SUPERIORITY
BY ADAPTATION

FREE-STYLE™

AUTOMATED **SAMPLE PREPARATION**

SUPERIORITY
BY FLEXIBLE,

FREE STYLE™
AUTOMATED **SAMPLE PREPARATION**

SUPERIORITY
BY FLEXIBLE, CLEVER,

SPE MODULE

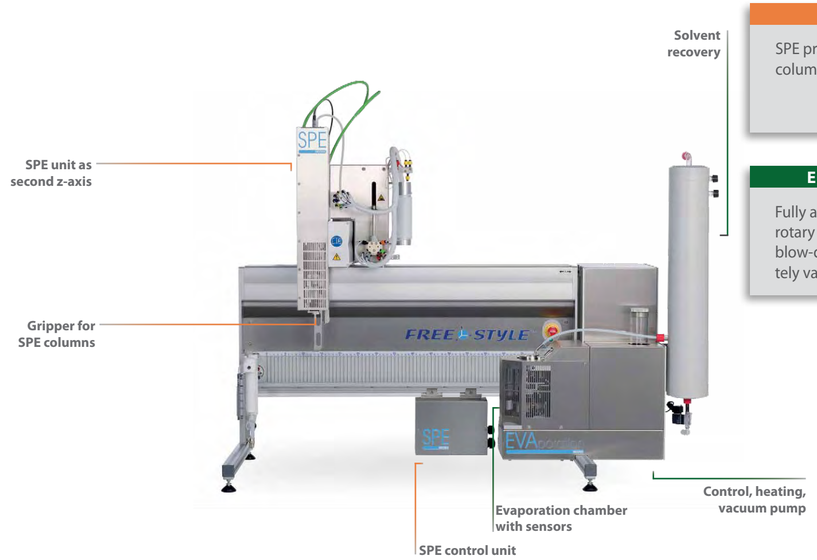
SPE processing unit for standard column formats (SPE, IAC, glass)

FREE STYLE™

AUTOMATED **SAMPLE PREPARATION**

SUPERIORITY

BY FLEXIBLE, CLEVER, ACCURATE



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SPE processing unit for standard column formats (SPE, IAC, glass)

EVAporation MODULE

Fully automated concentration with rotary evaporator principle and/or blow-down with nitrogen to an infinitely variable end volume

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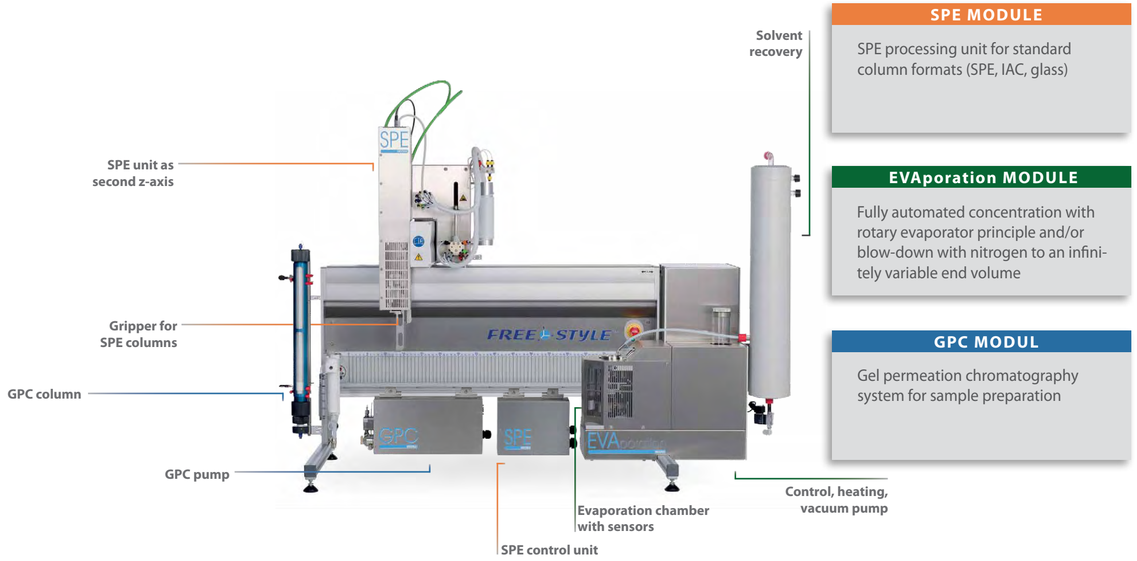

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GPC MODUL

Gel permeation chromatography system for sample preparation

FREE STYLE™

AUTOMATED **SAMPLE PREPARATION**

BE IT FOOD, ANIMAL FEED, THE ENVIRONMENT
OR...

All FREESTYLE systems support your laboratory routine using:

- Gel permeation chromatography for analysis by pesticide and environmental laboratories
- A universal SPE-module for all standardised SPE columns or immunoaffinity columns
- A variable EVAporation-module that concentrates samples to a defined end volume applying either the rotary evaporator-principle or through „nitrogen blow-down"

… all modules can be freely combined, e.g. SPE followed by EVAporation or GPC with subsequent EVAporation …

...EFFICIENT SAMPLE PREPARATION

FREESTYLE – not only a way of life, but also stands for flexibility, spontaneity and adaptability. LCTech deemed this the most appropriate description for their new line: FREESTYLE-systems.
Each of the FREESTYLE-systems is technically a tested xyz-robot, which is adaptable to the growing and changing requirements within laboratory routines by choosing the appropriate module.

FLEXIBLE, SPONTANEOUS - UNIQUE

The underlying technology is comparable with other systems. However, FREESTYLE-systems are made incomparable through their flexible adaptation to changing requirements at any one time. A spontaneous change of application, say, for example, using different sample containers - can be achieved without any reconstruction or need for service engineer support!

The installed modules can be easily activated at the click of a mouse. Either via single module functions or as a combination of the modules available -it's that simple! In this way, samples cleaned via GPC or SPE can be collected as a fraction in a container or alternatively be fed directly into the vacuum chamber. Here, the sample will be concentrated to the required end volume.

Most importantly, intuitively operated software helps to keep track. The software is adapted once before utilising the FREESTYLE-system! All that's left to do now is to set up the method and, thereafter, the system is ready for your laboratory work routines.

INNOVATION WITH ATTENTION TO DETAIL

Our customers will be just as excited about the diversity of the FREESTYLE-systems as are we as developers. After all, such flexibility within automated sample preparation directly reflects our love for detail and is unique in the current market. We are convinced that the advantages we offer to our customers will soon be experienced in the everyday laboratory work. All benefits are the sum total of many practical features and creative ideas realised in the new FREESTYLE-system.

Routine work is no longer a chore.
Find out how FREESTYLE-systems can be used to your advantage.

FREESTYLE™
AUTOMATED **SAMPLE PREPARATION**

FREESTYLE Basic

The FREESTYLE Basic is your fundamental building block!

You can't do without this fully functional base unit including an xyz-robot, which is essential for the expansion with further functions.

Through this, the robotic-system is adapted to the specific customer's needs. All modules can be ordered together with FREESTYLE Basic or alternatively retrofitted at some other time in the future.

Powerful software allows for the selection of individual modules or the combining of the functions in one single method. For example, in solid phase extraction (SPE) you could process the SPE-step on its own or, in combination with the EVAporation-module, subsequent concentration could be automated including a solvent exchange.

WOULD YOU LIKE TO FIND OUT MORE?

The extraordinary possibilities offered through FREESTYLE are best explored through personal dialogue.
Contact: support@freestyle-robotic.com

FREESTYLE SPE

The FREESTYLE SPE-system opens up entirely new ways for the automatisation of SPE-methods.

Since the SPE-column is firmly attached to the robot arm, the SPE-column can be moved and run anywhere within the system. This offers extreme flexibility. Manually established methods can be completely absorbed in the automatisation process, such that lengthy adaptations are omitted.

All original columns in standard format 1 mL - 15 mL, as well as glass columns can be used. Only different adapters are needed; the system itself stays untouched. It's as simple as that!

This technology also caters for extreme method adaptation, e.g. looking at sample transfer to column: regardless whether there is much or little, be it qualitative or quantitative – everything is possible. Elution into a container, fractionated elution or direct feed of the sample into the EVAporation-module for concentration - there are no real limitations.

FREESTYLE EVAporation

Generally the last step in sample preparation: Concentration of samples to small volume.

Seemingly an easy task, however, potentially carries an enormously high risk for error. This is remedied by means of our sophisticated and reliable automatisation. Samples are evaporated in sequence applying the rotary evaporation principle or blown-down with nitrogen. Both physical methods can be combined! Recovery rates of volatile analytes and reproducibility are consequently astonishingly high. Once the via software pre-selected end volume is achieved, the sample is removed from the chamber by the robot, transferred to the chosen vials and fractionated if desired. Afterwards, the chamber is rinsed: Finished!

Parameters can be set freely for the entire process within the given framework conditions: End volume, vacuum, nitrogen, temperature – all via software; no hands-on adjustments on the actual system! Unique is the option to calibrate the vacuum chamber at any time. At the push of a button, this process runs fully automated. This important step can be integrated in the routine of an accredited laboratory and the results can be stored.

High quality components have been used in the design of this module and contribute to an extremely low maintenance system: the vacuum pump is frequency controlled and consequently nearly silent. Maintenance-free heating elements ensure accurate heating.

FREESTYLE GPC

Food and animal feed samples are in part extremely fatty and are as a matrix often quite challenging.

Sample clean-up is mostly essential and is performed effectively via GPC (Gel permeation-Chromatography). This universal clean-up method is described in detail in § 64 LFGB (German food and feed code) under L 00.00-34 (formerly DFG-German Research Council- S19) and is applicable to all samples. The FREESTYLE GPC-system is ideally suited for the automated processing of such samples: flexible, suitable for large series, easy to handle and highly efficient.

We did not skimp on component quality: Double piston pump instead of a single pump, high-precision injection pump, branded valves and further high-quality components are your warranty for top performance and low follow-up costs!

FREE-STYLE™
AUTOMATED **SAMPLE PREPARATION**

ONE PLATFORM – EVERYTHING IS POSSIBLE

ONE FOR ANYTHING

FREESTYLE – this is your start position:

FLEXIBILITY UNCOMPROMISED:
A range of samples and eluate containers

INDIVIDUALITY
You define your individual platform: Racks can be freely combined

SPONTANEITY
Select the robotic platform: at any time day by day, sequence by sequence or sample by sample

NEUTRAL
Closed system:
From sample to analytical container

SPE – first class:

BROAD RANGE APPLICATION
For all standard SPE-columns from 1 to 15 mL, closed immunoaffinity columns, as well as similar sized glass columns (e.g. by LCTech)

SAMPLE INTRODUCTION - TAILOR MADE
Different sample feed techniques for the smallest up to large volumes

EVERYTHING INTO GLASS CONTAINERS
Elution using various solvents in different glass containers

TREATMENTS - TAILOR MADE
Many solvents can be used,
Drying of column with inert gas

EVAporation – unrivalled:

EVAPORATION TO ORDER
Evaporation on its own or in combination with other modules always selectable at any time

COMBINABLE APPLICATIONS
Temperature/Vacuum with Temperature/Inert gas-procedure combinable

EXCELLENT BASIS WITH PRECISE END VOLUME
Selectable from 0.5 mL to 5.0 mL via software

CALIBRATION IS A COMFORT
Reassurance through automated calibration of the end volume

RESULTS AS REQUIRED
With or without solvent exchange

EXTRAORDINARY PRECISION INCLUDED
Concentrated samples are taken up by a needle and are not fed through tubes

GPC – tailor made

INJECTION WITHOUT LIMITS
Sample loop-overfilling, sample loop-partial filling or quantitative transfer from one or several containers

WHAT ABOUT PRESSURE
Precise registration of low pressure through adapted GPC-pump

GPC-COLUMN – TRUST IS GOOD, CONTROL IS BETTER
Monitoring of GPC-column for pressure, type and number of injections

FRACTION - QUO VADIS?
Fractions can be collected in many different types of container or else be discarded

LOADING THE SYSTEMS: SIMPLE AND FAST

ARRANGEMENTS:

Other suppliers campaign with more than 50 platforms.
Sorry, but we have got only one.

However, on this one you can randomly combine racks. At any time. The racks are the key feature for the incredibly flexible usage of this system. Depending on the charge type up to 180 samples could be loaded.

FITTING RACKS:

Simply hook the racks into the robotic system. Any order will suffice.

It couldn't be simpler.

START-UP:

Link mounting position and rack type in the software with only a few mouse clicks.

By doing this, position, dimension and volumes of containers can be clearly identified. The system is ready for start-up!

FREE STYLE™
AUTOMATED **SAMPLE PREPARATION**

OPERATION –
EASY AND INTUITIVE

The software for the FREESTYLE units is designed in the same spirit as the hardware: Easy to operate, however with depth to it. The exceptional flexibility of the system is essentially split into two functional areas:

METHOD SET-UP AND SAMPLE REGISTER

A method is the condition under which the sample is going to be processed, exactly in the way you want it to be. Depending on the integrated modules, methods can be defined and combined, respectively.

GPC-METHOD, GEL PERMEATION CHROMATOGRAPHY

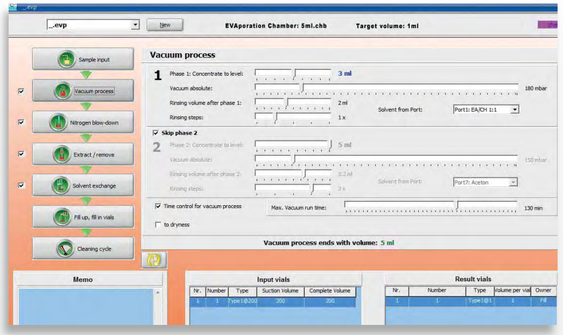
The basic sequence of sample preparation with GPC is pre-installed: forerun, main fraction (several fractions possible), tailings. A clearly laid out graphic helps with the design of your method. Just enter your values – done!

SPE-METHOD, SOLID PHASE EXTRACTION

For the design of an SPE-method we put emphasis on an as exact as possible replication of a manual method into automatic process. This spares tiresome trial and error periods.

The software offers the basic tools of conditioning, sample loading and elution, just as you would find in a manual method. By means of "Drag & Drop", the basic structure of a method for any method sequence can be defined within seconds. Open the selected SPE-step by double-clicking. Simply by moving bars, parameters, such as volume or speed can be adjusted. For your control, the value will be displayed as a figure.

The heart of the method lies in the sample introduction. Regardless, whether you have only a few µL or a volume of up to ca. 150 mL to analyse - qualitatively or quantitatively. You will always find the most suitable way for the introduction of your sample. The possibilities are endless!



EVAPORATION-METHOD

Samples will be concentrated in series with an EVAporation-module. It is effortless, reliable and precise.

The idea: Concentration to a defined end volume, which can be set in the software, potentially with solvent exchange, and transfer of samples in one or several vials tightly sealed with septa.

For the first time, you can select and specifically define for each method, which end volume should be achieved and which process should be applied:

- exclusively rotary evaporation principle (vacuum and energy supply)
- blow-down with nitrogen
- or in combination of both physical methods
- and should you wish to include a solvent exchange - *feel free!*

The individual steps required for EVAporation (e.g. blowing down with nitrogen, solvent exchange) can be easily integrated into the process with one mouse click. Similar to SPE, by moving bars you can set the required values. Once the sample is completely processed, it will be directly and exactly removed from the vacuum chamber via robotic needle and transferred into the defined vials.

FLEX-METHOD - COMBINE AND SAVE TIME

You can combine two previously independent methods and create a "FLEX"-method: e.g. GPC and SPE methods with the automated EVAporation-module. Individual GPC fractions and SPE eluates are fed online into the evaporation chamber, while additional fractions are collected into a vial. You will be amazed as to how much time you are going to save. The Flex-methods economise extensive manual sample handling and radically shorten the time before sample injection.

SAMPLE REGISTRATION

The second function „sample registration" in a sample list is equally as fast as is performed in practice.

1. Fit respective racks containing samples, end containers and possibly SPE-columns anywhere into the FREESTYLE-sytem,
2. Check or adapt rack positions in the software,
3. Register samples in the sample list and select the required method(s),
4. Log in software the order of samples, vials or columns with a simple mouse click.

FREESTYLE™
AUTOMATED **SAMPLE PREPARATION**

SPECIFICATIONS OF THE FREESTYLE SERIES

	Available Features	SPE*/IAC**-Application	SPE/IAC with Automated Concentration	Sample Cleanup with GPC	Sample Cleanup with GPC and Automated Concentration	EVAporation
FREESTYLE BASIC	●	●	●	●	●	●
• XYZ-Robot	●	●	●	●	●	●
• Software	●	●	●	●	●	●
• Wide range power supply	●	●	●	●	●	●
• Manifold safety devices (e. g. automatic collision control)	●	●	●	●	●	●
• Emergency stop button	●	●	●	●	●	●
FREESTYLE SPE* Module	●	●	●			
• Numbered and orientation-coded racks	●	●	●			
• Quantitative sample application with rinsing of the sample vial	●	●	●			
• Transfer of small sample volumes onto the SPE column via needle	●	●	●			
• Special method for the H53	●	●	●			
• Elution with a single solvent	●	●	●			
• Elution with several solvents into multiple vials	●	●	●			
• Elution into EVAporation chamber (as far as installed)	●	●	●			
• Process control with positive pressure	●	●	●			
• Column drying with inert gas (e. g. nitrogen)	●	●	●			
• Standard-SPE* columns from 1 - 15 mL	●	●	●			
• Standard-IAC** columns from 1- 3 mL (sealed with cap)	●	●	●			
• Glass*** columns (e. g. from LCTech or corresponding design)	●	●	●			
FREESTYLE GPC Module	●			●	●	
• Long-lasting double piston pump	●			●	●	
• Flow rate per minute adjustable from 0,1 to 50 mL	●			●	●	
• Adapted pressure sensor for low pressure applications	●			●	●	
• GPC columns (various dimensions and solvents available)	●			●	●	
• 5 different injection possibilities for all known applications	●			●	●	
• User-defined fractionation possibilities of the main run	●			●	●	
FREESTYLE EVAporation Module	●		●		●	●
• Controllable vacuum and adjustable two-zone heating	●		●		●	●
• Integrated chemically inert, frequency controlled membrane vacuum pump	●		●		●	●
• Blow-down with inert gas (e. g. nitrogen)	Option		Option		Option	Option
• Inert gas-flooding of the entire system (e. g. with nitrogen)	Option		Option		Option	Option
• Special liquid level sensor for highly coloured samples	●		●		●	●
• Automatic EVAporation chamber calibration	●		●		●	●
• Solvent exchange liquid/liquid	●		●		●	●
• Solvent exchange to dryness/resuspension	●		●		●	●
• Direct withdrawal of the concentrate from the EVAporation chamber	●		●		●	●
• Rinsing of the EVAporation module (quantitative transfer)	●		●		●	●
• Special rinsing capillary with 360 ° rinsing radius	●		●		●	●
• Separate waste tube for distillate	●		●		●	●

SPECIFICATIONS OF THE FREESTYLE SERIES

	Available Features	SPE*/IAC**-Application	SPE/IAC with Automated Concentration	Sample Cleanup with GPC	Sample Cleanup with GPC and Automated Concentration	EVAporation
Flexible Robotic Platform	●	●	●	●	●	●
• Numbered and orientation-coded racks	●	●	●	●	●	●
• Removable inner racks at small volumes	●	●	●	●	●	●
• Flexibility by exchangeable racks	●	●	●	●	●	●
• Rack for SPE / IAC columns	Option	●	●	Option	Option	Option
• Temperature-controled racks	Option	Option	Option	Option	Option	Option
• Rack with light-protection for light-sensitive samples	Option	Option	Option	Option	Option	Option
• More than 20 different racks available	●	●	●	●	●	●
• Other glass sizes and shapes can easily be implemented	on request	on request	on request	on request	on request	on request
Sample Transfer	●	●	●	●	●	●
• Usage of septa-sealed vials	●	●	●	●	●	●
• Virtually loss-free sample transfer by using of a pipetting needle	●	●	●	●	●	●
• Rinsing of the sample vial (quantitative transfer)	●	●	●	●	●	●
• High-efficiency 360° sample vial rinsing	●	●	●	●	●	●
• Inert liquid-contacted materials (steel, fluoro carbons, glass)	●	●	●	●	●	●
Accessories						
• UV Detector for GPC column performance check	Option	----	----	Option	Option	----
• Barcode-Reader	Option	Option	Option	Option	Option	Option
• Chiller	Option	----	Option	----	Option	Option
• Column switching valve for GPC columns	Option	----	----	Option	Option	----
• 12-Port valve for up to 6 solvents	Option	Option	Option	Option	Option	Option
* Solid Phase Extraction						
** Immunoaffinity columns (e. g. for mycotoxin analysis)						
*** Special columns for the MHC analysis; max. length = 105 mm						
● = Standard						
Option = May be ordered additionally						

! Racks are available for all standard vials from 1 mL up to 1 L bottles. Custom solutions for special vials, e. g. for TurboVap or Buechi systems, as well as for temperature and light sensitive samples are easily possible. *Ask us.*

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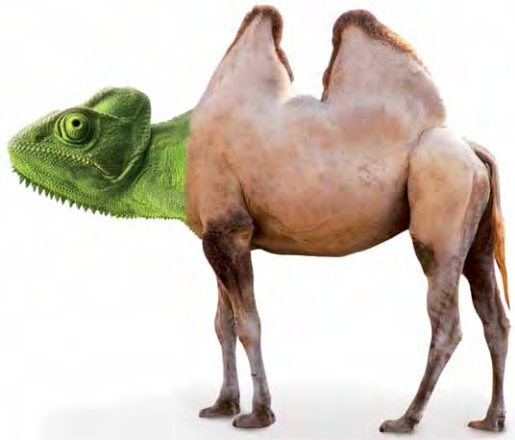
Vulpes phascolarctos cinereus

Hyla arborea boinae

Coccinellidae pavo cristatus

Sciurus vulgaris elephantidae

Lepus europaeus gallus



Camelidae chamaeleonidae

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SAMPLE PREPARATION & ANALYSIS