

STANDARD PROCEDURE – STORAGE OF SOLDER PASTE

SOLDER PASTE STORAGE

In this technical information we would like to give an overview regarding the correct handling of solder pastes produced by Stannol. Please note that this can only be a general recommendation with advantages but also some disadvantages for each individual procedure.

STORAGE BEFORE USE – LONG TERM STORAGE:

- The storage temperature for solder paste in the unopened packaging (jar, cartridge) is 2-8 °C (+/-2 °C) during the shelf life. The relative humidity in storage does not affect the quality of the solder paste as long as it is stored in the closed jar or cartridge.
- Solder paste in syringes (e.g. 10 or 30 ml for dispensing processes) or cartridges Semco 650 g and 1200 g should be stored upright and with the tip downwards. If cartridges cannot be stored vertically and need to be stored horizontally, it is recommended to turn cartridges 180° once a week to minimize or prevent separation.
- The typical shelf life in jars and Semco cartridges is 6 months and in cartridges 3 months from the date of manufacture. Exceptions may apply. Please refer to the expiry date on the label of the packaged product for more specific information.

IS IT POSSIBLE TO USE THE PASTE AFTER ITS EXPIRY DATE?

The quality of the expired solder paste must be double checked before use:

- **Printability:** Make a test print with a plastic foil on your PCB and check the aperture and the solder paste release from the stencil. If the solder paste is still printable, this is an indication of a viscosity that is still within the allowed tolerances of the specification. If the print is as expected, the first prerequisite for further use of the paste is given.
- **Solder ball Test per IP-TM-650 method 2.4.43:**
Check the solderability of the solder paste in your reflow process, similar to a quality control in our laboratory: solder ball test. Ask your stencil manufacturer for a small test stencil with 5 mm round openings and 150 µm thickness. Use a flat spatula to print a few dots with this stencil on a non-wettable surface, e.g. the solder mask area on a scrap PCB, and run it through your reflow system. One main solder ball and no or very few solder balls will be equivalent to a freshly produced solder paste of class 1 or 2 in quality control and the paste can be further used. The IPC test methods can be downloaded free of charge from the IPC website.
- Please contact your technicians for assistance: We can test solder pastes for solderability and viscosity in our laboratory using the same methods as in our standard production. We can determine if the solder paste is still within specification and its tolerances.

HANDLING AND STORAGE SHORT TIME BEFORE USE:

- Temper the unopened jar of solder paste at room temperature 20-23°C (+/-1°C) for at least 4 hours.
- For a stable viscosity in the printing process stir the paste evenly and slowly in the jar for max. 60 seconds before use. Please use a stainless steel or chemically resistant plastic spatula without sharp edges to avoid chipping the plastic jar and adding plastic flakes to the paste.
- A suitable solder paste mixing system can be a good option to bring one or more jars of solder paste to the correct temperature and printing behaviour within 2-6 minutes. The time required depends on the mixing system and can be determined by measuring the temperature of the solder paste after mixing. Always estimate the time required with full jars and try to keep the mixing time as short as possible due to the rheology of solder pastes.
- If you need the solder paste at room temperature the next morning, remove it from the refrigerator and store it overnight at room temperature near your production line. Solder paste can easily be stored at room temperature for 1-2 weeks (1 week at 20 °C is equivalent to 2 weeks at 10 °C) – but it is not recommended.
- It is not allowed to mix used solder paste with fresh paste. The reason for this is that the used solder paste on the stencil has already absorbed some moisture during the printing process. This can already result in oxidized particle surfaces, so that the solderability of the paste is reduced. In addition, as the paste dries out, the viscosity of the paste increases, which might affect the printability.
 - o The background is quite simple: If you notice the next morning that the used solder paste is already too dry, because it has already been used on the printer for too long, you have already added a certain amount of valuable and fresh solder paste – so you increase the amount of used solder paste which you need to dispose. If you keep them separate, this already used solder paste is the only amount you have to dispose of and you still have some fresh paste left to use.
- If you intend to use the paste you have already used immediately the next morning after starting production, please leave it at room temperature overnight. This is less damaging to the solder paste than constantly adding a thin layer of condensation after it has been taken out of the refrigerator and has not had time to reach room temperature.
- With most solder pastes, it is not critical to take them out of the refrigerator on Friday afternoon and store them at room temperature over the weekend. Do this with exactly the amount of paste you need on Monday morning for the first hours of production. After the start on Monday morning, take the remaining solder paste you need out of the refrigerator. This paste has enough time to reach room temperature before opening the jar.
- Please do not heat the solder paste taken out of the refrigerator (e.g. by storing it for some time on a hot surface, such as on top of the reflow system).

NOTE

The above values are typical and represent no form of specification. The data sheet serves for information purposes. Any verbal or written advice is not binding for the company, whether such information originates from the company offices or from a sales representative. This is also in respect of any protection rights of third parties, and does not release the customer from the responsibility of verifying the products of the company for suitability of use for the intended process or purpose. Should any liability on the part of the company arise, the company will only indemnify for loss or damage to the same extent as for defects in quality.