

# Novel automated Pyrolyzer for the GERSTEL TDU

Pyrolyzer module for the GERSTEL Thermal Desorption Unit (TDU) enables highly flexible and efficient automated pyrolysis of solids and liquids at up to 1000 °C.

GERSTEL has further expanded the capabilities of the Thermal Desorption Unit (TDU) adding a new dimension to an already vast range of technologies supported by our compact thermal desorber. A cleverly designed pyrolysis accessory enables efficient and flexible automated pyrolysis of liquids and solids. If required, thermal desorption and pyrolysis of the same sample can be performed in sequence to obtain the maximum amount of information in the shortest possible time. Different sample holders and different pyrolysis and GC/MS methods can be used in one automated sequence for faster and simpler method development and the analyst can run a range of different sample types in one automated sequence. When combined with the GERSTEL MultiPurpose Sampler (MPS), up to 196 samples can be analyzed automatically in one batch. With just one method and one sequence table the analyst can set up the complete system including thermal desorption, pyrolysis, and the GC/MS runs. This reduces the risk of error and enables a highly efficient work-flow, while providing sensitive and reliable results. The initial thermal desorption can be performed at temperatures ranging from ambient to 350 °C. Pyrolysis is performed at temperatures from 350 °C to 1000 °C.



The temperature program can be varied from sample to sample. Heating rates range from 0.02 °C/s to 100 °C/s, which means that optimal analysis conditions can be chosen for each sample type and for every conceivable matrix. Slow heating can, for example, be used for TGA simulation. Pyrolysis breakdown products are transferred to the GC/MS system using the GERSTEL Cooled Injection System (CIS) PTV-type inlet. The CIS can be used either simply as a heated split interface or as an intermediate cryofocusing trap in order to focus volatile analytes for best possible separation and maximum information content. The valve-free liner-in-liner concept eliminates sample-to-sample carry-over and the TDU and CIS liners are heated over their entire lengths to ensure best possible recovery and minimal contamination. The platinum filament is connected at four different points providing extremely accurate temperature control as well as monitoring of the filament condition, thus ensuring reliable results at all times. Change over between standard TDU operation and pyrolysis operation is performed in less than ten minutes ensuring that the complete system including the GC/MS can be used flexibly and to the greatest possible benefit of the laboratory.



GERSTEL online: Information on products, applications, events and downloads, as well as general information about GERSTEL and our customer focused solutions: [www.gerstel.com](http://www.gerstel.com) and [www.gerstelus.com](http://www.gerstelus.com).

## Imprint

### Published by

GERSTEL GmbH & Co. KG  
Eberhard-Gerstel-Platz 1  
45473 Mülheim an der Ruhr,  
Germany

### Editorial director

Guido Deussing  
Uhlandstrasse 16  
41464 Neuss, Germany  
guido.deussing@presstextkom.de

### Scientific advisory board

Dr. Eike Kleine-Benne  
eike\_kleine-benne@gerstel.de  
Dr. Oliver Lerch  
oliver\_lerch@gerstel.de  
Dr. Malte Reimold  
malte\_reimold@gerstel.de

### Translation and editing

Kaj Petersen  
kaj\_petersen@gerstel.com

### Design

Paura Design, Hagen, Germany  
www.paura.de

**GERSTEL** worldwide  
**solutions**

ISSN 1619-0076 · 03/2011

**GERSTEL**

GLOBAL ANALYTICAL SOLUTIONS

GERSTEL, Inc., USA  
+1 410 - 247 5885  
sales@gerstelus.com

GERSTEL GmbH & Co. KG,  
Germany  
+49 208 - 7 65 03-0  
gerstel@gerstel.com

GERSTEL K.K., Japan  
+81 3 57 31 53 21  
info@gerstel.co.jp

GERSTEL BRASIL  
+55 11 5665 8931  
gerstel-brasil@gerstel.com

GERSTEL AG, Switzerland  
+41 41 - 9 21 97 23  
gerstel@ch.gerstel.com

GERSTEL LLP, Singapore  
+65 6622 5486  
sea@gerstel.com

