              | ---         | ---            |        |
| Appearance                 | Visual      | ---            | Clear  |
| Density                    | ASTM D792   | g /cc (lb/gal) | ~1.11  |
| Brookfield Viscosity       | ASTM D2393  | cP             | ~1,200 |
| Pot Life (100g mass @25°C) | ---         | minutes        | ~50-60 |

**Cure Schedule:**

| Cure Schedule | Option 1 | Option 2 |
|---------------|----------|----------|
| 24hr@25°C     | X (S)    | X(S)     |
| 7d@25°C*      | X(U)     |          |
| 4hr@66°C      |          | X(U)     |
| 2hr@93°C      |          | X(U)     |

\*For full cure at ambient temperature, S = Supported U= Unsupported

**Properties of Cured Material:**

Note: Values indicated are evaluated in an unsupported mode at ambient lab temperature (25°+/-2°C) unless otherwise indicated:

| Property                              | Test Method | Unit   | Substrate | Cure Cycle | Value        |
|---------------------------------------|-------------|--------|-----------|------------|--------------|
| Color                                 | Visual      | --     | N/A       | N/A        | Lt Amber     |
| Hardness                              | Shore D     | Scale  | N/A       | 4hr@66°C   | 86           |
| Tensile Strength & Percent Elongation | ASTM D-638  | psi(%) | N/A       | 4hr@66°C   | 10,750 (4.0) |
| Tensile Modulus                       | ASTM D-638  | ksi    | N/A       | 4hr@66°C   | 450          |
| Compressive Yield Strength            | ASTM D-695  | psi    | N/A       | 4hr@66°C   | 13,500       |
| Compressive Modulus                   | ASTM D-695  | Ksi    | N/A       | 4hr@66°C   | 725          |

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### **STORAGE AND HANDLING:**

The shelf life of ManuSpec MS2110A / MS9298B is 12 months at 25 °C. For best results, store in original, tightly closed containers in a cool, dry place out of direct sunlight. Containers should be loosely covered during the heating process to avoid pressure buildup. Allow contents to return to room temperature before mixing resin and hardener.

### **PACKAGING:**

ManuSpec MS2110A / MS9298B is packaged in pints, quarts, gallons, pails, and drums. The hardener is packaged according to the container size of the resin. Specialty packaging options are available on request. Contact customer service for additional information at 281 351-9889 or [sales@manuspec.net](mailto:sales@manuspec.net)

### **GENERAL INFORMATION:**

Recommendations for the use of products are based upon tests believed by us to be reliable. However, since the handling and use of our products under user's conditions are beyond our control, no warranty, expressed or implied, including but not limited to merchantability or fitness for a particular use, is made concerning this product. The user assumes all risks of use or handling, whether or not in accordance with any directions or suggestions of the supplier. Seller shall not be liable to purchaser or any other person for loss or damage directly or indirectly arising from the use of our products, from breach of any warranty or any other cause, the exclusive remedy against the seller being to require replacement or repair of defective goods. If the purchaser does not accept products on such items, they are to be returned at once, unopened. **This material is for professional and industrial use only.**

*PRODUCT INFORMATION CONTAINED HEREIN IS INTENDED FOR REFERENCE ONLY. MATERIAL SAFETY DATA INFORMATION AVAILABLE AT (281)351-9889.*