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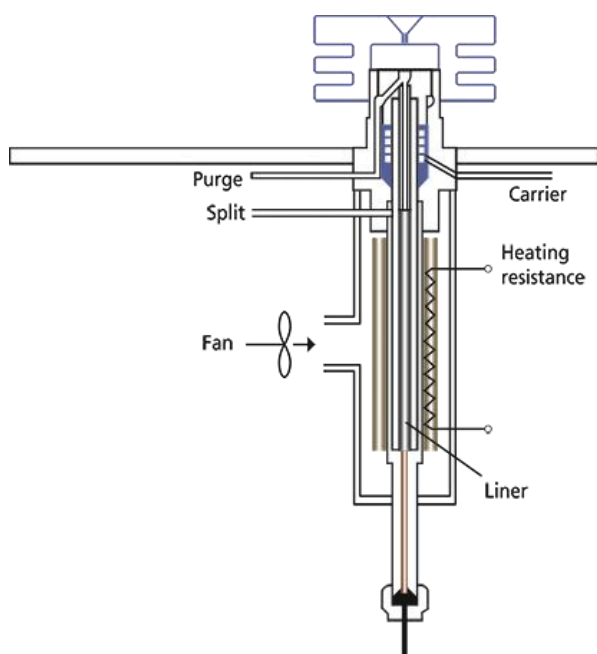
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## Программируемый температурный испаритель PTV



### Programmable Temperature Vaporizer – PTV

The proprietary PTV is particularly suggested when high sample integrity is requested. The sample is introduced by cold injection followed by vaporization eliminating possible sample discrimination or degradation.

The PTV achieves extremely fast heating rates of up to 1,000°C/min and rapid cool down with ambient air. Cryogenic cooling options using either CO<sub>2</sub> or N<sub>2</sub> are also available for highly specific applications.

After injection, the PTV can be programmed to decrease the split flow and save carrier gas. Moreover, the DFC adjusts the carrier gas flow providing ambient temperature and pressure compensation. In addition, the injector septum is purged by a constant flow to avoid carry-over effects.

The versatile PTV injector is Fast GC compatible and supports up to four injection techniques: split, splitless, solvent split, or pulsed injections. Moreover, the dimensions of the standard PTV liner are ideal for direct SPME fiber introduction and desorption, taking advantage of the injectors performance characteristics.

For specific applications requiring pre-concentration or refocusing of gaseous samples, liners filled with sorbent materials are also available

The programmed-temperature vaporization inlet (PTV), introduced for the first time by DANI Instruments in 1981, is a modified split-splitless inlet: the difference is that it is kept cool during sample introduction and then rapidly heated to transfer the injected sample into the column.

The PTV inlet can operate in three modes:

- Cold split mode
- Cold splitless mode
- Solvent split (or preconcentration) mode

In the cold split and cold splitless modes, the cool temperature during the injection offers two main advantages compared to hot split and splitless injection: it eliminates syringe needle discrimination and minimizes degradation of thermally labile compounds.

The solvent split mode is a unique feature of the PTV inlet and offers the capability to inject large sample volume (Large Volume Injection) and operate as a preconcentrator.

In this technique, the sample is injected all at once or with repetitive injections while the inlet is cold and the split vent open: the solvent evaporates and is vented to the outlet. As soon as most of the solvent is eliminated (about 95%), the split exit is closed and the inlet temperature increased to transfer the remaining sample into the capillary column.

When the transfer is completed, the split vent is opened again to clean the inlet. The column temperature programming is performed as in splitless mode to accomplish band focusing at the front of the column.

As in splitless mode, a certain difference in volatility between the solvent and the early eluting component is necessary.

In addition, the inlet glass liner can be packed with a suitable sorbent material to improve liquid sample capacity or to act as a column pre-concentrator for gaseous samples.

The initial temperature of the PTV can be also lowered to sub-ambient temperature with an optional cryogenic cooling device to improve its concentration capability towards volatiles compounds.

#### По вопросам продажи и поддержки обращайтесь:

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