Mor-Ad™ M-664 Laminating Adhesive
One-Part, Non-Volatile, Bead-Applied Urethane Adhesive

FEATURES/BENEFITS

Description
Mor-Ad™ M-664 Laminating Adhesive is a one-part, moisture-cure, non-volatile urethane adhesive designed for application by bead applicator. Mor-Ad™ M-664 is one product in the full line of Mor-Ad™ Laminating Adhesives, available in both one and two-part urethane adhesive designed for semi-continuous and continuous laminators.

Ease of Use
Mor-Ad™ M-664 is easy to handle, use and apply. Some features include:
• Solvent-free liquid with good flow and transfer properties
• Bonds strongly to a wide variety of materials
• Excellent resistance to heat, cold, and moisture

Common applications for Mor-Ad™ adhesives include:
• Structural insulated panel (SIP) adhesion
• Garage doors
• Walk-in coolers & freezers
• Architectural panels
• Sunroom panels
• RV lamination
• Miscellaneous panel lamination

Available Sizes
Mor-Ad™ M-664 is sold in 55 gallon steel drums and totes, available through select distributors or directly from DuPont.

PROPERTIES

Mor-Ad™ M-664 Laminating Adhesive exhibits physical properties as indicated in Tables 1 and 2 when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-866-583-2583 when additional guidance is required for writing specifications that include this product.

TABLE 1: Typical Physical Properties for Mor-Ad™ M-664 Laminating Adhesive

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Syrupy liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Viscosity (Brookfield RVT, #4 Spindle, 10 rpm), Cps @ 25°C</td>
<td>4500 nominal</td>
</tr>
<tr>
<td>Working and Cure Time</td>
<td>Refer to Table 2</td>
</tr>
<tr>
<td>Density</td>
<td>9.13 lbs/gal (1.09 kg/L)</td>
</tr>
<tr>
<td>Flash Point (Setaflash), °F</td>
<td>&gt;200 (93°C)</td>
</tr>
</tbody>
</table>

* Mor-Ad™ M-664 is a former product of The Dow Chemical Company
TABLE 2: Cure Schedule* for Mor-Ad™ M-664 Laminating Adhesive

Application rate of 12 g/sq.ft. adhesive (129 g/sq.ft.) and 2 g/sq.ft. water (22 g/sq.m.) Fiber-Reinforced Plastic (FRP) to Lauan

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Maximum Working Time</th>
<th>Press Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°F (16°C)</td>
<td>16 Minutes</td>
<td>31 Minutes</td>
</tr>
<tr>
<td>65°F (18°C)</td>
<td>16 Minutes</td>
<td>31 Minutes</td>
</tr>
<tr>
<td>70°F (21°C)</td>
<td>15 Minutes</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>75°F (24°C)</td>
<td>15 Minutes</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>80°F (27°C)</td>
<td>14 Minutes</td>
<td>29 Minutes</td>
</tr>
<tr>
<td>85°F (29°C)</td>
<td>14 Minutes</td>
<td>29 Minutes</td>
</tr>
<tr>
<td>90°F (32°C)</td>
<td>14 Minutes</td>
<td>28 Minutes</td>
</tr>
<tr>
<td>95°F (35°C)</td>
<td>13 Minutes</td>
<td>28 Minutes</td>
</tr>
<tr>
<td>100°F (38°C)</td>
<td>13 Minutes</td>
<td>27 Minutes</td>
</tr>
<tr>
<td>105°F (41°C)</td>
<td>13 Minutes</td>
<td>27 Minutes</td>
</tr>
<tr>
<td>110°F (44°C)</td>
<td>12 Minutes</td>
<td>26 Minutes</td>
</tr>
</tbody>
</table>

*Panels must be under pressure within the stated maximum working time. This information is based on a continuous thin film and is to be used as a guideline. Actual parameters must be verified at the facility where the product is to be used.

INSTALLATION

Use Conditions
A cure schedule detailing maximum working time and press time at varying temperatures for Mor-Ad™ M-664 Laminating Adhesive can be found in Table 2.

Application
Mor-Ad™ M-664 is designed to be applied via bead applicator. Water mist on the adhesive surface is recommended to ensure uniform cure rate.

Notice

Contact your DuPont sales representative or local authorities for state and local building code requirements and related acceptances.

HANDLING

WARNING: For Professional Use Only. Read and follow the entire Handling section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont™ products. Follow all applicable federal, state, local and employer regulations.

Precautionary Statements
- Mor-Ad™ M-664 Laminating Adhesive is moisture reactive and must be protected from undue exposure to moisture.
- Use only in well ventilated area away from open flames, sparks, or excessive heat.
- Avoid unnecessary contact with skin and eyes.

Clean Up and Purge
- To clean up Mor-Ad™ M-664 before it has cured, use DBE (dibasic ester) or propylene carbonate.
- Use all solvents with care. Make sure there is adequate ventilation. Read and understand the MSDS provided with the solvent.

Shelf Life and Storage
- Ideal storage temperatures for Mor-Ad™ M-664 are between 50-75°F (10-24°C).
- When stored as directed, and in the original unopened containers, at 70°F (21°C), Mor-Ad™ M-664 has a shelf life of 1 year from the date of manufacture.
- Containers of Mor-Ad™ M-664 should be stored under cover and protected from contact with rain or snow. Water should not be allowed to accumulate on the drums or pails where it can be drawn into the containers.
- Once opened, containers of the adhesive should be used immediately or protected by a blanket of dry nitrogen when standing unused.

Disposal
Dispose of any residual DuPont™ product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.
NOTICE: No freedom from any patent owned by DuPont or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where DuPont is represented. The claims made may not have been approved for use in all countries or regions. DuPont assumes no obligation or liability for the information in this document. References to “DuPont” or the “Company” mean the DuPont legal entity selling the products to Customer unless otherwise expressly noted. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY DUPONT. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. The buyer assumes all risks as to the use of the material. Buyer's exclusive remedy or any claim (including without limitations, negligence, strict liability, or tort) shall be limited to the refund of the purchase price of the material. Failure to strictly adhere to any recommended procedures shall release DuPont Specialty Products USA, LLC or its affiliates, of all liability with respect to the materials or the use thereof. The information herein is not intended for use by non-professional designers, applicators or other persons who do not purchase or utilize this product in the normal course of their business.

DuPont™, the DuPont Oval Logo, and Mor-Ad™ are trademarks or registered trademarks of DuPont or its affiliates. Copyright © 2019 DuPont de Nemours Inc.