

Heated Injector/Thermal Desorber

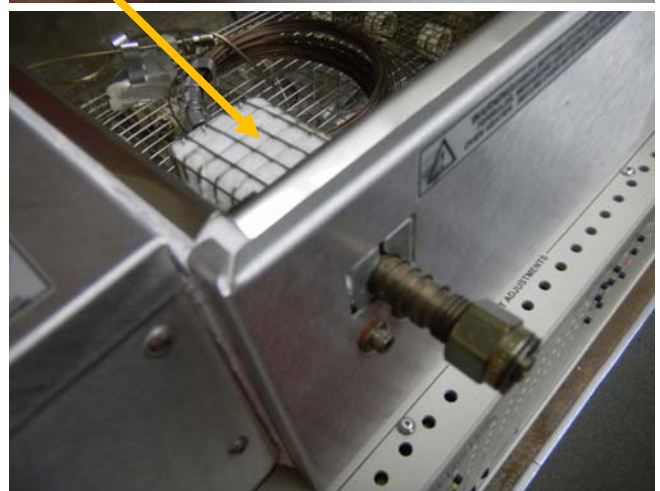
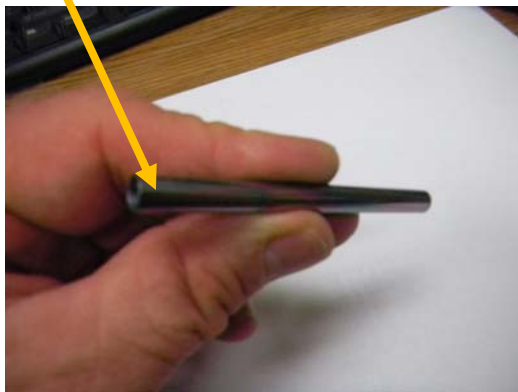
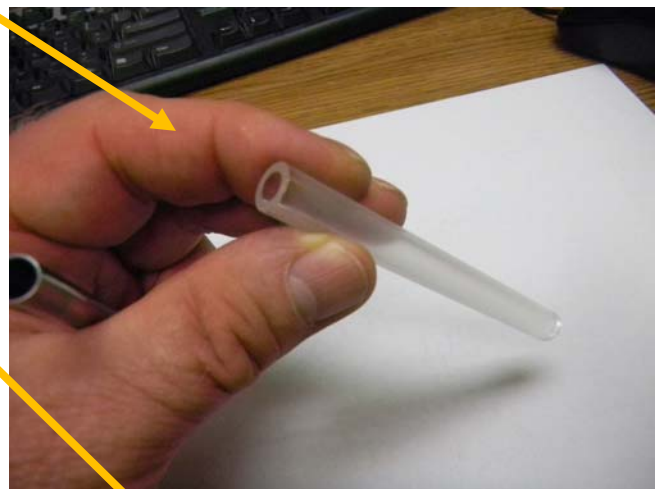
June2016

SRI has in the past configured a Thermal Desorber using a Valco valve and a heated aluminum block which was mounted in the valve oven as shown.

The “old style” Thermal Desorber (TD) used a glass tube which was secured in the TD with graphite ferrules.

The “ new” style TD utilizes the regular Heated Injector and a special Stop-Flow solenoid (Relay A) to turn the carrier gas flow to the Heated Injector on and off, under control of the PeakSimple Data System. The Thermal Desorber tubes used on the “new” style TD are the same Silco-Sleeve liners used in the Heated Injector.

SRI part#8670-1034 Thermal Desorber Tube



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Plug one end of a TD tube with glass wool.



Weigh the tube and then tare the balance.



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Put your soil, plant material or other solid sample in the TD tube. You can adjust the weight from .05 to 1 gram.

Weigh the tube again and record the weight of the solid sample.

Put another plug of glass wool in the TD tube to keep the sample from spilling out.



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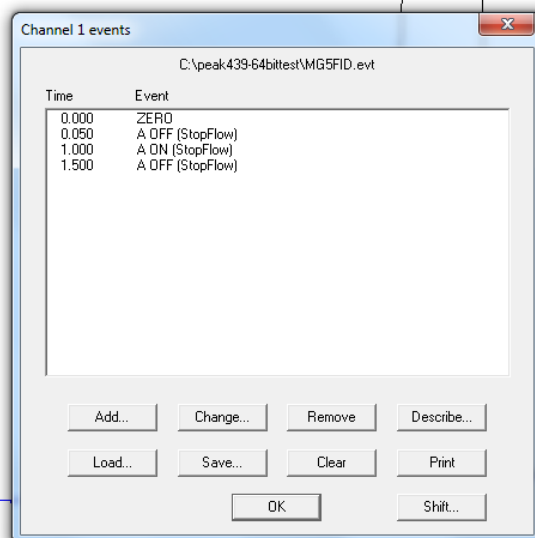
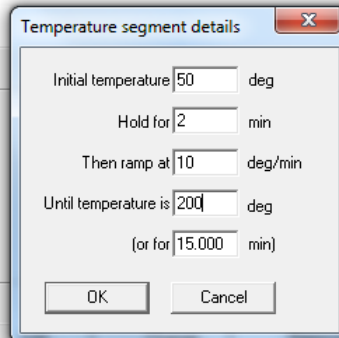
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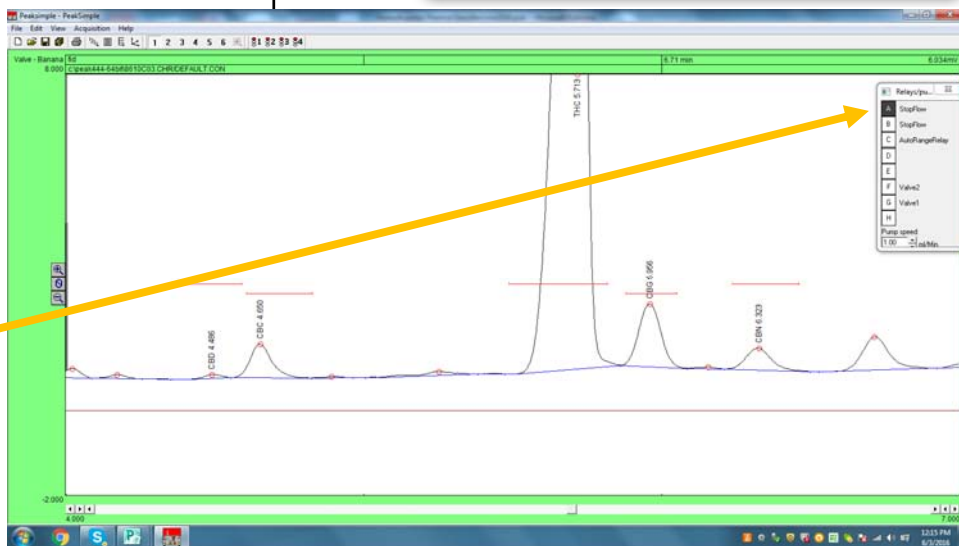
Enter a temperature program in PeakSimple which starts at a low temperature (40-50C).

This is required when using the TD because the molecules which evolve from the solid sample come off gradually. It is necessary to “focus” the peaks on the coldest possible column to make sure the peaks are sharp.

Enter an Event table like this in PeakSimple channel 1. Relay A turns the carrier gas going to the TD on and off. When Relay A turns ON, the carrier gas is OFF.



Before loading the packed sample tube into the TD, turn Relay A ON manually by clicking here on the View/Relay/ Pump window.



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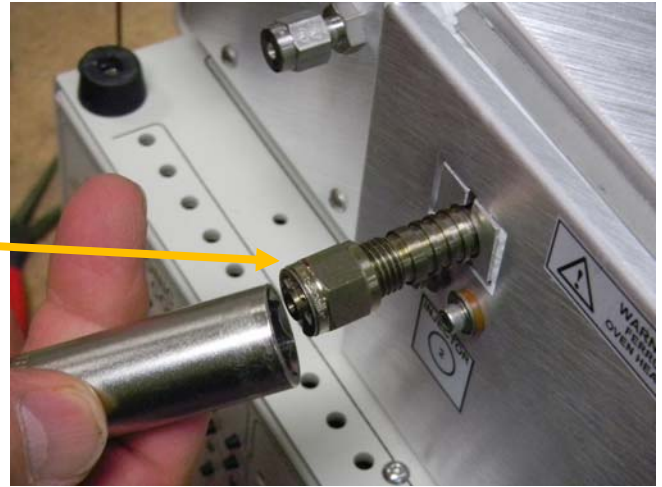
With Relay A ON (carrier gas OFF), use a tool such as a socket to remove the Septum nut.

Careful, it will be HOT. Typically the Heated Injector is set to 200C.

Slide in the packed TD tube. Notice that the "gash" in the tube is out towards the operator.

Use the tool to re-attach the septum nut.

Do not over-tighten it.



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Start the analysis with Relay A still ON.

At .05 minutes PeakSimple will turn Relay A off (carrier gas ON). This is when the Thermal Desorption starts, as without carrier flow no molecules can leave the TD tube.

You have to stand next to the GC for 1 minute without getting distracted.

At 1 minute, Relay A turns ON again for 30 seconds. During this period of time the operator must remove the TD tube from the Heated Injector and re-attach the septum nut.

Some customers use PeakSimple's Sound event to make a sound at this time to remind them.

Careful, its very HOT, so use a needle nose pliers or other tool to remove the HOT TD tube and place it somewhere safe to cool.

Put the septum back on before the time gets to 1.5 minutes when the carrier gas flow turns back on.

The chromatogram of the thermally desorbed molecules then proceeds normally.

Time	Event
0.000	ZERO
0.050	A OFF (StopFlow)
1.000	A ON (StopFlow)
1.000	SOUND
1.500	A OFF (StopFlow)



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