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MAKING LABS WORK

GERSTEL – Vacuum In Tube Extraction

V-ITEX

Automated vacuum extraction for GC-MS analysis, simplified

GERSTEL V-ITEX is an innovative, fully automated, vacuum-based extraction method developed by Agroscope (Switzerland) for determining volatile organic compounds (VOCs) in complex matrices using GC-MS.

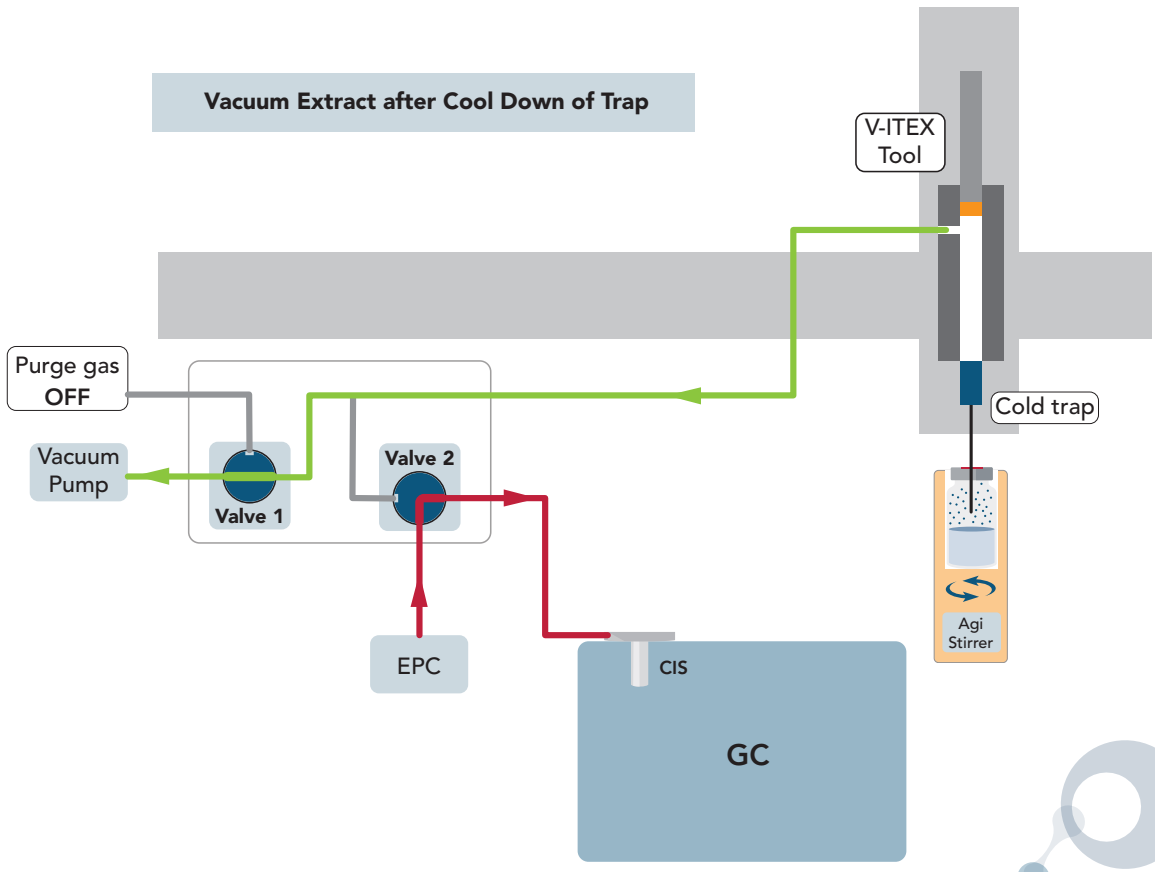
Using a controlled vacuum, V-ITEX enables gentle extraction and enrichment even from temperature-sensitive and complex matrices – without heating, with virtually no solvent consumption, and with maximum reproducibility.

After enrichment, the analytes are directly transferred to the GC-MS system, providing extremely low detection limits with high precision and accuracy.

Challenges of VOC extraction

Many laboratories face the same problems when extracting VOCs:

- **Time-consuming and labor-intensive methods**
  such as SAFE or Likens-Nickerson demand valuable resources
- **High solvent consumption**
  incurs costs and jeopardizes occupational safety in the laboratory
- **Non-volatile components**
  cannot be analyzed using conventional headspace GC-MS methods
- **Artifact formation and falsified results**
  due to the heating of temperature-sensitive samples



Features

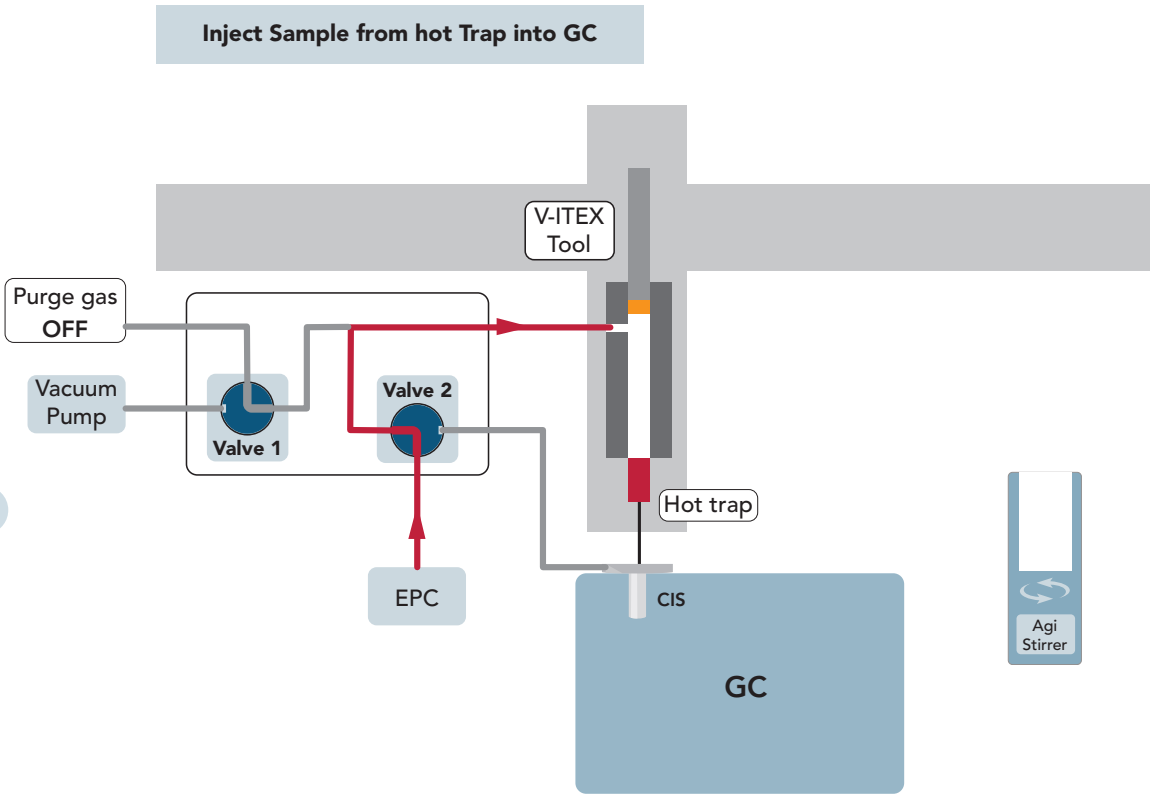
- **Gentle VOC extraction**
  of thermally labile analytes using vacuum and no heat
- **Automatic enrichment and water management**
  with the GERSTEL MultiPurposeSampler (MPS) and the V-ITEX module
- **Direct desorption of the trap**
  utilizes GC carrier gas stream

Areas of application

- **Flavor analysis**
  in dairy products, beverages, fermented foods
- **Nutritional volatolomics**
  VOC profiles in food and biological fluids
- **Temperature-sensitive foods**
  such as fresh food, milk, soy milk, and oat milk
- **Research**
  in the field of volatolomics and VOC metabolomics

Highlights

- **Efficient drying**
  enables total evaporation even of aqueous samples for improved recovery of polar compounds
- **Simple and robust automation**
  for unattended, worry-free operation
- **GERSTEL Agitator Stirrer (AGI^{stir})**
  enables parallel incubation of multiple samples for higher throughput
- **Vacuum-controlled pump (Vacuubrand)**
  for reproducible results
- **Seamless integration**
  into almost any GC or GC-MS through GERSTEL ePneumatics
- **Agilent MassHunter Acquisition Software Integration**



Patents and certificates

- Patent title: "Novel Dynamic Headspace Vacuum Transfer "in Trap" Extraction Method and Apparatus for its Performance"
- Swiss patent PCT /CH2019/000002
- International patents: EP3921631 and US20220018740

Discover now:

For more information on how V-ITEX can support your analysis, visit us online at www.gerstel.com, talk to your GERSTEL contact person, or call us at: +49 (0)208 - 7 65 03 0.

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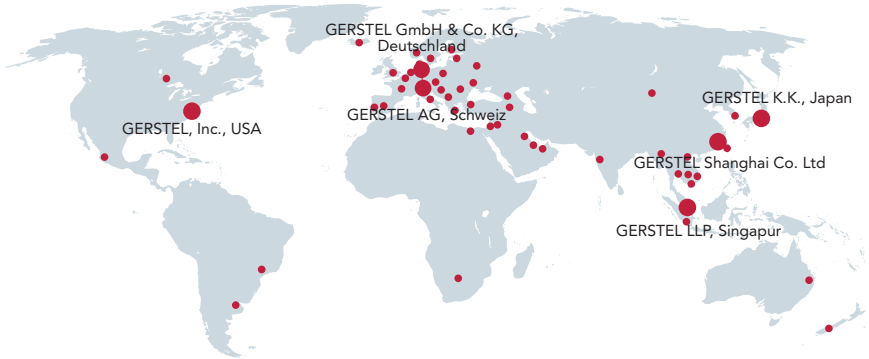

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