

# STAYDRY<sup>®</sup> HiCap2000

## High Capacity Moisture Getter

### DESCRIPTION

**STAYDRY HiCap2000** is a high capacity moisture getter designed for use in a variety of high volume, high reliability, and hermetically sealed electronic, optic, OLED or LIDAR packages. The viscosity of this material allows for high volume stencil printing or dispense operations. Dried **STAYDRY HiCap2000** functions as an IRREVERSIBLE moisture getter absorbing water and CO<sub>2</sub>. **STAYDRY HiCap2000** absorbs excess moisture released from assembled materials and adhesives during environmental conditioning as well as absorbing moisture resulting from leaks in hermetic packages.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

### MATERIAL PROPERTIES

Material Properties	Value
Appearance:	Blue Paste
Viscosity @ 25 °C, Brookfield DVIII #51 @1 RPM	70,000 to 140,000 cPs
Viscosity @ 25 °C, Brookfield DVIII #51 @0.5 RPM	70,000 to 150,000 cPs
Density – paste, ASTM D 1475-60	≥ 1.33 g/cc
Tg, DSC (°C)	~93
Moisture Absorption (based on dry weight)	≥ 15%
Thermal Stability @ 200 °C:	< 1% Loss
Thermal Stability @ 250 °C:	< 1.5% Loss
Percent Filler	26 +/- 2%
Average Particle Size	35 µm
Maximum Particle Size	50 µm
Storage Temperature	0 to 10 °C
Shelf Life	6 months

**MOISTURE CALCULATION**

**HiCap2000 Moisture Absorption**

**Absorption Cap = 15% Total Weight  
(dry)**

**1" x 1" x 0.003" = 73mg**

**73mg x 15% = 10.95mg**

**AVAILABILITY**

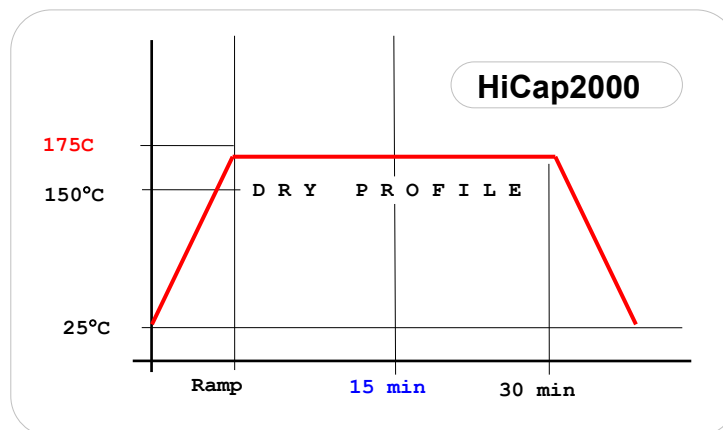
**STAYDRY HiCap2000** is available in standard 3cc and 10cc cartridges. Larger sized jars, such as 500g and 1000g, are available for printing applications.

**PROCESSING PROFILE**

Apply (no mixing needed) via stencil or screen print or dispense onto package lid or inside of package/device. Print using a 60 to 105 mesh stainless steel screen with suitable backside emulsion to achieve a 6 to 10mil wet deposition of material (shrinkage occurs in Z direction due to solvent evaporation).

After applying the material, dry according to the dry schedule (page 3). Activation of this material is not required. The resulting surface will be non-tacky and adhered to the package. Seal the package **IMMEDIATELY** after processing.

- **Recommended Coverage is 50% of lid surface @ 0.003" thick.**



**DRYING SCHEDULE**

**STAYDRY HiCap2000** can be dried/bonded at a variety of temperatures depending upon customer application and requirements.

Examples of thermal processing equipment used to process **STAYDRY HiCap2000** are reflow ovens, box ovens and belt furnaces. A variety of environments can also be used such nitrogen, argon, and ambient air.

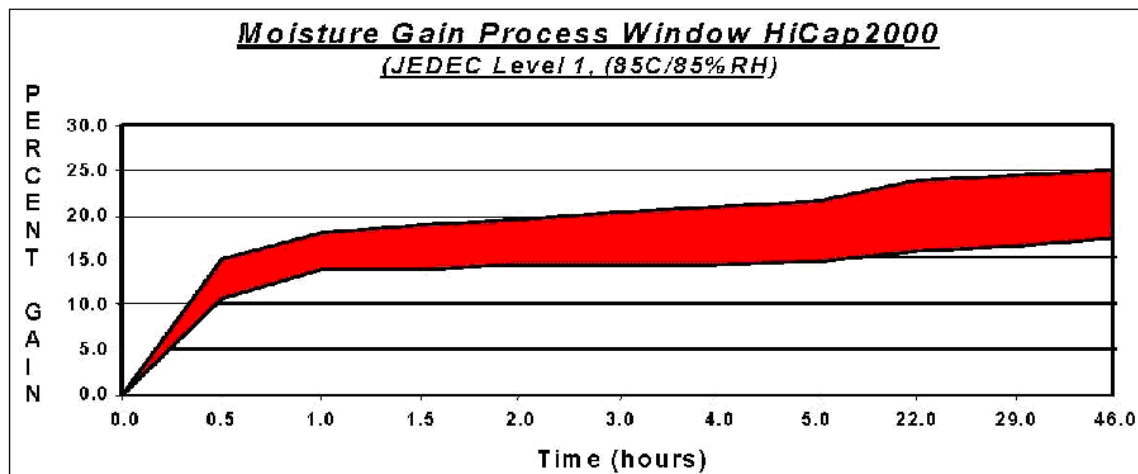
Temperature (°C)	Time (Minutes)
150	30 to 120
200	15 to 90

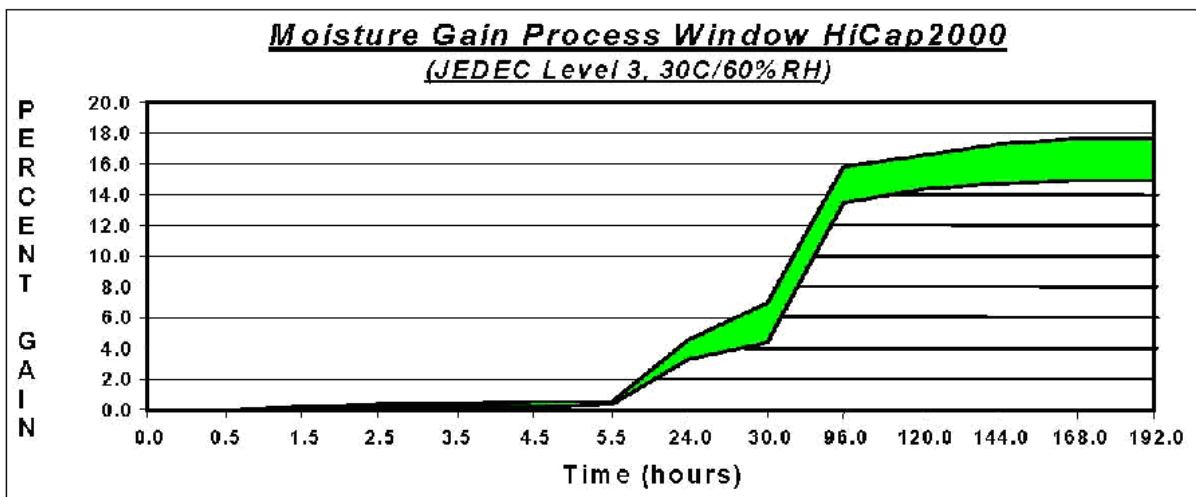
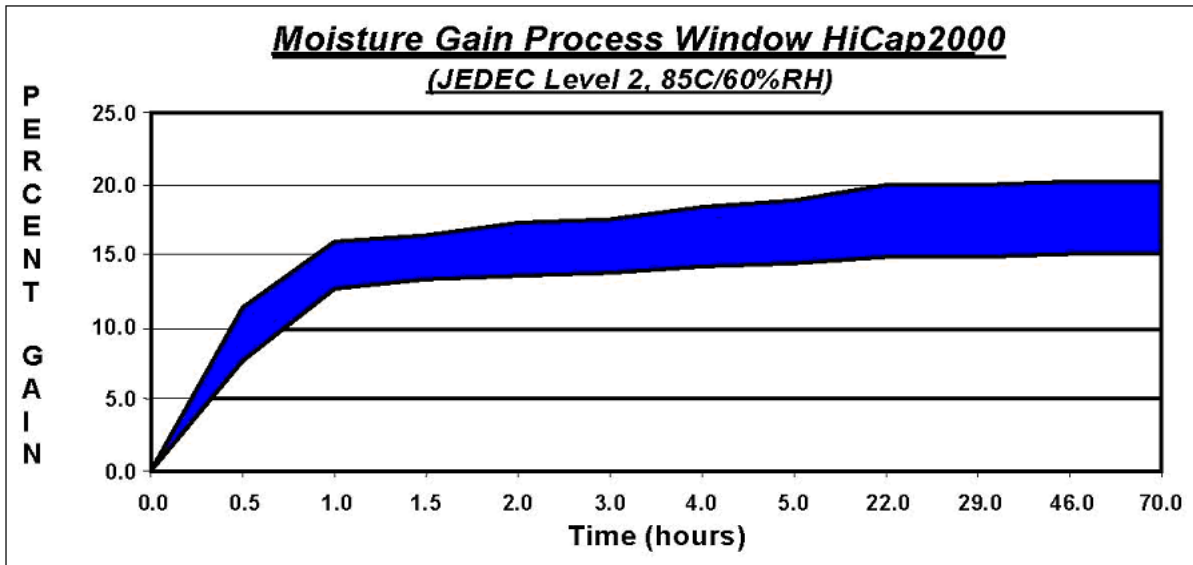
Thick deposits over 10mils wet, will need to be dried in a ramp profile to avoid surface defects, caused from solvent evaporation.

During thermal processing two critical phenomena take place.

1. Solvent removal which begins at 80 to 100 °C. Total time will depend on customer requirements, thickness and surface area of the HiCap deposit.
2. Adhesion, which is best achieved by exposure to temperatures of 150 °C or higher.

**MOISTURE GAIN**





**CLEANING**

Typical solvents used for cleaning stencils and screens are IPA (Isopropyl Alcohol), NMP (N-Methyl Pyrolidone), DMF (N,N-Dimethylformamide), MEK (Methyl Ethyl Ketone) or Acetone.

## SHIPPING & STORAGE

All sizes are shipped with cold packs in an insulating box. Cartridges may be kept at room temperature for up to 36hrs before material begins to show separation. **DO NOT** use material that is showing separation. Unused material may be placed back into cold storage when not in use. Ensure cap and tip are replaced before returning to cold storage.

## SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

## WASTE TREATMENT

Prior to using any recommendations or suggestions for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedent.

## CONTACT INFORMATION

To confirm this document is the most recent version, please contact  
**techinfo@MacDermidAlpha.com**  
[www.macdermidalpha.com](http://www.macdermidalpha.com)

<p><b>North America</b> 3950 Johns Creek Ct, Suite 300 Suwanee, GA 30024 USA 908.791.2300</p>	<p><b>Europe</b> Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p><b>Asia</b> 14 Joo Koon Crescent, Singapore 629014 65.6430.0700</p>
-----------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------

Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "(R)" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.