ENVIRONMENTAL EXPRESS®
a Cole-Parmer company

Oil & Grease FAQs

Can I connect 2 manifolds together on the StepSaver?
Yes, this is often done to expand capacity or for space issues. When you go to connect the 2 manifolds, replace the PVC nut in one of the manifolds with the C6160 PVC hose barb. Then by cutting off a small length of tubing that goes from the manifold to the pump, connect from the single barb on one manifold to one of the two barbs on the other manifold. The remaining barb connects to the pump.

I cannot remove my extraction head from the manifold. How can I get it unstuck?
Unscrew the male taper from the manifold. Place the taper with extraction head attached in a freezer for approximately 20 minutes. The taper will contract enough for the glass extraction head to slip off easily.

The Oil & Grease standard has visible material floating in the solution. How can I get it back into solution?
The floating material is stearic acid and it is important for it to be in solution because it will affect recoveries. The stearic acid will return to solution by slightly warming the standard. One can simply warm the vial or tube by holding in your hands for 2 or 3 minutes or leaving on the counter at room temperature for 5 – 10 minutes. The standard should never be heated by any other external heating source as it is flammable.

Can I evaporate the hexane to dryness in the G1045 flask by placing it in an oven or water bath?
The hexane should not be evaporated to dryness in a closed environment as it is very flammable and could result in an explosion. The recommended method of evaporating the hexane is by using air flow by vacuum tube, such as our QuikVap system.

How much vacuum is required to adequately pull the sample through the extraction disk?
We recommend that the vacuum pump be rated to pull 25 inches of mercury. We offer the G3050 which meets this specification.

Can the extraction disks be re-used?
The UltraLow, UltraFlow, UltraPrep, and 3M disks are recommended for one-time-use only. Reusing the disks will affect recoveries.

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I am getting exactly ½ of the true value of my standard—why?
Check the temperature of the QuikVap or other heating device. The method states to evaporate the hexane at a temperature of 60-70°C. We recommend using a lower temperature (i.e. 45°C) Any hotter you will lose the more volatile component, hexadecane, from the standard and yield low recoveries.

My manifold is leaking by the vacuum valve when I direct the filtration to waste--why?
You must open the vacuum valve on the manifold prior to turning the StepSaver stopcock to the waste side. This will prevent any leaks through the vent hole in the manifold.

My manifold is leaking between the glass funnel and extraction head--why?
If leaking is occurring between the glass reservoir and extraction head, the clamp may not be attached correctly. The rear portion of the clamp should NOT be allowed to press against the glass.

What trouble shooting steps should I follow if I am experiencing low recoveries?

- Acidify the sample to a pH <2. Even a DI Blank will not filter properly without being acidified.
- Perform the analysis when the samples are at room temperature. Flocculation can occur with cold water. Once the stearic acid flocs out, it is very difficult to dissolve back into solution.
- Perform the analysis when the Snip and Pour Standards are at room temperature. If they are stored in the refrigerator (not required), then allow time for them to warm to room temperature. If analysis is performed with cold standards, some of the stearic acid may fall out of solution giving a cloudy appearance and causing low recoveries.
- Use fresh and good quality reagents. If you do not activate the disk with FRESH methanol not only will the disk not absorb the Oil and Grease, it will not filter completely. Methanol can go bad quickly once opened, so this reagent should be changed out frequently. An alternative is to use the UltraPrep filter disks.
- Initially rinse the disk with n-Hexane. An initial rinse with n-Hexane MUST be done prior to adding the Methanol for activation.
- Vacuum for at least 10 minutes after the sample appears dry. You may not see any liquid coming out, but it is. Drops at a time add up.
- Check the temperature of the QuikVap or other heating device. You should be evaporating the hexane at a temperature of 60-70°C. Any hotter you will lose the more volatile component, hexadecane, from the standard and yield low recoveries.