

## STAYDRY<sup>®</sup> Z20

### Moisture Getter Film

#### DESCRIPTION

**STAYDRY Z20** is a film based moisture absorber designed for applications requiring low outgassing and high reliability in hermetic packages. MacDermid Alpha manufactures and sells a variety of getter technologies for the semiconductor, medical and aerospace industries specifically designed for these types of devices. **STAYDRY Z20** is MIL-STD-883 Method 5011 compliant.

**STAYDRY Z20** film is a unique getter, which employs an active desiccant for water absorption, dispersed in a flexible silicone polymer matrix. The film has a low outgassing PSA (Pressure Sensitive Film) on one side that allows easier and quicker attach of the getter film to substrates during assembly. The high permeability of the polymer matrix to moisture assures a rapid uptake of the gas in one hour or less.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

#### APPLICATIONS

**STAYDRY Z20** is thermally stable up to 220 °C. The material is a low outgassing, electrically non-conductive, silicone film and can therefore be molded or stamped to any desired shape. The excellent physical properties of the film allow the getter to remain flexible over the temperature range of -65 to 165 °C. As a result, no spalling or flaking occurs as the getter removes moisture. The composition of the material is designed to maintain a dew point of less than -65 °C. **STAYDRY Z20** also combines a low outgassing PSA (Pressure Sensitive Adhesive) allowing attachment to various substrates.

- High adhesive strength to: stainless steel, titanium, kovar, gold plated kovar, nickel plated kovar, polyimide, aluminum, ABS, acrylic, polystyrene, polycarbonate, polypropylene, silicone rubber & PET
- High heat resistance
- Low outgassing
- Low ionics
- RoHS & REACH complaint
- Excellent chemical resistance
- High level of environmental performance

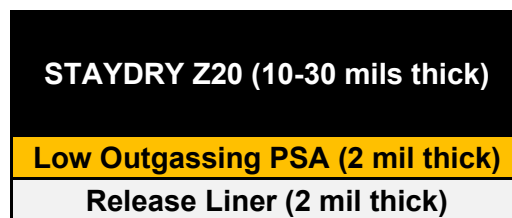
**TYPICAL PROPERTIES**

Property	Value
Appearance:	Black film
Storage Temperature:	10 to 25 °C
Getter Activation:	See Activation section
Shelf Life:	12 Months
Density:	≥ 1.15 g/cc ≥ 1.24 g/cc after moisture absorption
Thermal Stability @ 200°C:	< 1.0% Loss
Moisture Absorption:	≥ 8.0% by weight
CTE:	440 μm/m °C
Ionics:	Na <sup>+</sup> ≤ 50 ppm K <sup>+</sup> ≤ 50 ppm Cl <sup>-</sup> ≤ 200 ppm F <sup>-</sup> ≤ 50 ppm
Dielectric Constant	
60Hz	12.5
1kHz	12.4
10kHz	12.3
100kHz	11.8
1MHz	10.9
10MHz	8.8
1.1GHz	5.97
2.5GHz	5.44
5GHz	5.54
10GHz	4.07
Dissipation Factor	

Property	Value
60Hz	0.0001
1kHz	0.003
10kHz	0.005
100kHz	0.013
1MHz	0.074
10MHz	0.206
1.1GHz	0.1537
2.5GHz	0.1846
5GHz	0.4910
10GHz	0.2138

#### AVAILABILITY

**STAYDRY Z20** film is available in standard thickness of 10mil, 20mil and 30 mil. Special thicknesses are available upon request. Standard sheets are available in many sizes up to 8" x 10". Custom pre-forms (hard tool stamped) and laser cut preforms are also available upon request.



Graphic of STAYDRY Z20 as received

### BONDING ATTACH PROCESS

1. Allow substrates and **STAYDRY Z20** to reach ambient temperature (21°C to 38°C) before bonding.
2. Do not bond to surfaces at temperatures below (10°C/50°F).
3. Thoroughly remove all oil, moisture and any residues from the surface to be bonded.
4. Remove backing liner from **STAYDRY Z20**.
5. Place **STAYDRY Z20** were required. PSA may be cleaned off using acetone should incorrect placement occur. A new piece will be needed.
6. Be sure to apply pressure with a roller, press, or use sufficient hand pressure for smaller preforms. Failure to do so could effect PSA properties and appearance.
7. PSA film may not bond well to uneven or distorted surfaces.
8. Avoid placing significant stress on **STAYDRY Z20** film applied to substrate for several hours after application.
9. Material can be pre-applied or attached to the device. Store in dust resistant packaging or inert atmosphere until ready to perform final assembly.

### ACTIVATION

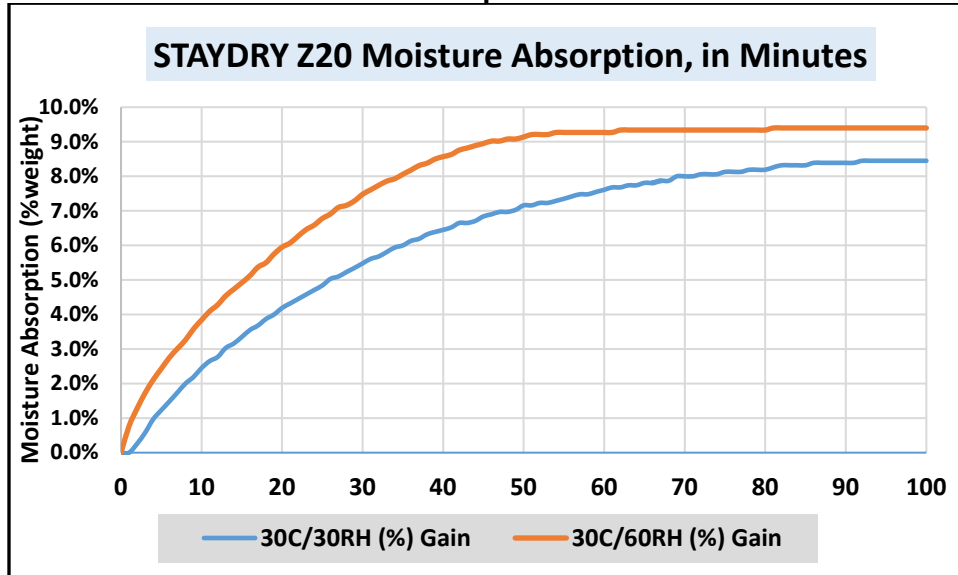
Place the bonded assembly into a vacuum oven at 150°C for a minimum of 16 hours (500mmHg or less). See below for alternative activation processes. Assemble package in a dry inert atmosphere. Seal the package **IMMEDIATELY** after activating. 90% of moisture gettering capacity is used after 45 minutes of exposure to normal humidity at 25°C. Getter may be activated up to 5 times.

STAYDRY Z20 Activation Chart		
Temperature (°C)	Time (Hours)	Vacuum (mmHg)
125	24	<250
150	16	<500
175	4	<760
200	2	None

STAYDRY Z20 Nitrogen Activation Chart		
Temperature (°C)	Time (Hours)	Environment*
100	8	Nitrogen
125	4	Nitrogen
150	2	Nitrogen
175	1	Nitrogen
200	0.5	Nitrogen

*\*66L Nitrogen oven was used with nitrogen flow rate set to 15L/min*

**Activated STAYDRY Z20 Absorption at 30°C/30RH & 30°C/60RH**



**SHIPPING & STORAGE**

There are no special shipping concerns for this product. Store material in an inert atmosphere or dry box as a maximum condition. Minimize long term exposure to air and dust particles. Always use powderless gloves when handling film. Shelf life of the material is 12 months from date of shipment, when stored dry at temperatures (10 to 25 °C). Product shipped with cold packs.

**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](mailto: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 908.791.2315</p>	<p><b>Europe</b> Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 01483.758400</p>	<p><b>Asia</b> 14 Joo Koon Crescent, Singapore 629014 65.6861.0244</p>
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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 directory assistance: Chemtrec 1 - 800 - 424 - 9300.

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