40 YEARS ANALYTICAL SOLUTIONS GERSTEL

GERSTEL

Cooled Injection System
CIS

GERSTEL Cooled Injection System - internationally the most frequently used universal inlet, with patented septumless sampling head.

Gas chromatographic analysis is now more versatile, reproducible and has lower detection limits than ever before, thanks to temperature programmed sample injection using the GERSTEL Cooled Injection System.

The GERSTEL CIS provides two essential system-functions:

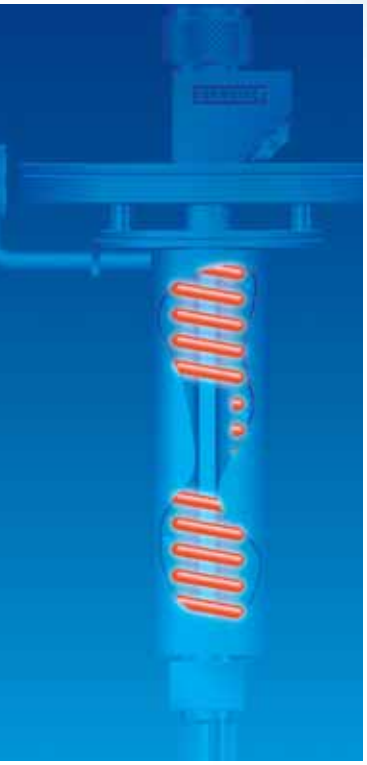
1. Universal injection system for all injection techniques: split, splitless, on-column and large-volume up to 1000 µl.
2. Cryotrap enrichment systems in combination with sample preparation systems, for example, the GERSTEL ThermalDesorption System TDS or the GERSTEL Multi-Purpose Sampler MPS.

The main advantages:

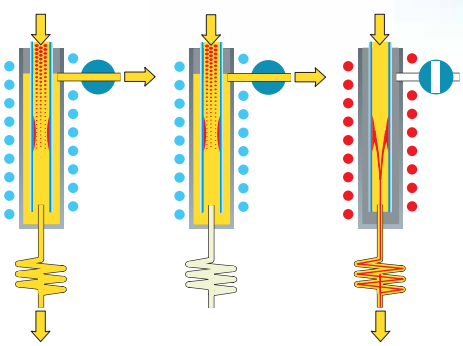
- **Seven modes of injection with one inlet**
- **Eliminates thermal discrimination**
- **Reduces decomposition of thermally labile compounds**
- **Lowers detection limits**
- **Optimum interface for liquid, gas and solid sample introduction systems**
- **Ideal cryogenic sample concentrator in split, splitless, and large volume injection modes.**
- **Allows high desorption flow in splitless sampling mode with TDS**

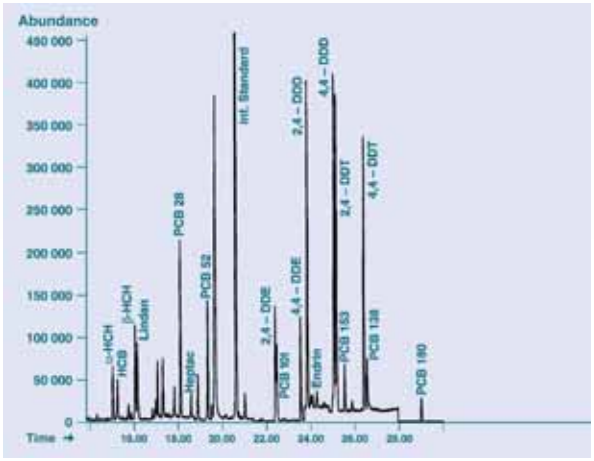
10 important reasons why you should choose a GERSTEL CIS

1. Universal inlet
2. Septumless sampling head
3. Patented heating system
4. LCO2, LN2 or patented Peltier cooling
5. Elimination of solvent peak
6. Large volume injection of up to 1,000 µl
7. Selective extraction of high or low boiling compounds
8. Control by means of GERSTEL-MAS* controller
9. Can be retrofitted to existing GCs
10. Uses GERSTEL-GRAPHPACK® technology



Patented heating system provides homogeneous, linear- programmable inlet body heating which guarantees optimum performance for all injection applications

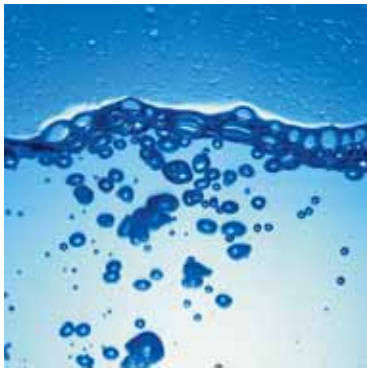




600 ml PCB pesticide standard
Injection temperature: 25°C
Solvent extraction/masking with Stop Flow
Total flow: 200 ml/min.
Injection speed: 115 ml/min.
30 m x 0.25 mm x 0.25 mm HP-5 MS

** MAS = Modular Analytical Systems*

- Only *one* inlet for all injection techniques
- *No contamination* by septum particles; no loss of analytes from septum bleed; low-maintenance
- *Optimal transfer* of analytes to the column, even thermally labile substances, due to programmable linear heating; improved separation performance due to resulting small peak band width
- *Fast operation cycle time;* cost-effective Peltier cooling eliminates need for coolants when very low temperatures are not needed.
- *Better chromatographic separation;* protection of the capillary column and detection systems
- *Reduced detection limits* and time savings due to less sample preparation time
- *Selective transfer of components to the column*
- *Cost-effective system upgrades* to other GERSTEL modules
- Suitable for almost *all GC models;* a new GC is not required
- *Reduces system leaks and maintenance; extends column life and increases sample throughput.*



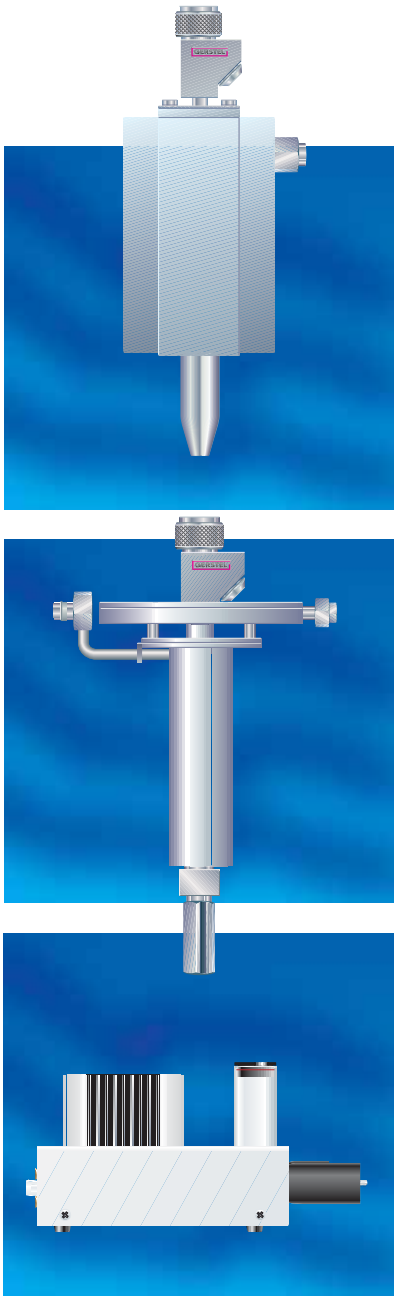
CIS on-column injection insert

Polywax 655
On-column injection at 30°C
With 0.5°C/s ô 400 °C
12 m x 0,53 mm x 0,15 µm HT5

There are three different GERSTEL Cooled Injection Systems available:

The GERSTEL Cooled Injection Systems CIS 3 and CIS 4 are compatible with almost all gas chromatographs on the market, and permit septumless, cooled injection of diluted or undiluted samples of up to 1,000 µl. The three versions can be retrofitted in existing gas chromatographs.

The GERSTEL MAS Basic Controller is supplied with each CIS system. The controller allows easy expansion to other GERSTEL systems by simply inserting the appropriate system board.



❶ GERSTEL CIS 3

Basic version of the GERSTEL Cooled Injection System, equipped with a patented Peltier-cooling source. LCO2 and LN2 cooling are available as options. The CIS 3 can be integrated into or retrofitted in almost all GC models.

❷ GERSTEL CIS 4

Modified version of the CIS, equipped with LCO2 or LN2 cooling as standard. Whichever cooling technique is not supplied as standard, can be obtained as an option. The CIS 4 is designed specifically for the 6890 and 6850 gas chromatographs from Agilent Technologies and can be retrofitted to these models. As option, the CIS 4 can be retrofitted with patented Peltier cooling, if it is frequently used for applications where external coolants are not required.

❸ GERSTEL CIS 4 PLUS

This version of the CIS 4 is equipped with patented Peltier cooling as standard. It is intended primarily for applications that do not require external coolants. Retrofitted LCO2 or LN2 cooling is available as an option for special applications.

GERSTEL MAESTRO Software

Software for programming methods and sequences for all GERSTEL modules and systems, fully integreted with Agilent GC and MSD ChemStation.

- MS Windows NT/2000/XT-compatible
- Automatic hardware detection

Agilent Technologies
Premier Solution Partner

ZERTIFIZIERTES QM-SYSTEM NISZERT GERSTEL ISO 9001:2000 ZERTIFIKAT NR. 0086 D