Empty EasyVarioFlash®

Cartridge size	Sample Weight	Silica Needed for DL	Recommend main cartridge	Nominal Flow Rate	Maximum Pressure
D17 5g	1-3g	4g	10-100g	18 ml/min	10 bar
D17 10g	2-5g	9g	100-200g	18 ml/min	10 bar
D17 15g	3-8g	14g	150-300g	18 ml/min	10 bar
D24 20g	4-10g	18g	200-400g	36ml/min	10 bar
D24 30g	6-15g	27g	300-600g	36ml/min	10 bar
D31 40g	8-20g	37g	400-800g	60ml/min	10 bar
D31 50g	10-25g	46g	500g-1kg	60ml/min	10 bar
D31 70g	14-35g	66g	700g-1kg	60ml/min	10 bar
D44 80g	16-40g	76g	800g-1,6kg	120ml/min	7 bar
D44 100g	20-50g	96g	1,0-2,0kg	120ml/min	7 bar
D44 130g	26-65g	126g	1,3-2,6kg	120ml/min	7 bar
D44 150g	30-75g	145g	1,5-3,0kg	120ml/min	7 bar

Dry Loading in an empty cartridge can be prepared in two ways :

- **By using the weight of silica mentioned in the above table :**
  1. Select the cartridge adapted to the weight of sample to purify.
  2. Prepare the Dry Loading with the indicated weight of **Si60 40-63µm** silica.
  3. Add Dry Loading in the cartridge. Tap gently to settle down silica.
  4. Put filter (smooth) then frit (rigid), and use cap (without o-ring) to push filter + frit in contact with silica.
  5. Remove cap, add o-ring, and screw cap without excess

- **By using a smaller quantity of Dry Loading than needed :**
  1. Prepare Dry Loading with 1,5-2,0 g of **Si60 40-63µm** silica per gram of sample.
  2. Select the adapted cartridge size, and add Dry Loading.
  3. Complete with Fontainebleau Sand (or Celite®) until reaching the screwing of the cartridge. Tap gently to settle down silica.
  4. Insert filter (smooth) then frit (rigid), and use cap to bring them in contact with the sorbent.
  5. Remove cap, add o-ring, and screw cap without excess.

Dry Loading cartridge can then be used as a pre-column in front of the ready-to-use cartridge, adapted to the quantity of sample to purify. See above table to determine the size of this cartridge.
Ideally, condition the Dry Loading cartridge with non-eluting solvent, prior to connecting it on the already conditioned main cartridge.

NB : Si60 40-63µm silica (instead of 15-40µm) is recommended for this use, to limit the overall pressure, and enable to work with a Si60 15-40µm main cartridge at nominal flowrate.

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EasyVarioFlash®

User Manual

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- **Fast Flash mode**
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EasyVarioFlash® for Liquid Injection

Cartridge size	Bed Height	Column Volume	Average loading	Maximum Injection Volume	Nominal Flow Rate	Fast flash Flow Rate	Maximum Pressure
D17 5g	40mm	7ml	150 mg	0,5 ml	18 ml/min	18-36ml/min	10 bar
D17 10g	80mm	15ml	300 mg	1 ml	18 ml/min	18-36ml/min	10 bar
D17 15g	120mm	22ml	450 mg	1,5 ml	18 ml/min	18-36ml/min	10 bar
D24 20g	80mm	29ml	600 mg	2 ml	36ml/min	36-72ml/min	10 bar
D24 30g	120mm	43ml	900 mg	3 ml	36ml/min	36-72ml/min	10 bar
D31 40g	96mm	58ml	1,2 g	4 ml	60ml/min	60-120ml/min	10 bar
D31 50g	120mm	73ml	1,5 g	5 ml	60ml/min	60-120ml/min	10 bar
D31 70g	156mm	102ml	2,1 g	7 ml	60ml/min	60-120ml/min	10 bar
D44 80g	96mm	116ml	2,4 g	8 ml	120ml/min	120-240ml/min	7 bar
D44 100g	120mm	145ml	3,0 g	10 ml	120ml/min	120-240ml/min	7 bar
D44 130g	156mm	189ml	3,9 g	13 ml	120ml/min	120-240ml/min	7 bar
D44 150g	180mm	218ml	4,5 g	15 ml	120ml/min	120-240ml/min	7 bar

- Select cartridge's size according to the above table (average loading corresponds to 3% sample weight / cartridge's silica weight).
- If sample can not be dissolved in less than the maximum injection volume of starting eluent (see above table), we recommend to do a Dry Loading.
- Condition cartridge until temperature of solvent on exit has come back to nominal temperature (around 3 minutes at nominal flow rate).
- Inject the sample, and start the run.

Adapt the flow rate so as NOT to exceed the maximum pressure.

- NB : Do not dissolve and inject the sample in a very eluent solvent, as it will cause separation problem and/or precipitation.
  If the sample is not soluble in the starting eluent composition, we advise to do a Dry Loading.

Fast Flash mode

When packed with our Si60 15-40µm silica, EasyVarioFlash® cartridges can be run above the nominal flow rate, without loss of efficiency, purity and yield.
Depending of the solvent's viscosity, and of the cartridge's bed height, the flow rate can be increased by up to a factor 2x, reducing by the same factor the duration of the run.

NB : Adapt the flow rate so as NOT to exceed the maximum pressure !

Dry Loading

Dry Loading silica can be packed :

- Either in a special DL cartridge, already containing the silica needed for the purification.
- Either in a small empty cartridge that will be used as a Dry Loading pre-column, together with a bigger cartridge containing the silica needed for the purification.

EasyVarioFlash® DL for Dry Loading

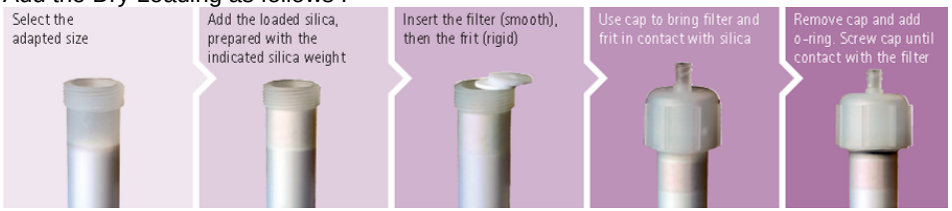
Cartridge size	Silica Needed for DL	Average Sample loading	Nominal Flow Rate	Fast flash Flow Rate	Maximum Pressure
D17 9g DL	1 g	300 mg	18 ml/min	18-36ml/min	10 bar
D17 14g DL	1,5 g	450 mg	18 ml/min	18-36ml/min	10 bar
D24 18g DL	2 g	600 mg	36 ml/min	36-72ml/min	10 bar
D24 27g DL	3 g	900 mg	36ml/min	36-72ml/min	10 bar
D31 36g DL	4 g	1,2 g	36ml/min	60-120 ml/min	10 bar
D31 45g DL	5 g	1,5 g	60ml/min	60-120ml/min	10 bar
D31 63g DL	7 g	2,1 g	60ml/min	60-120 ml/min	10 bar
D44 72g DL	8 g	2,4 g	60ml/min	120-240ml/min	7 bar
D44 90g DL	10 g	3,0 g	120ml/min	120-240ml/min	7 bar
D44 117g DL	13 g	3,9 g	120ml/min	120-240ml/min	7 bar
D44 135g DL	15 g	4,5 g	120ml/min	120-240ml/min	7 bar

NB : EasyVarioFlash® DL cartridges can NOT be used without adding a Dry Loading, as the cap would then not come in contact with the frit, causing a dead volume and risks of leaks.

For best results, we recommend to condition the cartridge before adding the Dry Loading :

- Put o-ring on the cap groove, and screw the cap on cartridge, until resistance is felt and o-ring is pressed against the wall..
  A dead volume will remain between cap and silica.

- Condition the cartridge, then unscrew cap and remove solvent + o-ring.
- Add the Dry Loading as follows :



- Start the elution with 1 CV of starting, low eluting solvent.

If starting solvent does not elute the sample, pre-conditioning of the cartridge can be avoided, and Dry Loading added directly on a dry cartridge. Nevertheless, we advise to pre-condition.