

Subject: Mixing of PPG Aerospace Sealant in Semco™ Semkit

Sealants Bulletin No. S-ESB-24-15

Issued by: Madison West

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Approved: Bill Keller

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Summary:

It is important to inspect the dasher rod after mixing injection type Semco™ Semkits to ensure all the accelerator has been fully injected.

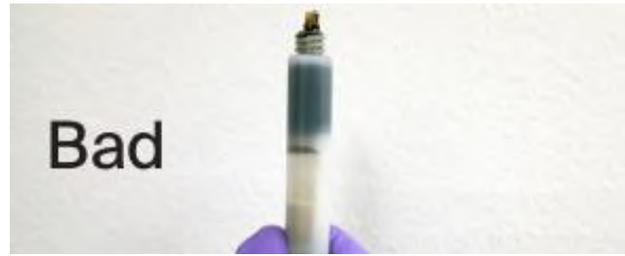
Details:

It has come to PPG's attention that PPG Aerospace sealants packaged into Semco™ Semkits, may occasionally retain a minimal quantity of accelerator in the dasher rod post-mixing. It is important to visually inspect that all accelerator has been fully injected into the Semkit during mixing, regardless the means of mixing, automatic or manual. The accelerator plays a vital role in the curing process of the material. Therefore, it is imperative that proper mixing, including mix ratio, is achieved.

The following are pictures showing good and bad accelerator injection of the dasher rod. Note that inspection must take place after material mixing by wiping material off the dasher rod.



Picture 1: Complete injection of accelerator.



Picture 2: Incomplete injection of accelerator.

See attached Semkit mixing instructions which includes an example of proper dasher rod inspection post mixing.

Thank you and regards,



Madison West
Materials Engineer

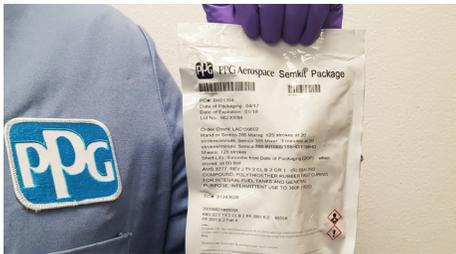
Attachments: Semkit Mixing Guide

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Catalyst in dasher rod with base in cartridge

1. Wear safety glasses, gloves and other appropriate protection during all operations. Review the relevant Technical Data Sheet (TDS) and Safety Data Sheet (SDS) before using any chemicals. Contact your site Health and Safety supervisor for more details on appropriate PPE and safety precautions.

2. For optimum mixing properties and ease of mixing, the kit should be conditioned at 70 °F ± 5 °F (21 °C ± 3 °C) prior to mixing and use. When not in use, the kit should be stored as directed on the product label or relevant material specification to ensure retention of properties and maintain the product certification. Store the kit in the upright position to minimize the potential for leakage. Do not open or puncture the outer Mylar[®] bag until the cartridge is ready to be mixed. The outer Mylar[®] bag is purged with an inert atmosphere which preserves the cartridge during storage.



Step 3

3. Inspect the label on the bag and verify that the shelf life is within the listed expiration date. Verify that the sealant is the correct product for your application. Open the outer Mylar[®] bag and gently empty the contents of the bag. The bag may contain a glass vial of adhesion promoter if required for use with the sealant; take care not to damage or break the glass vial.



Step 4

4. Hold the cartridge firmly in one hand, with your other hand holding the dasher rod handle. Pull the dasher rod forward approximately 1/4 of the way up the cartridge (away from the plunger so that the dasher rod is not in contact with the plunger).

5. Insert the ramrod into the hollow hole in the handle of the dasher rod; push the dasher rod so that it moves the dasher piston, and inject approximately 1/3rd of the contents of the dasher rod (accelerator component) into the cartridge.



Step 5 A



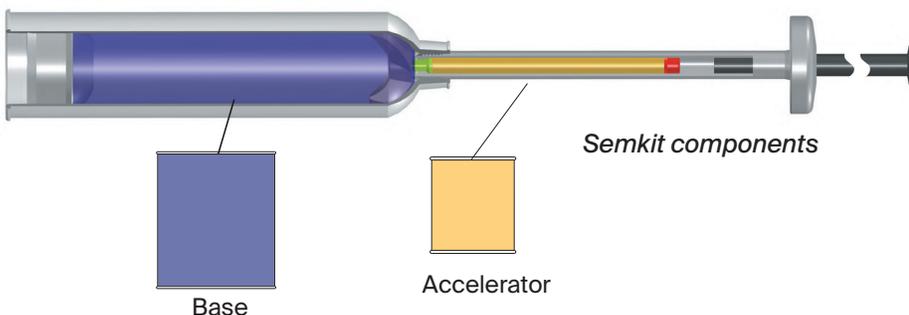
Step 5 B

CAUTION: Use firm but even pressure when pushing the ramrod. Do not use excessive force, tap, pound, or jolt the ramrod if the piston does not move readily. The dasher piston may be difficult to move at first, but will move with continued even force from the ramrod.



Step 6 A, B, C

6. Repeat steps 3 and 4, working your way up the cartridge and advancing the dasher rod toward the neck end of the cartridge until all of the contents are emptied into the cartridge, so that the accelerator is injected in approximately 1/3rd intervals throughout the cartridge. Do not inject all of the accelerator at once or in one area, as this will lead to a non-uniform mix, and may impact application and performance properties of the sealant.



Catalyst in dasher rod with base in cartridge



Step 7

7. To mix, hold the cartridge and push the dasher rod to the bottom of cartridge against the plunger. Do not force the dasher rod against the plunger, as this may expel the plunger, or cause air entrapment in the cartridge. Begin stroking the dasher rod in a spiral clockwise motion from the plunger end of the cartridge to the neck end of the cartridge. Rotate the dasher rod approximately 90° with each push or pull of the dasher. A stroke is one complete in and out cycle, with approximately 180° clockwise turn of the dasher. For the first 3 to 5 strokes, keeping the ramrod inserted into the dasher rod may prevent material from flowing back into the dasher rod during mixing. Mix for the total number of strokes or time indicated on the instruction card accompanying each *Semkit* package or as noted on the product label. On the last stroke the dasher rod should be pushed to the plunger end of the cartridge, taking care not to push the plunger.



Step 8 A



Step 8 B

8. Grasp the cartridge firmly at the plunger end and detach dasher rod from the mixing dasher by turning the dasher rod counterclockwise approximately three turns. Pull and remove the dasher rod from the cartridge.

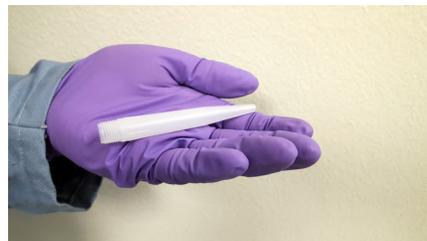


Step 8 Good



Step 8 Bad

IMPORTANT: Inspect the dasher rod to ensure that all of the accelerator component has been injected into the cartridge. There should be no accelerator component left in the dasher rod. A small amount of residue around the walls or piston is acceptable. Do not discard the dasher rod until verification of mix has been performed in step 12.



Step 9 A



Step 9 B

9. Thread a *Semco* specialty nozzle into the neck end of the cartridge as required for the application being performed. For more information regarding nozzles and other dispensing equipment, please contact your local PPG sales representative or aerospace ASC location.



Step 10 A



Step 10 B

10. Remove bottom flange cap.



Step 11 A



Step 11 B



Step 11 C

Catalyst in dasher rod with base in cartridge



Step 11 D



Step 11 E

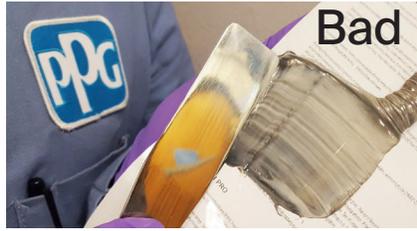
11. Insert the cartridge into a *Semco* dispensing gun. Please refer to the relevant *Semco* dispensing gun Technical Data Sheet for proper assembly and operation of the gun.



Step 12 A



Step 12 Good



Step 12 Bad

12. Dispense a small amount of the sealant onto a clean cloth, sheet of white paper, or onto the surface of the Mylar® bag for inspection. Inspect that the sealant is homogeneous and free of skins or lumps. Correctly mixed sealant will be free of any striations or color marbling. If color banding or marbling are present, the sealant may need additional mixing. If necessary, insert the dasher rod and install it into the dasher element with 3 clockwise rotations. Continue mixing as listed in step 7 until no more banding or striations are observed.

13. Apply the sealant as required by the relevant process specification or work instructions.



Step 14

14. When finished using the sealant, (i.e.: the cartridge is empty, or the sealant has reached the end of its rated application life), dispose of the *Semkit* package, dasher rod and nozzle properly in accordance with local and site hazardous material requirements.

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