

SPDE™

EXTRACTION COOLER

A SPDE Option for Volatile Compounds

Since the introduction of SPDE™, many users have expressed interest in being better able to extract volatile substances. Since the SPDE syringe needle usually works at ambient temperatures or higher during extraction, volatile substances are poorly extracted compared to less volatile compounds.

However, SPDE™ can successfully perform extractions of high volatiles by means of intensive needle cooling!

By using the SPDE Extraction Cooler, highly volatile components can easily be extracted without any problem. Figure 2 shows a schematic drawing of the extraction cooler, using a Peltier-cooler for the SPDE needle.

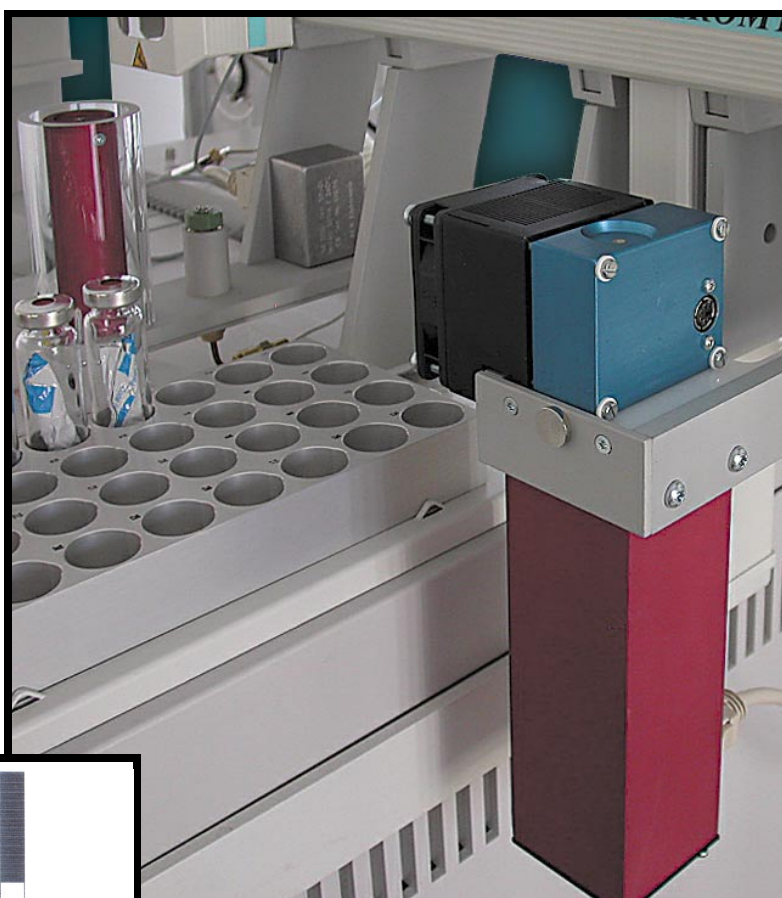


Fig. 1. The SPDE Extraction Cooler is simply mounted on top of a Single Magnet Mixer. The SPDE needle penetrates the vial only by a few millimeters

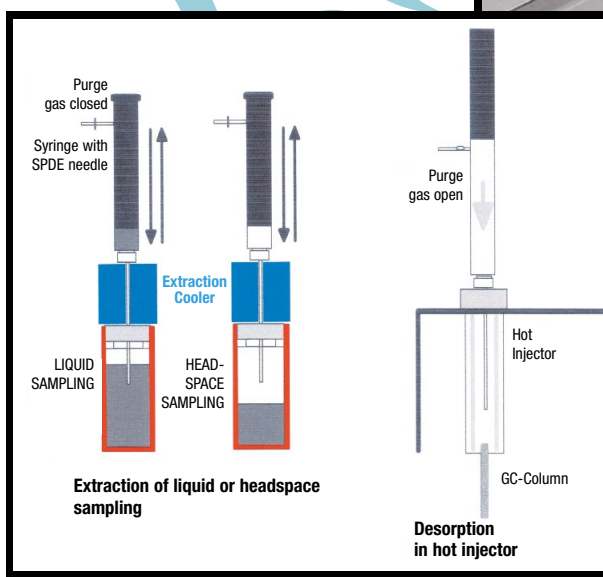


Fig. 2: Principle of the automated SPDE extraction. The analyte is enriched by controlled pumping through the specially coated syringe needle. The analyte is cold trapped inside the SPDE needle, then thermally desorbed. During enrichment, the sample is heated while the needle is cooled.

The cooler is mounted on top of the CHROMTECH Single Magnet Mixer as shown in fig. 1 and reaches temperature differences of up to 40°C. This means that the needle can cool down to -15°C while working at an ambient temperature of 25°C.

Features

- ▶ For volatile components
- ▶ VOCs in drinking water
- ▶ Sample heating and needle cooling simultaneously
- ▶ Easily mounted
- ▶ Retrofittable for all Single Magnet Mixers (SMM)
- ▶ Peltier-cooling
- ▶ Working range up to 40°C below ambient temperature

SPDE™ Extraction Cooler

Applications:

- Automatic extraction and detection of VOCs using SPDE™ GC/MS, SPDE™ Extraction Cooler and Split-/Splitless Injector (SP404e)

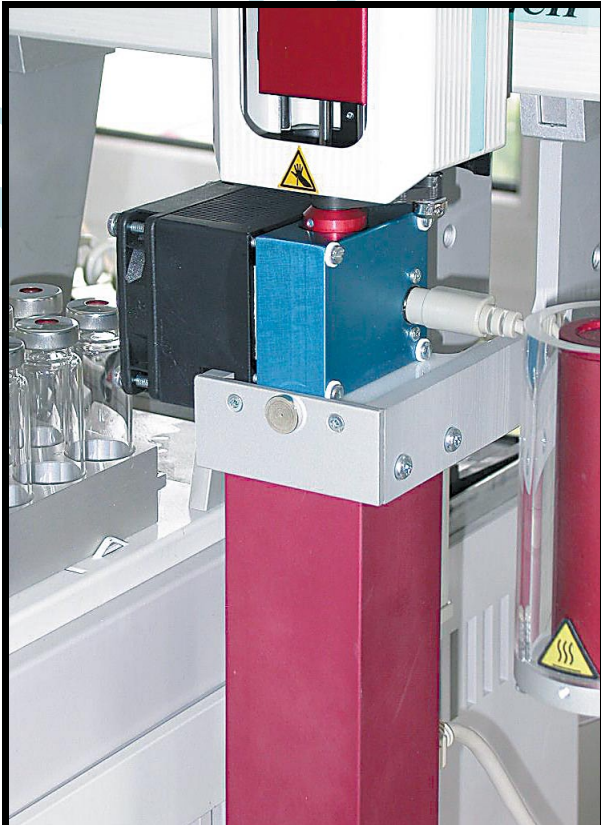


Fig. 3: SPDE Extraction Cooler attached to the top of a Single Magnet Mixer

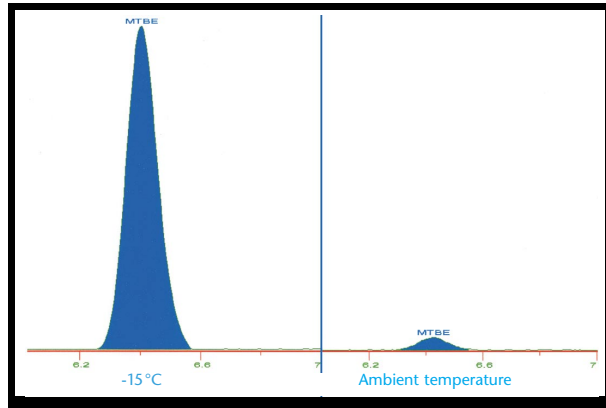


Fig. 4 Shows 0,9 µg/L of MTBE upon being trapped by the SPDE Extraction Cooler at -15 °C and MTBE without cooling (right) at approx. 25 °C. Each sample was incubated at 50 °C.



Fig. 5: SPDE Extraction Cooler with control unit and Single Magnet Mixer

Description

SPDE Extraction Cooler for use with a Single Magnet Mixer (SMM)

Requires SPDE needles with 74 mm length.
Temperature range up to 40 °C below ambient temperature

Consisting of:

- Extractor Cooler with Peltier cooling
- Temperature regulator
- Power supply

Part Number

CT-Extr Cooler

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