

STAYDRY® HiCap™ 2000

High Capacity Moisture Getter

DESCRIPTION

STAYDRY HiCap 2000 is a high capacity moisture getter designed for use in a variety of high volume, high reliability, and hermetically sealed electronic, optic, MEMS or MOEMS packages. The viscosity of this paste material allows for high volume stencil printing or syringe dispense operations.

Thermally processed or dried **STAYDRY HiCap 2000** functions as an irreversible moisture getter absorbing water and CO₂. **STAYDRY HiCap 2000** absorbs excess moisture released from assembled materials and adhesives during environmental conditioning as well as absorbing moisture resulting from leaks in hermetic packages.

STAYDRY HiCap 2000 Moisture Absorption

Absorption Cap = 15% Total Weight (dry)

1" x 1" x 0.003" = 73mg

73mg x 15% = 10.95mg

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

TYPICAL PROPERTIES

Material Properties	Typical Values
Appearance	Blue/White 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
Specific Gravity – paste , ASTM D 1475-60	1.33
Tg, DSC (°C)	~93
Moisture Absorption (based on dry weight)	≥ 15%
Thermal Stability @ 200 °C	≤ 1.2% loss
Percent Filler	26 +/- 2%
Average Particle Size	30 µm

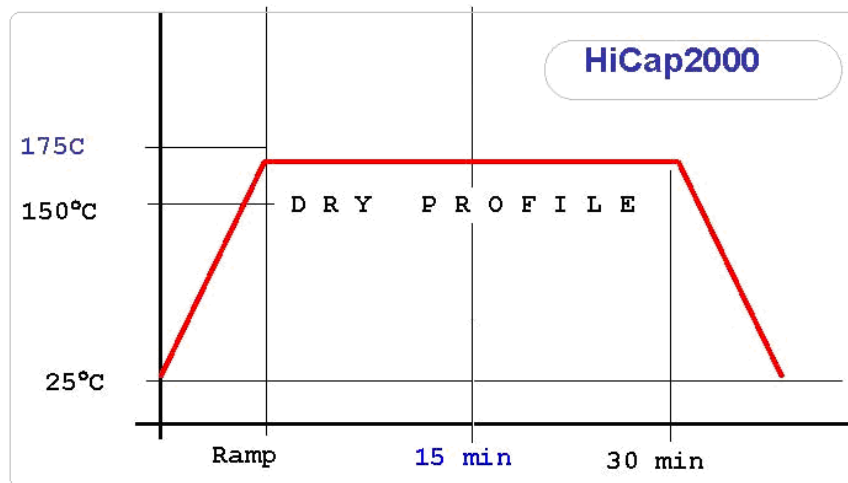
Material Properties	Typical Values
Maximum Particle Size	50 μm
Storage Temperature	0 to 10 °C
Shelf Life @ (0 to 10) °C	6 months

PROCESSING

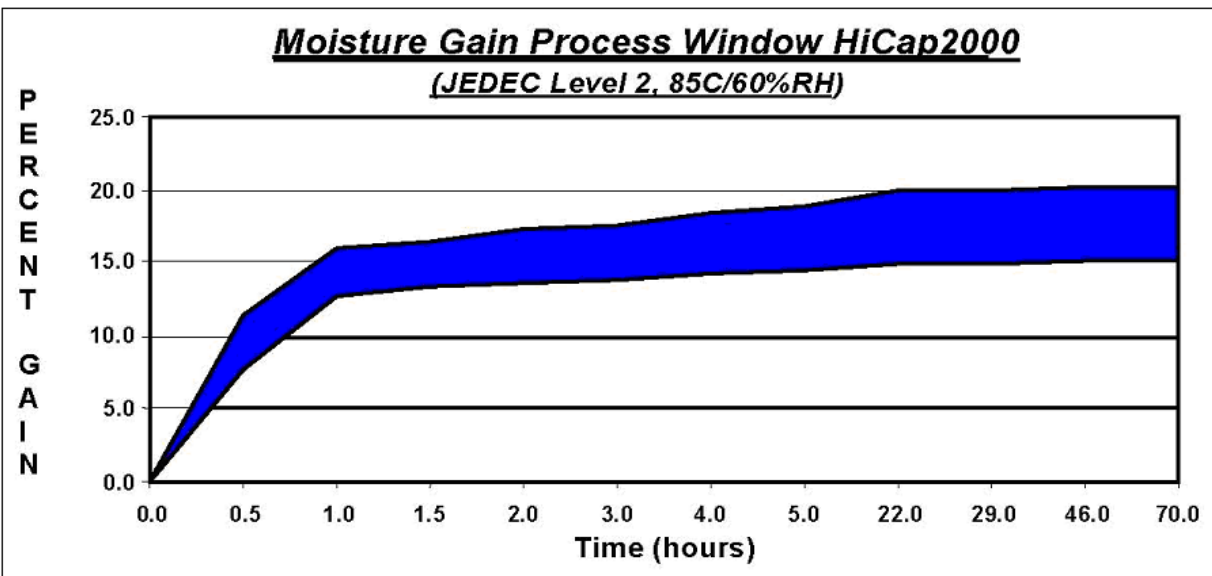
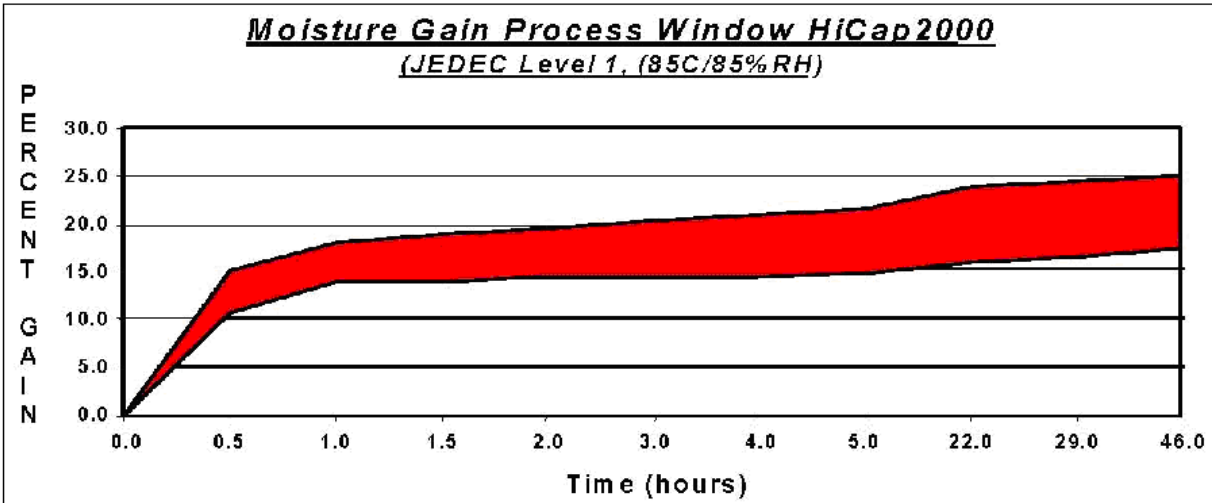
Apply (no mixing needed) via stencil or screen print or dispense onto package lid or inside of package/device. Print using an 80 to 120 mesh stainless steel screen with suitable backside emulsion to achieve a 6 to 10mil wet deposition of material (shrinkage occurs in Z direction due to solvent evaporation). Z axis shrinkage is ~60%. Weight loss during thermal processing is ~50%.

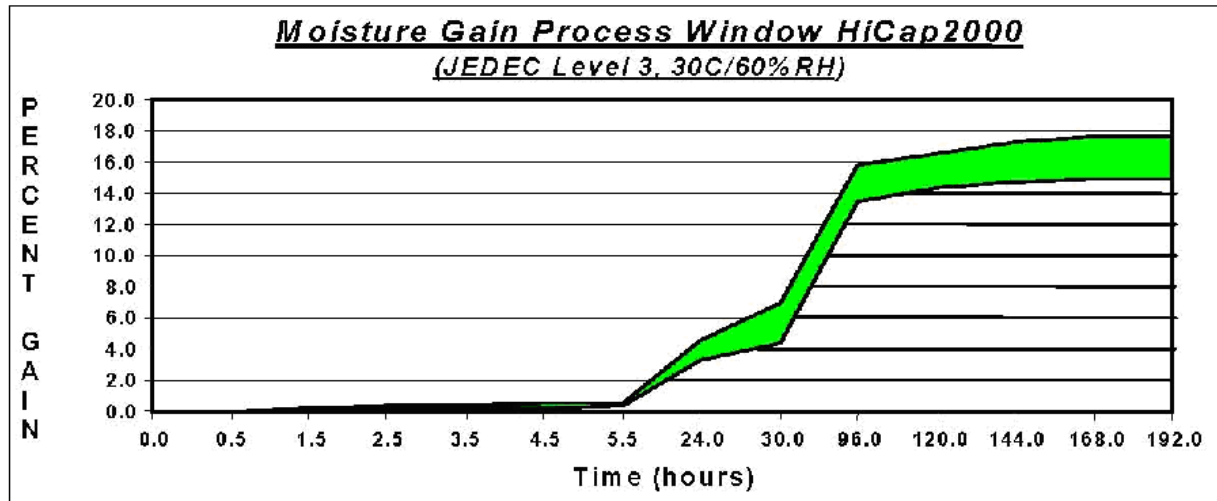
After the application of the material, dry according to the thermal processing schedule (page 4). Activation of this material is not required. The resulting surface will be non-tacky and adhered to the package substrate.

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



MOISTURE GAIN





Moisture Gain Process Window data is based on dried STAYDRY HiCap 2000 exposed to constant moisture and humidity. Weight gain is measured as percent moisture gain over time of dried material. Specific time to final package assembly after thermal processing is customer specific.

THERMAL PROCESSING SCHEDULE

STAYDRY HiCap 2000 can be dried/bonded at a variety of temperatures and equipment 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 as nitrogen, argon or ambient air.

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

Thick deposits over 10mils wet, may require a ramp drying 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.

CLEANING

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

AVAILABILITY

STAYDRY HiCap 2000 is available in standard 3cc, 5cc, 10cc and 30cc syringe sizes for dispensing. Larger sized jars, such as 500g and 1000g, are available for printing applications.

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

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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

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