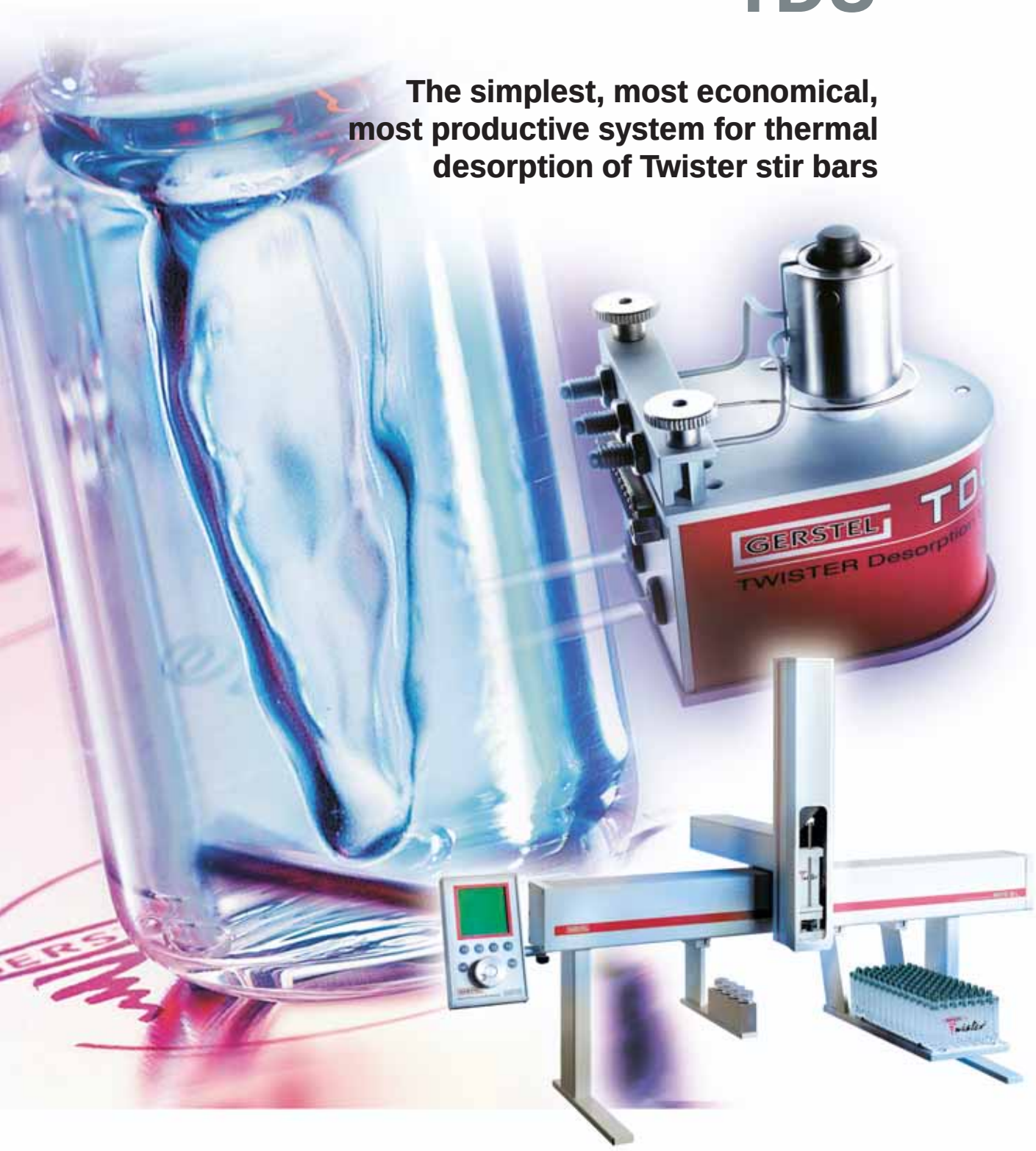
40 YEARS ANALYTICAL SOLUTIONS GERSTEL

GERSTEL

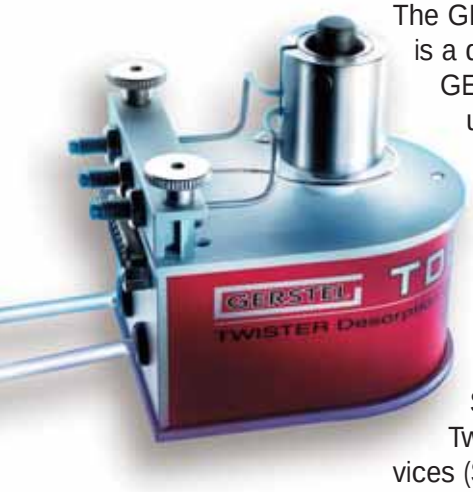
GERSTEL Twister®-DesorptionUnit

TDU

The simplest, most economical, most productive system for thermal desorption of Twister stir bars



GERSTEL Twister® Desorption Unit TDU



The GERSTEL Thermal Desorption Unit (TDU) is a dedicated instrument for use with GERSTEL Twister stir bars. The TDU is used with the GERSTEL Cooled Injection System (CIS) on a GC or GC/MS system to enable ultra-trace analysis of aqueous and other liquid samples.

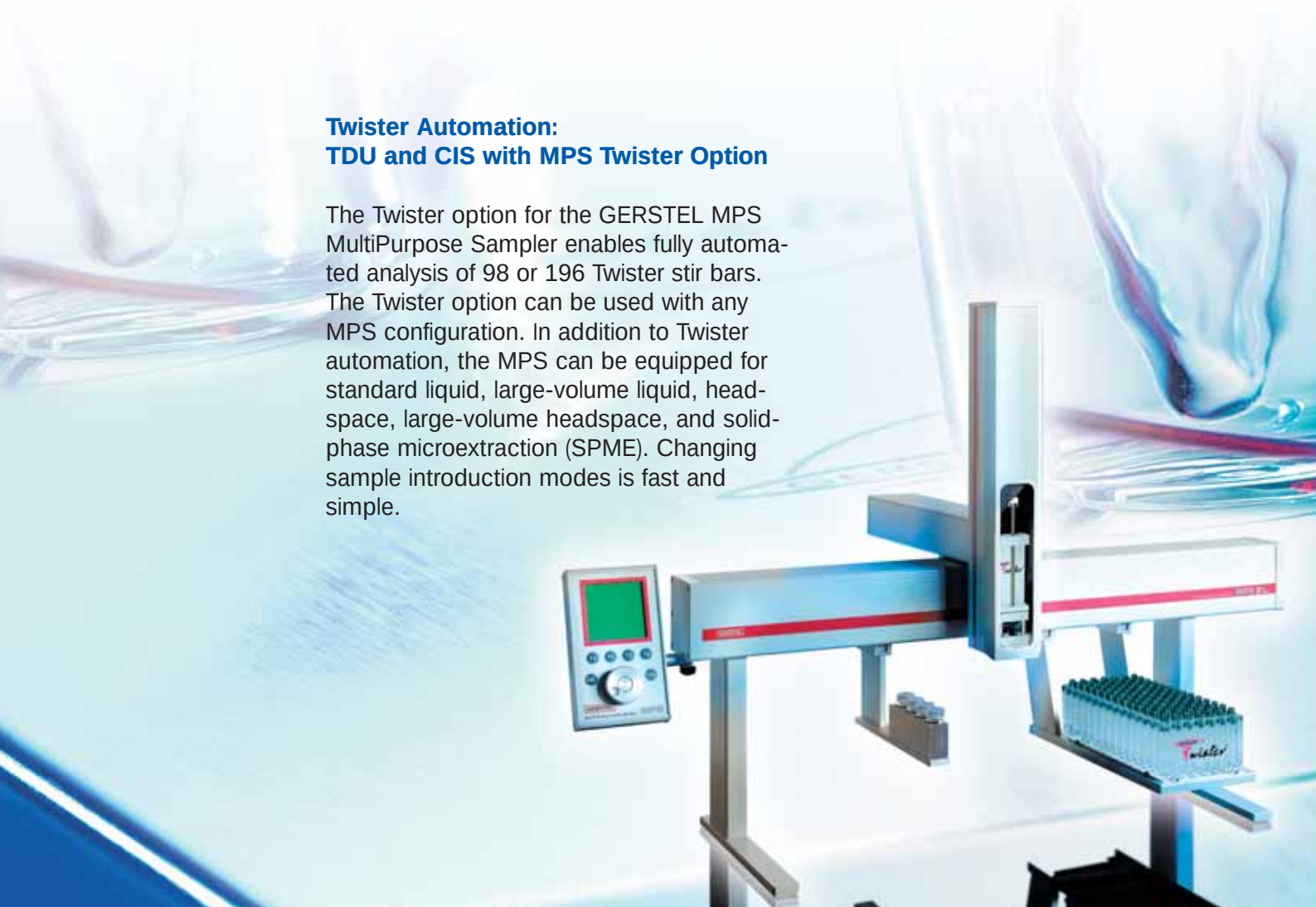
The TDU incorporates design and performance features of the industry-leading GERSTEL Thermal Desorption System (TDS 2), but is optimized for Twister stir bar sorptive extraction devices (SBSE) and accommodates all sizes of Twister stir bars (10 and 20 mm length, 0.5 and 1 mm phase thickness). To prevent contamination and to provide convenience in handling, each Twister stir bar is placed into a glass Twister-desorption liner, which is inserted into the TDU.

The TDU mounts directly onto the CIS, eliminating the need for a transfer line. The Twister desorption liner mates directly with the glass inlet liner of the CIS—this novel liner-to-liner design prevents analytes from contacting active sites and thus provides a completely inert sample path.

The patented Twister is a magnetic stir bar that has been coated with a partitioning phase of polydimethylsiloxane (PDMS). While stirring the sample solution, the Twister efficiently extracts organic compounds from aqueous or other liquid samples. After extracting analytes from the samples, each Twister is placed into a sealed Twister desorption liner. Prior to insertion of the Twister into the TDU, the GC column head pressure is reduced to zero to prevent back-flush of sample or

Twister Automation: TDU and CIS with MPS Twister Option

The Twister option for the GERSTEL MPS MultiPurpose Sampler enables fully automated analysis of 98 or 196 Twister stir bars. The Twister option can be used with any MPS configuration. In addition to Twister automation, the MPS can be equipped for standard liquid, large-volume liquid, headspace, large-volume headspace, and solid-phase microextraction (SPME). Changing sample introduction modes is fast and simple.



damage to the column. Transfer into the TDU is performed manually using a specifically designed transport ”pen”, or automatically with the MPS Twister option.

Once the Twister is inserted, a pneumatic closing mechanism provides a gas-tight seal for the TDU. The TDU thermally desorbs analytes from the Twister and sweeps these analytes into the CIS. The CIS serves as a cryogenic trap as well as a programmable temperature vaporization GC inlet. Analytes are transferred from the CIS onto the analytical GC column as a narrow band for optimum chromatographic separation. The combination of the CIS with the TDU permits high desorption flow by trapping analytes in the glass inlet liner of the CIS while excess gas flows through the split vent.

The TDU features multi-ramp temperature programming and high flow rates to achieve rapid, reproducible, and complete transfer of analytes from the stir bar to the CIS. The system offers highly versatile flow transfer modes, from splitless to very high split ratios, providing a wide dynamic range for analyzing ultra-trace constituents as well as major components. After desorption is completed, the integrated Peltier cooling quickly takes the TDU back to ambient temperature to facilitate high sample throughput. All TDU and MPS functions are controlled through the GERSTEL MASter software, which is fully integrated with the Agilent ChemStation sample list.

Detection limits in the parts-per-trillion range and a linear quantitation range of 10^5 have been routinely achieved with the Twister.

Important Advantages of the GERSTEL Twister Desorption Unit

1 **High-flow thermal desorption**	***High recoveries of high boiling and thermally labile compounds***
2 **No transfer line, novel liner-to-liner design.**	***Inert sample path, higher recoveries***
3 **Individual Twister desorption liners**	***No contamination, no carryover***
4 **Versatile split/splitless control**	***Wide dynamic range***
5 **Non-heated O-ring seals; no valves**	***No leaks, low maintenance, low background***
6 **Pressure reduction via CIS split vent before change of Twister desorption liner.**	***No sample back-flush, no damage to column***
7 **Integrated Peltier cooling**	***Fast cycle times; higher throughput***
8 **Compatible with existing CIS / PTV**	***Simple system upgrade***
9 **TDU easily demounts from CIS**	***Wider utility of analytical system***

TDU FACTS

Temperature Range
20 to 350 °C

Heating rate
0,5 to 12 °C/s

Cooling rate
from 300 to 20 °C in 30 s

Twister sizes
10 and 20 mm length,
0,5 and 1 mm film thickness

Ask us how GERSTEL Technology can benefit you!

MPS-Twister-holder

GERSTEL Multi Purpose Sampler MPS Twister Option consists of:

- Twister automation adapter for the MPS
- 100 Twister desorption liners with TDU gas flow connectors
- Twister-Tray (holds 98 Twister de-sorption/liners/Twisters)
- Replacement O-rings
- 10 Twisters (10 mm long, 0.5 mm phase thickness)

MPS-Twister-Tray

GERSTEL MAESTRO Software
Easy control of the sampler is ensured when using the proven GERSTEL MAESTRO Software in »Sample Preparation« mode.

For detailed information on other GERSTEL products and systems as well as a complete list of available publictions, please visit our web page at www.gerstel.com

Important advantages of the GERSTEL TDU and MPS Twister Automation Option:

1. **Short TDU cycle times**
2. **Automated analysis of 98 or 196 samples**
3. **Increased versatility of sample introduction.**
4. **Integrated sequence list**

- ***High sample throughput***
- ***High productivity, lower labor cost.***
- ***Accommodates standard liquid, large-volume liquid, headspace, SPME, Twister thermal desorption.***
- ***One method and one sequence list operates complete system TDU/MPS/GC/MSD***

Ask us how GERSTEL Technology can benefit you!

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

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