

STAYCHIP® F614-3A

Non-conductive and Electrically Insulating adhesive

DESCRIPTION

STAYCHIP® F614-3A is a thermosetting adhesive with electrical insulating properties designed for attachment or sealing applications of high reliability semiconductor packages and electronic assemblies. STAYCHIP F614-3A possesses the ability to attach a metal can or lid onto the package. F614-3A was specifically developed for superior adhesion to metal lid surfaces, epoxy laminate or solder mask coated substrates.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

TYPICAL PROPERTIES MATERIAL APPLICATION

| Material Properties | Method | Value | Remarks |
|--|----------------|---------------|----------------------|
| A. Uncured | | | |
| Chemical type | | Thermosetting | |
| Color | Visual | Black | |
| Filler type | | Silica | |
| Viscosity at 25 oC at 0.5 RPM | ASTM D2196-99 | ~200 Kcps | Brookfield Spindle51 |
| Viscosity at 25 oC at 5.0 RPM | ASTM D2196-99 | ~ 45 Kcps | Brookfield Spindle51 |
| Thixotropic index (0.5 RPM/5.0RPM) | ASTM D2196-99 | 4.0 | Brookfield Spindle51 |
| Flashpoint | ASTM D-93-02 | >200°C | |
| Pot Life @ 23 oC (time to doubling of viscosity) | ISO 10364:1993 | 24 hours | Brookfield Spindle51 |
| Stencil life | | 8 hours | |
| Storage Temperature | | 5°C | |
| Shelf Life @ 5°C | | 6 months | |
| B. Cured | | | |
| Glass Transition (Tg) | | | |

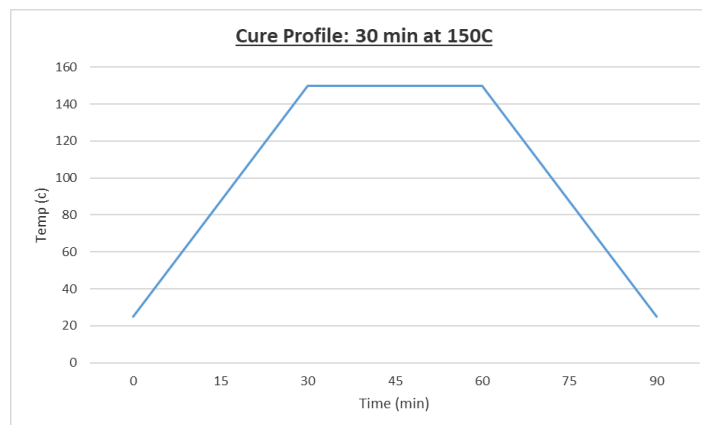
| Material Properties | Method | Value | Remarks |
|--------------------------------------|-----------------|-----------|---------|
| via TMA | ASTM D3386-00 | 117°C | |
| via DSC | ASTM D3418-99 | 122.76°C | |
| TGA Weight Loss After Polymerization | | 1.7% | |
| CTE (α 1) | ASTM D3386-00 | 45 ppm | |
| CTE (α 2) | ASTM D3386-00 | 165 ppm | |
| Die Shear Adhesion on Gold | DIN EN 60749-19 | 1800 psi | |
| Die Shear Adhesion on metal lid | DIN EN 60749-19 | >1350 psi | |

MATERIAL APPLICATION

STAYCHIP F614-3A is formulated to be applied via dispensing or screen printing operations. Highly filled materials are recommended to be dispensed using an Auger screw pump. The material will be consistently dispensed over time. In some cases nozzle/substrate heat may be necessary to wet-out material onto dispensed surface. Screen/Stencil printing can be carried out using standard mesh sizes which use stainless steel wires or stencils of standard thickness depending on application requirements. Equipment settings need to be optimized for desired material deposition response based on model and configuration.

CURE

STAYCHIP F614-3A cures typically in 30 min at 150C. Depending on thermal mass of application, oven profile, and oven type. Cure times may vary and should be optimized by the end user with their specific part/assembly.



CLEAN-UP

Uncured material may be cleaned from dispenser components and surfaces with a variety of solvents, including IPA, acetone, MEK, methylene chloride, etc. Always wash and dry thoroughly prior to re-use of the dispenser components. The cleaning technique should be active cleaning of the components – flush, wash or wipe, followed by a drying step to ensure a clean, dry surface. Do not soak since this can solubilize the hardener within the uncured resin and curing (very difficult to remove). Contact your equipment supplier to ensure the solvent is compatible with their components. Clean and maintain dispense valves as recommended by the equipment manufacturer.

PACKAGING SIZES

F614-3A is available in polypropylene jars or in opaque cartridges.

SHIPPING, STORAGE & THAWING

The normal shipping condition for STAYCHIP F614-3A is cold packs, packed in an insulated box. Macdermid Alpha may elect to ship on dry ice if the length of the shipment >7 days and/or the product may be exposed to high temperature excursions during the shipment. To ensure the material maintains critical material properties such as viscosity the material should be stored at 5°C for a maximum shelf life of 6 months. It is recommended that the material be allowed to thaw for 1 to 2 hours before opening. The container should be removed from freezer and set aside, allowing it to thaw at room temperature, until it reaches room temperature. To prevent contamination of unused product, do not return any material to its original container.

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

| | | |
|---|---|--|
| <p>North America 3950 Johns Creek Ct, Suite 300 Suwanee, GA 30024 USA 908.791.2315</p> | <p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 01483.758400</p> | <p>Asia 14 Joo Koon Crescent, Singapore 629014 65.6861.0244</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.