

General Solder Paste Handling Guidelines

Americas

Introduction

Below are the general guidelines to be used for handling Kester Solder Pastes. The product Technical Bulletin should always be referred to for verification of any specific recommendations or conditions.

User should always defer to specific product Technical Bulletin for handling conditions.

Shipping

- Kester solder paste products are engineered to be shipped between 0 to 29 °C (32 to 84 °F). In the Americas, the shipping containers are designed to remain below 25 °C (77 °F) under normal shipping, handling and delivery conditions.
- According to tests using standard Kester packaging (foam insulation with ice gel-packs) solder paste remains below 25 °C (77 °F) for 48 hours even when shipped on days that reach 32 °C (90 °F). (See data log record at end of document.)
- Melted Ice-gel packs are not necessarily an indication of exposure above 25 °C. Temperature indicator strips may be included in packaging upon request to verify the maximum temperature that solder paste has been exposed to.
- Our distributor partners take active responsibility during final transport and delivery to customers for maintaining the integrity of Kester solder pastes. Every care is taken to use completely frozen gel packs and sealed cartons with the original foam insulation when re-shipping paste to customers if the outside temperature will be over 25 °C (77 °F).
- Next day shipping should be used when the ambient temperature is above 30 °C (86 °F). Keep in mind that air shipments can be better for solder paste, as air cargo holds are extremely cold, even in the summer months.

Storage

- Long term storage of solder paste is best achieved by refrigeration 0 to 10 °C (32 to 50 °F). The material should be placed in a storage area designed to maintain this temperature range (refrigerator or cold room) immediately upon receipt.
- Typical no-clean solder paste shelf life is 6 months. Water soluble paste ranges from 3 to 6 months in a refrigerated environment. Reference specific product Technical Bulletin for exceptions. Please note shelf life is determined from the date of manufacturing
- Exposure to temperatures above 29 °C (84 °F) will decrease the useful life of paste. Exposure to 32 °C (90 °F) for up to 7 hours is an extreme condition that should be avoided. However, Kester no-clean solder pastes have been used successfully if the paste is refrigerated and used within 5 days of this extreme temperature exposure.

- Typical solder paste shelf life is 6 months in a refrigerated environment if the paste has not been exposed to temperatures above 29 °C (84 °F). Verify product Technical Bulletin for exceptions.
- Cartridges are best stored vertically, tip down. If stored horizontally, best practice is to turn cartridges 180° once every week.
- Solder paste should never be stored at room temperature 19 to 25 °C (66 to 77 °F) for prolonged periods of time. Verify room temperature storage limit recommendations on the product Technical Bulletin. Room temperature stability is intended to provide manufacturing flexibility after storing the product and prior to use.

Usage

- Paste should always be used on a First In First Out (FIFO) basis. To maintain optimum performance, solder paste should not be stored outside of refrigeration for an extended duration prior to opening the container. Please consult the Technical Bulletin for a specific recommendation on maximum recommended extent of room temperature storage for any product prior to use.
- Solder paste should be allowed to reach room temperature, 19 to 25 °C (66 to 77 °F), without forced heating. We recommend a period of 3 to 4 hours out of refrigeration before the paste is used. The specified viscosity of each paste is based on a Malcom Viscometry measurement at 10 RPM at 25 °C.
- Manually stirring or folding the solder paste is recommended for material packaged in jars, prior to use. This is intended to mix the paste to homogeneity if minor settling has occurred inside the jar during storage. Use care to prevent mixing air into the paste. Automated stirring equipment is not required.
- Apply an even paste bead on the stencil over the width of the squeegee with a diameter of approximately 12 mm (1/2 in). Replenish when paste bead is <12 mm (1/2 in) and replace the material when exceeding stencil life or has been exposed to high temperatures inside the printer >29 °C (84 °F). If the solder paste is designed for printing at temperatures over 29 °C, it will be indicated on the Technical Bulletin.
- Refer to product Technical Bulletin for room temperature stability life.
- If containers are unopened, they may be returned to the refrigerator to stop further degradation of the product; opened containers (especially jars) are subject to condensation when refrigerated.
- Do not remove worked paste from stencil and mix with unused paste in a jar. This will alter the rheology and possibly the moisture content of the unused paste and can negatively affect paste performance.
- Failure to follow these guidelines will result in reduced shelf life and diminished product performance and may make the product unsuitable for use.
- Paste performance properties do not undergo a sudden dramatic change after any given period; they change slowly, with time. These changes are accelerated at higher temperatures. Shelf life issues are mostly related to printing or dispensing the product. If solder joint coalescence after reflow is good, and the resulting solder joints meet or exceed the applicable workmanship requirements (e.g. IPC-A-610), solder joint integrity has been achieved.
- Always dispose of solder paste waste in accordance with local environmental legislation.
- The current version of all Kester products' SDS can be found at <https://www.kester.com/downloads/sds>.

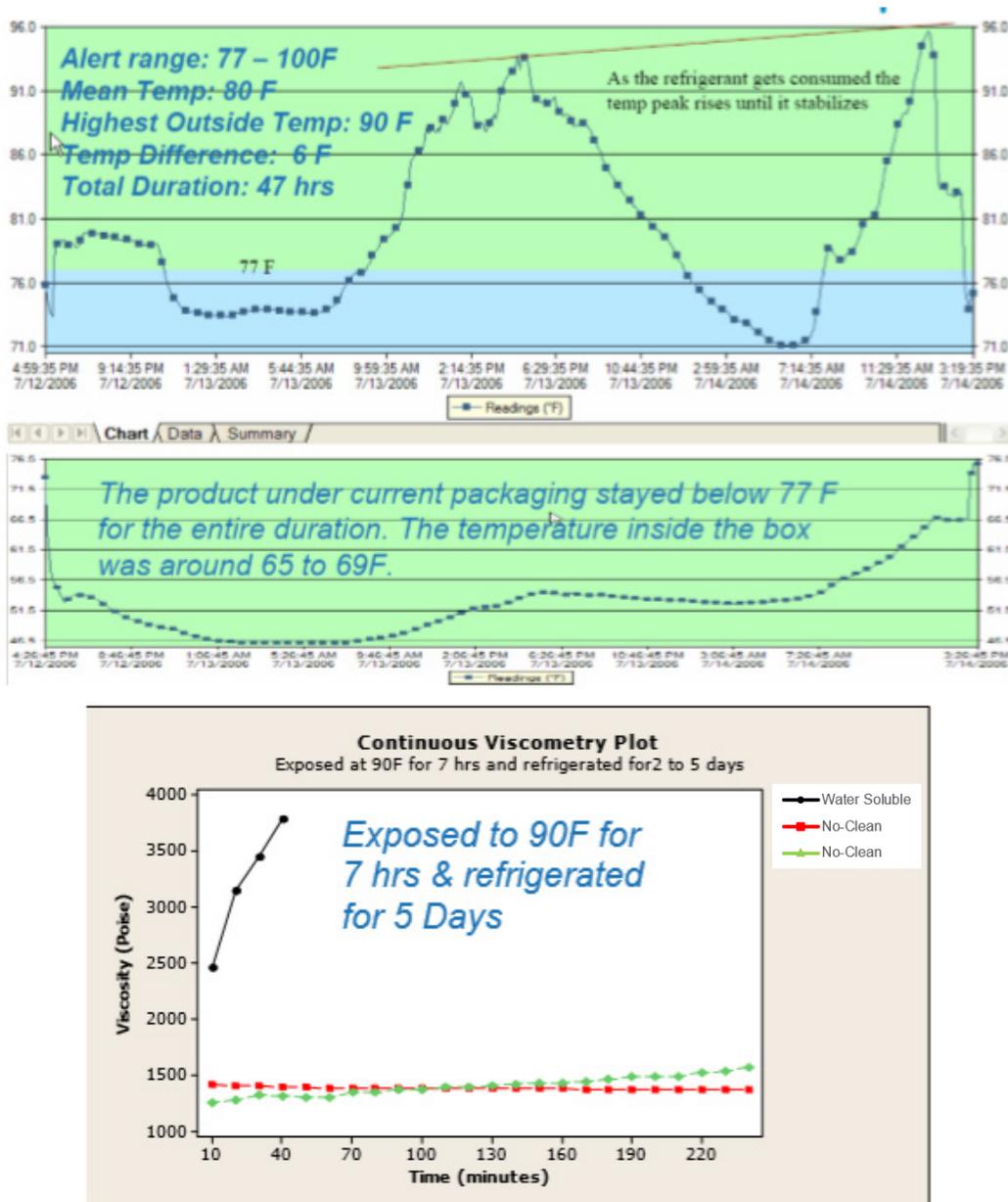


Figure 1.

Temperature logs of packaged paste temperature when shipped at 32 °C (90 °F) ambient temperature (upper), viscosity of pastes exposed to 32 °C (90 °F) and refrigerated (lower).

Contact Information

To confirm this document is the most recent version, please contact
Assembly@MacDermidAlpha.com

North America 800 West Thorndale Avenue Itasca, IL USA 60143 Phone: +1 800.2.KESTER	Asia Pacific 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong Phone: +852.3190.3100	Europe Ganghofer Strasse 45 82216 Gernlinden, Germany Phone: +49 (0) 8142 4785 0
---------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

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 of MacDermid, Inc. and its group of companies in the United States and/or other countries.