

# Mor-Ad™ M-646 Laminating Adhesive

## One-Part, Moisture-Cure Urethane Laminating Adhesive

### FEATURES/BENEFITS

#### Description

**Mor-Ad™ M-646 Laminating Adhesive** is a one-part, moisture-cure urethane adhesive designed for bead or ribbon application. **Mor-Ad™ M-646** 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-646** 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-646** is sold in 55 gallon steel drums and totes, available through select distributors or directly from DuPont.

### PROPERTIES

**Mor-Ad™ M-646 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-646 Laminating Adhesive**

Property	Typical Value
Appearance	Syrupy liquid
Color	Light straw
Solids, %	100
Viscosity (Brookfield RVT, #4 Spindle, 10 rpm), Cps@ 25°C	9200 nominal
Working and cure time	Refer to Table 2
Density	9.26 lbs/gal (1.11 kg/L)
Flash point (Setaflash), °F	>200 (93°C)

**TABLE 2: Cure Schedule\* for Mor-Ad™ M-646 Laminating Adhesive**

Application rate of 12 g/sq.ft. adhesive (129 g/sq.m.) and 0.5 g/sq.ft., 1 g/sq.ft. or 2 g/sq.ft. Water

Temperature	Maximum Working Time			Press Time		
	0.5 g/ft² Water	1 g/ft² Water	2 g/ft² Water	0.5 g/ft² Water	1 g/ft² Water	2 g/ft² Water
60°F (16°C)	16	13	13	45	39	39
65°F (18°C)	15	12	12	41	36	36
70°F (21°C)	14	11	11	38	33	33
75°F (24°C)	13	10	10	35	30	30
80°F (27°C)	12	10	10	32	27	27
85°F (29°C)	11	9	9	29	24	24
90°F (32°C)	10	8	8	26	22	22
95°F (35°C)	9	8	8	23	20	20
100°F (38°C)	8	7	7	21	18	18

\* Mor-Ad™ M-646 is a former product of The Dow Chemical Company

\*\* 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.

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## INSTALLATION

### Use Conditions

A cure schedule detailing maximum working time and press time at varying temperatures for **Mor-Ad™ M-646 Laminating Adhesive** can be found in Table 2.

### Application

**Mor-Ad™ M-646** is designed to be applied via bead applicator. Water mist on the adhesive surface is recommended to ensure uniform cure rate.

### Notice

ICC Evaluation Service, Inc. (ICC-ES) has confirmed that **Mor-Ad™ M-646** complies with the provisions of the 2009 International Building Code (2009 IBC), 2009 International Residential Code (2009 IRC), 2006 International Building Code (2006 IBC), and 2006 International Residential Code (2006 IRC). This confirmation, as evidenced in ICC-ES evaluation report ESR-1023, provides guidance to code officials faced with approving the use of **Mor-Ad™ M-646** these codes. The evaluation report is available online at [www.icc-es.org](http://www.icc-es.org).

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

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## 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-646 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-646** 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-646** 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-646** has a shelf life of 1 year from the date of manufacture.
- Containers of **Mor-Ad™ M-646** 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.



**For more information visit us at  
[building.dupont.com/morad](http://building.dupont.com/morad)  
or call 1-866-583-2583**

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