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Adjustable Solid Load Cartridge Cap for RediSep® Cartridges
Product Information and Instructions

keywords: Combi*Flash,* EZ*Prep,* NextGen, Redi*Sep*, Solid Load Cartridge Cap

Overview

Teledyne ISCO's adjustable Solid Load Cartridge Cap (SLCC) is easy to use and provides you with additional flexibility in loading your solid samples. Teledyne ISCO recommends solid sample cartridges for best purification results. (See Chromatography Application Note 15, *Dry samples improve resolution in normal phase flash chromatography*.)

Caps are available (refer to Table 1) to fit 5, 25, 65, and 260 gram (maximum silica capacity) Redi*Sep* empty or prepacked solid load cartridges for use with Combi*Flash*® and NextGen systems.

If using the SLCC as a Teledyne ISCO self-pack columns, refer to the *Self-pack Columns Instruction Sheet*, part number 69-3873-506.

This kit includes a Solid Load Cartridge Cap Ring Support and tubing for the Combi*Flash* NextGen. If using the Solid Load Cartridge Cap with a Combi*Flash* EZ*Prep* or older Rf system, these items can be disregarded and you can skip to the *Preparing Cartridges* section.

Review and be familiar with the *CombiFlash NextGen Important Information* document (69-5253-086) before using the system.

Designed for Convenience

The design of the cap is simple, yet effective:

- **Easily adjustable** – A lever on the cap provides for quick vertical movement of the metal plunger rod, allowing for adjustment to any bed height.

- **No dead volume** – Eliminating dead volume improves gradient accuracy because there is no space for solvent mixing.

- **Secure lock** – The locking mechanism holds the plunger and cartridge securely in place, without the use of clumsy external springs and hardware.

- **Low maintenance** – The plunger uses a virgin PTFE seal, eliminating costly, leak-prone O-rings.

- **No leaks** – Internal stops within the cap keep the cartridge from rotating once installed. The cap locks onto the cartridge and prevents leaks, even under high operating pressures.

- **High operating pressure** – The 5, 25, and 65 gram caps, when used according to these instructions, are rated to 200 psi.

Installation of SLCC Ring Support (NextGen and NextGen 300/300+ only)

Installing the SLCC Ring Support

1. Place the SLCC Ring Support suitable for the intended cartridge size into the hole on top of the injection port trolley (Figure 1)

   There are two SLCC ring sizes: 1) for 5 and 65 g cartridges; 2) for the 25 g cartridge.

Figure 1. Injection port trolley.

2. Secure the ring support with the provided knobbed screw (Figure 2).

Figure 2. Ring support.

⚠ WARNING

The SLCC Ring Support ring should be used to secure the solid load cartridge during use.

Grounding and plumbing the SLCC to the CombiFlash NextGen

1. Using the provided tubing, connect the SLCC to the liquid port on the left-hand side panel of the instrument.

2. Remove the screw from the left side of the instrument (Figure 3).

Figure 3. Left instrument panel screw and liquid port locations.

3. Use the screw to secure the metal grounding clip to the instrument, ensuring that the tubing from the instrument to the Solid Load Cartridge Cap is secured firmly to the instrument by the clip (Figure 4).

Figure 4. Grounding clip location.

⚠ WARNING

Ensure the tubing for SLCC is properly grounded before use to dissipate static electricity. Discharges of static electricity could ignite vapors.

⚠ WARNING

Substitution of Tubing
Never substitute the black tubing on Combi*Flash* systems. The black tubing (P/N 023-0503-06) is anti-static. This tubing is required to dissipate static electricity. Discharges of static electricity could ignite vapors.

Preparing Cartridges

Teledyne ISCO's adjustable caps can be used with any type of sample and are effective with low solubility samples. The caps can be used with a variety of Redi*Sep* cartridges. To meet your specific needs, Redi*Sep* disposable cartridges are available empty or prepacked with silica gel, Celite[1] or C18 reversed phase media. After selecting a cartridge, prepare the solid sample.

Preparing a Prepacked Cartridge

1. Dissolve the sample and slowly apply the sample solution onto the absorbent bed of the prepacked cartridge (Figure 5).

2. Continue to *Drying the Cartridge*.

Preparing an Empty Cartridge

1. Adsorb the sample onto loose silica or other suitable media. You may dry the sample media mixture (traditionally using a rotovap) before pouring into the cartridge or later in Step 5.

2. Pour the sample and media mixture into the cartridge (Figure 5).

3. Place a frit (included with the cartridge package) into the cartridge.

4. Push the frit down on top of the sample and media mixture with the push rod included with the SLCC package.

5. If you did not remove the solvent before loading the mixture into the cartridge, continue with *Drying the Cartridge* (see below).
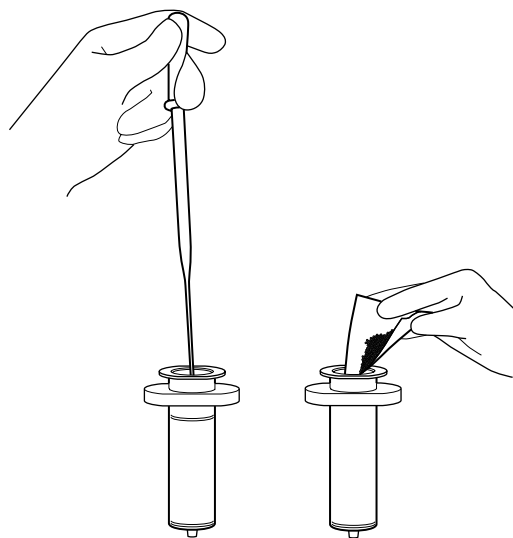

Figure 5. Preparing Cartridges. Pipette sample onto prepacked cartridges (left), or pour adsorbed sample into empty cartridges (right).

Drying the Cartridge

Solvent should be removed from the prepared cartridge. You can do so using a vacuum dryer. Combi*Flash* system users may also use the alternative cartridge drying technique described on page 4.

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1   Celite is a registered trademark of Imerys Minerals California Corporation.

Loading Cartridges

To load the 5, 25, or 65 gram cartridge on the system:

1. The cap must match the size of your selected cartridge. If it does not match, install the correct cap now.

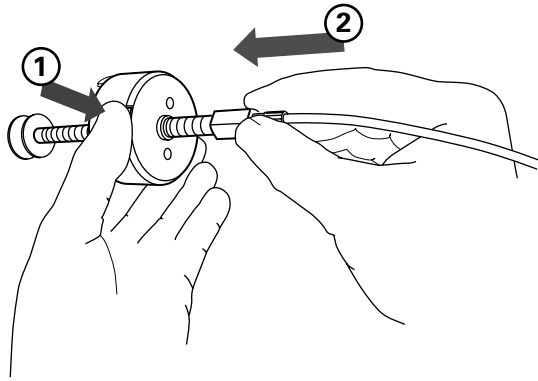2. Press the lever on the side of the cap and fully extend the plunger (Figure 6).

Figure 6. Press the lever and extend the plunger.

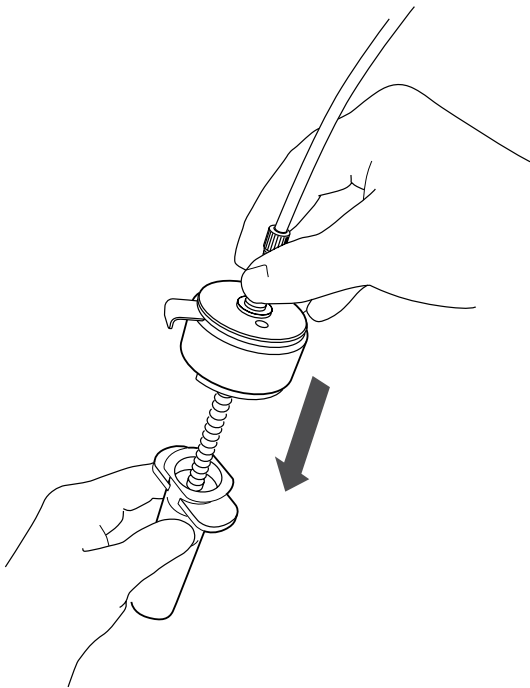3. Slide the plunger into the cartridge until it reaches the top frit (Figure 7).

Figure 7. Insert the plunger to the bed.

NOTE

Illustrations are for general reference only. Actual cap features will vary according to the CombiFlash system and cap size.

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4. Press the lever and push the cartridge into the cap. Align the cartridge so that it fits fully into the recess in the cap (Figure 8).
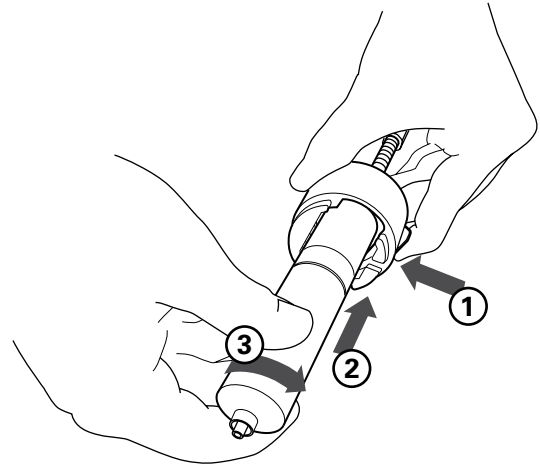
Figure 8. Align and push cartridge into the cap. Then rotate the cartridge to secure it.

5. Rotate the cartridge 1/4 turn to secure the cartridge in the cap (Figure 6).

   • For 5, 25, and 260 gram sizes, rotate the cartridge clockwise.

   • For 65 gram cartridges, rotate the cartridge counterclockwise.

6. Place the cartridge assembly on the system and secure it to the Luer fitting (Figure 9).

7. Connect the SLCC to the liquid port if not already attached.

Figure 9. Secure the cartridge assembly on the system (Combi*Flash* NextGen shown).

Additional Notes for Users of Combi*Flash* System with Solvent Level Sensing

Alternative Cartridge Drying Technique

Combi*Flash* system users also may dry the cartridge using the system's internal air pump. To do so, follow the instructions in on page 2. After connecting the cartridge to the cap in step 5, perform these sub-steps before proceeding with step 6.

a. Place the end of the cartridge in a beaker to capture solvent and any compound that "breaks through" (Figure 10).

b. On the Combi*Flash* system, touch screen panel, select **Tools** > **Manual Control**. This opens the **Manual Control** window.

c. Click the **Air Purge Cartridge** button. Allow the air pump to run until the solvent is removed. The drying time can range from 10 minutes for hexane to 30–45 minutes for methanol.
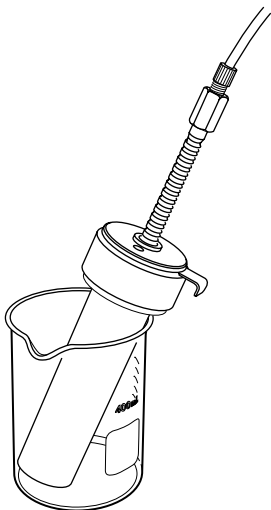

Figure 10. Dry the sample using the internal air pump on the Combi*Flash* system (Optional)

NOTE

The system can automatically perform a post-run air purge to remove solvent from the cartridge and column. Use the Method Editor *window to enter the* Air Purge *duration in minutes.*

Ordering Information

The table below lists catalog numbers for ordering the solid load cartridge caps and disposable RediSep cartridges. To place your order, contact your Teledyne ISCO representative. Or, contact the factory using the information on the back page.

Teledyne ISCO Column Catalog Numbers	
CombiFlash Sample Injection Options	
60-5237-047	Adjustable Solid Load Cartridge Cap (SLCC), fits 2.5 and 5 gram-size Universal sample load cartridges. Includes one loading rod. For use on the CombiFlash systems only (except the Torrent).
60-5237-048	Adjustable Solid Load Cartridge Cap (SLCC), fits 12 and 25 gram-size Universal sample load cartridges. Includes one loading rod. For use on the CombiFlash and Torrent systems.
60-5237-044	Adjustable Solid Load Cartridge Cap (SLCC), fits 32 and 65 gram-size sample load cartridges. For use on the CombiFlash and Torrent systems
60-5247-008	Adjustable Solid Load Cartridge Cap (SLCC), fits 130 and 260 gram sample load cartridges. Includes loading rod. For use on the CombiFlash NextGen with Large Column Stand or Torrent.
60-5247-009	Adjustable Solid Load Cartridge Cap (SLCC), fits 375 and 750 gram sample load cartridges. Includes loading rod. For use on CombiFlash Torrent only.
Empty Disposable Sample Load Cartridges	
69-3873-235	Sample load, RediSep empty cartridges (holds up to 5 grams) package of 30
69-3873-240	Sample load, RediSep empty cartridge (holds up to 25 grams) package of 30
69-3873-225	Sample load, RediSep empty cartridge (holds up to 65 grams) package of 6.
69-3873-201	Sample load, RediSep empty cartridge (holds up to 260 grams) package of 6.
69-3873-224	Sample load, RediSep empty cartridges (holds up to 750 grams), pkg. of 4. For use on the CombiFlash Torrent.
Prepacked Silica Gel Cartridges	
69-3873-238	Sample load, RediSep prepacked silica gel cartridges, 2.5 grams, package of 20
69-3873-236	Sample load, RediSep prepacked silica gel cartridges, 5 grams, package of 20
69-3873-243	Sample load, RediSep prepacked silica gel cartridges, 12 grams, package of 15
69-3873-241	Sample load, RediSep prepacked silica gel cartridges, 25 grams, package of 15
69-3873-310	Sample load, RediSep prepacked silica gel cartridges, 32 grams, package of 12
69-3873-226	Sample load, RediSep prepacked silica gel cartridges, 65 grams, package of 12.
69-3873-202	Sample load, RediSep prepacked silica gel cartridges, 260 grams, package of 4. For use on the CombiFlash Torrent.
Frits	
60-5237-052	Package of 150 frits, 5 gram
60-5237-053	Package of 100 frits, 25 gram
60-5237-054	Package of 75 frits, 65 gram

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