

BINDER WORLD

Special Edition for ACHEMA 2018



New products

FORWARD
INTO THE
FUTURE

New products for 2018

The BINDER family is still growing – which means guaranteed success for your lab work.



Climate chambers with a user-friendly, intuitive operating concept.



CO₂ incubators with DuoDoor™ unit door and glass door can be opened in one simple step.



Ultra low temperature freezers with a multi-stage safety concept.



APT-COM™ 4 software for logging, programming, and monitoring.

FOREWORD: PETER M. BINDER



Dear BINDER WORLD Readers,

We're feeling upbeat here at BINDER. As well as working hard to make sure our customers always have access to the latest technology, we are also creating a cutting-edge environment for our staff. To achieve this, we have built a new "COMPETENCE FACTORY", a state-of-the-art production hall.

This factory forms the basis for our innovative manufacturing process, while also making sure that Tuttlingen remains our only production site for the long-term future. Smart machines have taken over the tough manual jobs and more effective production processes are improving motivation on the team. As it ventures into the future, BINDER is working hard to achieve progress, which is why the field of development is so important to us. We are keen to build the best simulation chambers out there and we are prepared to go the distance.

We will be presenting our latest achievements atACHEMA. And you can rest assured that every one of the chambers that you see at stand D78 in hall 4.1. has been painstakingly and carefully developed using our wealth of expertise. We are proud of the results, though we could never have achieved them without the support of the team. After all, you need more than just cutting-edge production systems to build BINDER chambers. It's the people involved who transform them into the incredible products they are! We create premium quality that ensures all of your applications are a success.

Warm regards,

Peter Michael Binder, CEO

Table of contents

- 03 Foreword: Peter M. Binder, CEO
- 04 BINDER atACHEMA
- 05 Venturing into the future –
The latest products from BINDER
- 06 CO₂ incubators
- 08 Ultra low temperature freezers
- 10 Cell and module test chambers
- 12 Dynamic climate chambers
- 13 **Solid.Line – Our new product line**
- 14 Solid.Line constant climate chambers
- 15 Solid.Line drying and heating
chambers and incubators
- 16 **APT-COM™ 4 software**
- 17 **BINDER Service**
- 18 **Case Study:**
Thermoplastic elastomers from
Kraiburg TPE in Waldkraiburg

BINDER presents its forward-thinking approach at ACHEMA



BINDER GmbH is making leaps and bounds towards the future. A number of its innovations will be on display at ACHEMA.

What you can expect at this year's ACHEMA?

BINDER has spent the last few months diligently working towards its appearance at ACHEMA – the world's leading trade fair for the process industry – which is being held in Frankfurt between June 11 and 15. Visitors to BINDER's trade fair stand (D78 in hall 4.1) can look forward to seeing the latest simulation chambers and innovative functions to come out of Tuttlingen. The results of all BINDER's hard work speak for themselves!

A large team was tasked with developing each individual chamber to make sure they

are the best they could possibly be. Any product from the BINDER brand is packed full of advanced technology and innovation. The company's managing partner, Peter M. Binder, tours the factory on a daily basis,



ACHEMA: June 11–15, 2018

just to make sure this standard is met. And if you've had the chance to see BINDER's production hall for yourself then you can see that it is. Here, the future is within touching distance. We are packing up all these innovations and bringing them to ACHEMA, where they will be showcased on our 131 m² stand (D78 in hall 4.1). Following our motto of "Venturing into the future", visitors can immerse themselves in the cutting-edge, innovative world of BINDER. And you won't be disappointed. As well as exploring our new Solid.Line units, you can also tap into our skilled team's impressive expertise. There's also an exciting competition to look forward to. Stop by for a chance to experience progress, learn something new, and marvel at the latest technology from BINDER. You won't forget about BINDER or our quality for a long time to come.

COMPETITION



GOLF and FUN at the BINDER stand

Always fancied becoming the proud owner of a WEBER grill?
Then make sure you visit our exhibition stand at stand D78, hall 4.1 at ACHEMA. You're just one hit away from winning our fantastic main prize!
And simply taking part will win you an exquisite BINDER golf ball.
Fun is guaranteed!

Master-Touch series Master-Touch charcoal grill, GBS limited edition 57 cm + Weber® toy grill, original kettle (red)

Forward into the future



MADE IN
GERMANY

New products from BINDER. Reliable ultra low temperature freezer with **top energy efficiency**. The pioneering **CO₂ incubator CB** with unique technical features. The cell and module test chamber for lithium-ion energy storage devices plus a **safety package** for aging and performance tests. **Solid.Line**, the new product line with incredible value for money. Logging, programming, and monitoring with the new **APT-COM™ 4 software**.

CB 170 | CO₂ incubators with hot air sterilization and heat sterilizable CO₂ sensor

BINDER CO₂ incubators have always been trendsetters in cutting-edge cell cultivation. The new CB 170 model comes with an enhanced version of the ground-breaking anti-contamination concept but simpler operation. Performance has been improved and the interior is now 12% bigger, though the footprint has stayed the same and the stacking height has been reduced. The CB model is and always will be synonymous with the simple, hassle-free, and contamination-proof incubation of cell cultures.



Available from August 2018

NEW

A NEW LOOK FOR THE POPULAR CB MODEL

- Minimum footprint – maximum usable space
- Uncompromising hot air sterilization
- Fanless, hygienic interior

KEY FEATURES

- Range of temperature controller: 4 °C via ambient temperature up to 60 °C
- CO₂ control range: 0–20 vol. % CO₂
- O₂ control range: 0.2–20 vol % O₂ (variants)
- Tried-and-tested anti-contamination concept with 180 °C hot air sterilization
- Intuitive touchscreen controller
- Optimized moisture management with quick recovery times
- 170 liters extra space in the interior while maintaining the same footprint
- Stacking height of just 1.80 m for easy use of the top unit
- Fail-safe CO₂ automatic diagnosis system for protecting cell cultures
- DuoDoor™ system: Unit door and glass door can be opened with one handle

Accessories | The perfect addition

Shaker for CO₂ incubators

The shaker is the newly developed, high-quality solution for the incubation of suspension cell cultures in CO₂ incubators. Through the exclusive use of corrosion-resistant components in the stainless steel housing, the CO₂ shaker is especially suited for gassed incubators with increased CO₂ concentrations and nearly saturated air humidity.



Watch video on BINDER TV go2binder.com/en-BINDER-TV

Get ahead with BINDER technology



+ Intuitive touchscreen controller

State-of-the-art control technology with time-segment and real-time programming. Internal data logger, measured values can be read out in open format via USB.



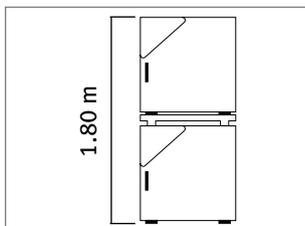
+ DuoDoor™ door locking mechanism

Thanks to the new ergonomic door locking mechanism, the unit door and inner glass door can be opened at the same time.



+ Moisture management with quick recovery times

Advanced Permadyr™ moisture system with practical water pan allows for faster humidification when the door is opened.



+ Convenient lab work

The reduced stacking height allows for easy use of the top unit in the stack.

Interior volume	Fixed power unit fuse	Option model	Version	Art. No.
CB 170 model				
170 L	200...240 V 1~ 50/60 Hz	Standard	CB170-230V	9040-0131
		with O ₂ control 0.2–20 % [•]	CB170-230V-O	9040-0132
		with active humidification*	CB170-230V-F	9040-0133
		with O ₂ control 0.2–20 % and active humidification*	CB170-230V-OF	9040-0134
	100...120 V 1~ 50/60 Hz	Standard	CB170UL-120V	9040-0139
		with O ₂ control 0.2–20 % [•]	CB170UL-120V-O	9040-0140
		with active humidification*	CB170UL-120V-F	9040-0141
		with O ₂ control 0.2–20 % and active humidification*	CB170UL-120V-OF	9040-0142
		*Available from October 2018 [•] with O ₂ control range 10–95 vol.-% O ₂ as an option		

UFV series | Ultra low temperature freezers with climate-neutral refrigerants

The spotlight is on environmentally-friendly design in the new BINDER ultra low temperature freezer. This applies particularly to the energy-efficient refrigeration unit and the lack of toxic refrigerants. A multi-layered safety concept allows users to mix and match elements to suit any environment. With practical unit sizes appropriate and sophisticated options, users have everything they need for reliable long-term storage of highly sensitive samples.



Available from September 2018

RELIABILITY WITH TOP ENERGY EFFICIENCY

- Low energy consumption
- Use of environmentally-friendly refrigerants
- Multi-stage safety concept that can be tailored to requirements

NEW

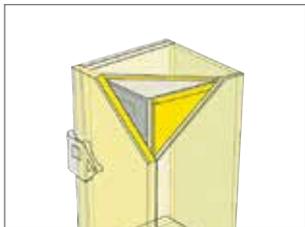
KEY FEATURES

- Range of temperature controller: -86 °C to -40 °C
- Energy-efficient cascade compressor cooling unit
- Environmentally-friendly refrigerants R-290 and R-170
- Excellent thermal insulation using vacuum insulating panels and PUR foam
- Ergonomic door handle
- Rust-proof interior made completely of stainless steel
- Detachable inner doors made of stainless steel
- Stainless steel shelf providing flexible placement
- Zero-voltage alarm contact for in-house alarm system

OPTIONAL EQUIPMENT

- Four foam-filled compartment doors with seal
- Electromechanical door latch
- Controlled access using NumPad
- CO₂ and LN₂ back-up cooling
- Analog output, 4 – 20 mA
- Battery-backed alarm system
- Ethernet interface

Get ahead with BINDER technology



+ Top insulation

Thanks to large vacuum-based thermal insulation on 5 sides.
Foam-filled compartment doors with seal (option).



+ Simple opening and closing

Thanks to door latch handle (standard) or electromechanical door latch (option). New sealing concept to prevent icing.



+ Personalized access control

Using NumPad with individual code entry (option).



+ Comprehensive range of accessories

- Large selection of racks and boxes
- Data Logger
- Defrosting kit

Interior volume	Nominal voltage	Option model	Version	Art. No.
UF V 500 model				
475 L	230 V 1~ 50 Hz	Standard	UFV500-230V	9020-0347
		Water cooling*	UFV500-230V-W	9020-0349
	208...240 V 1~ 60 Hz	Standard*	UFV500UL-240V	9020-0353
		Standard*	UFV500UL-120V	9020-0351
UF V 700 model				
698 L	230 V 1~ 50 Hz	Standard	UFV700-230V	9020-0348
		Water cooling*	UFV700-230V-W	9020-0350
	208...240 V 1~ 60 Hz	Standard*	UFV700UL-240V	9020-0354
		Standard*	UFV700UL-120V	9020-0352

*Available from November 2018

Cell and module test chamber for lithium-ion energy storage devices

The BINDER cell and module test chambers for aging and performance tests offer maximum application convenience and meet Eucar/Hazard level 4*. BINDER supplies test chambers with a standard package for aging tests, as well as a more extensive package for carrying out performance and aging tests.



Eucar/
Hazard
Level 4*

FOR PERFORMANCE AND AGING TESTS

- Series unit expanded to include safety packages
- Perfect and precise temperature distribution
- Easy, intuitive controller handling

Find out more >

Further information and a supplement about cell and module test chambers >go2binder.com/en-BINDER-INDIVIDUAL

PACKAGE P – FOR PERFORMANCE AND AGING TESTS

Application:

Cells and modules are tested at different temperatures **with and without a current supply** to measure performance.

Solution:

- Class 2 independent temperature safety device when temperature is set to 120 °C
- Temperature range limited to 120 °C on the controller
- Stainless steel pressure relief flap installed in the middle of the top of the unit
- Enhanced door lock mechanism with reinforced brackets
- Inert gas connections

Get ahead with BINDER technology



- ⊕ **Temperature range limited** to 120 °C on the controller.



- ⊕ **Door-locking mechanism with strong closing brackets** on the side. Access port for introducing external measuring instruments.



- ⊕ **Inert gas connections** for rinsing (e.g., for nitrogen).



- ⊕ **Pressure relief flap with an additional relieving spring** as a safety measure in the event of faults.



Case Study:

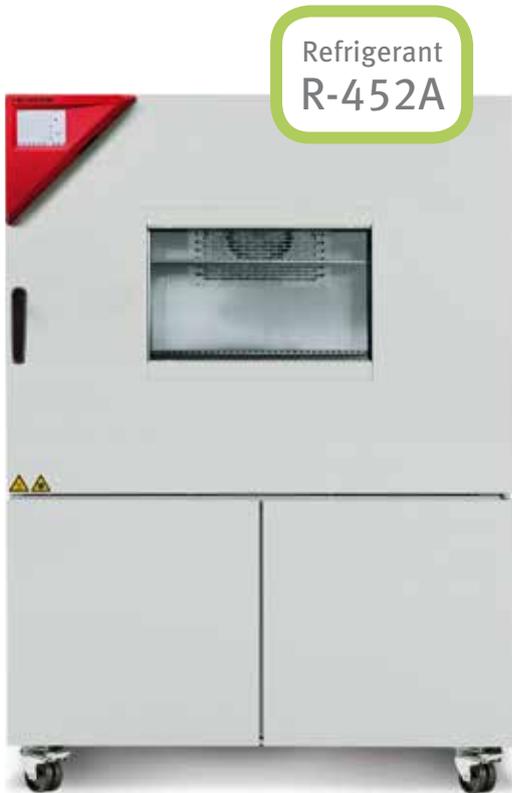
Learn more in our user report:
TÜV SÜD Battery Testing GmbH - Energy storage device
in hardness test

› go2binder.com/en-TUEV-SUED-Battery-Testing

*Operator is responsible for ultimate safety measures

Dynamic climate chambers

BINDER environmental simulation chambers are the perfect starting point for material testing under dynamic climatic conditions. The standard alternating speeds of around 5 K/min mean that tests comply with the relevant standards. An MK or MKT environmental simulation chamber is suitable for complex temperature profiles while the MKF and MKFT series are ideal for complex climate profiles.



DYNAMIC DESIGN FOR DEMANDING MATERIAL TESTS

- Tests according to conventional testing standards as per DIN, IEC, and MIL standards
- Flexible water supply
- Comprehensive standard equipment

*Available from July 15, 2018 (MK/MKT)
 *Available from August 15, 2018 (MKF/MKFT)

go2binder.com/en-dynamic-climate-chambers

KEY FEATURES:

- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- Humidity regulation with capacitive humidity sensor and steam humidification
- Computer interface: Ethernet
- CFC refrigerant R-452A for the MK and MKT series (Refrigerant R-452A for the MKF and MKFT series Available from 2019)

Product overview Dynamic climate chambers

Temperature range	Climate range	Application	SIZE				BINDER series
			56	115	240	720	
-40 °C – 180 °C	–	Dynamic temperature profiles	•	•	•	•	MK
-70 °C – 180 °C	–	Dynamic temperature profiles With deep temperatures		•	•	•	MKT
-40 °C – 180 °C	10 – 95 °C / 10 – 98 % RH	Dynamic climate profiles	•	•	•	•	MKF
-70 °C – 180 °C	10 – 95 °C / 10 – 98 % RH	Dynamic climate profiles With deep temperatures		•	•	•	MKFT

Solid.Line



With its new Solid.Line range, BINDER is expanding its product portfolio of drying and heating chambers, incubators, and constant climate chambers. This new line embodies **solid product design** with **great value for money**. The new Solid.Line is the ideal addition to BINDER's popular premium products, thus complementing the entire product range with BINDER's quality guarantee – Made in Germany.

KBF-S series | Solid.Line constant climate chambers

BINDER constant climate chambers are the specialist equipment of choice when it comes to precise stability tests under climate conditions that are kept constant for an extended period. The new Solid.Line KBF-S climate chamber is a custom-made solution for long-term testing and accelerated stability testing for pharmaceutical products according to the ICH Guideline Q1A. The corrosion- and condensation-free interior also ensures exceptionally stable temperature and moisture levels, even when fully loaded.



CONSISTENTLY SOLID

- Standard-compliant testing according to ICH Q1A
- Easy handling
- Precise temperature and humidity control



KEY FEATURES

- Range of temperature controller: 10 °C to 70 °C
- Humidity control range: 20 % to 80 % RH
- APT.line™ preheating chamber technology for homogeneous climate
- Humidity regulation with capacitive humidity sensor and steam humidification
- Internal data logger, measured values can be read out in open format via USB
- Rust-proof interior made completely of stainless steel
- Standard access port with silicone plug
- Robust twin castors with brakes
- Independent water supply via tank

Available from October 2018

GET AHEAD WITH BINDER TECHNOLOGY



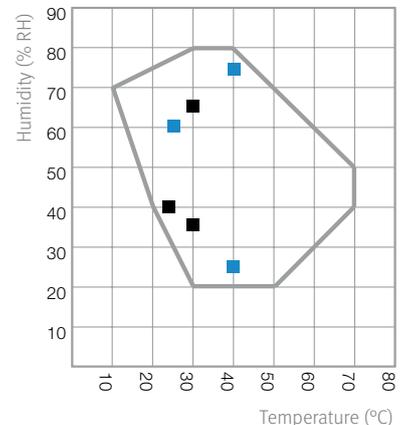
Precise humidification

Plus finely adjustable humidity control thanks to a capacitive humidity sensor and steam humidification.



No risk of corrosion

Because the inner chamber and all fixtures are made entirely from stainless steel.



- ICH Q1A long-term testing
- ICH Q1A accelerated test

Interior volume	Nominal voltage	Option model	Version	Art. No.
KBF-S 240 model				
247 L	230 V 1~ 50/60 Hz	Standard	KBFS240-230V	9020-0366
	200...240 V 1~ 50/60 Hz	Standard	KBFS240UL-240V	9020-0367
KBF-S 720 model				
700 L	230 V 1~ 50/60 Hz	Standard	KBFS720-230V	9020-0368
	200...240 V 1~ 50/60 Hz	Standard	KBFS720UL-240V	9020-0369

BD-S series | Solid.Line incubators

ED-S series, FD-S series | Solid.Line drying and heating chambers

The new products in the Solid.Line impress with their tried-and-tested BINDER quality and reliability. They are suited to drying, sterilization, incubation, and heating. The attributes of the Solid.Line are geared towards the application in question and therefore used in research and quality assurance.



Available from August 2018

SIMPLY SOLID

- Easy handling
- Accurate temperature control
- Simple and ergonomic door opening

NEW

KEY FEATURES

- Temperature range:
 - FD-S drying and heating chambers: Ambient temperature +10 °C to 250 °C
 - ED-S drying and heating chambers: Ambient temperature +7 °C to 250 °C
 - BD-S incubators: Ambient temperature +5 °C to 70 °C
- APT.line™ preheating chamber technology
- Natural or forced convection
- Adjustable exhaust air flap
- Controller with timer function
- Sizes available: 56, 115 liters

GET AHEAD WITH BINDER TECHNOLOGY



Adjustable exhaust air flap
on top of the unit for adjusting
the ventilation speed.



Simple unit operation
Using controller with digital
display in °C and °F.

Interior volume	Nominal voltage	Option model	Version	Art. No.
BD-S 56 model				
62 L	230 V 1~ 50 Hz	Standard	BDS056-230V	9090-0016
	120 V 1~ 60 Hz	Standard	BDS056UL-120V	9090-0017
BD-S 115 model				
118 L	230 V 1~ 50 Hz	Standard	BDS115-230V	9090-0022
	120 V 1~ 60 Hz	Standard	BDS115UL-120V	9090-0023
ED-S 56 model				
62 L	230 V 1~ 50 Hz	Standard	EDS056-230V	9090-0014
	120 V 1~ 60 Hz	Standard	EDS056UL-120V	9090-0015
ED-S 115 model				
118 L	230 V 1~ 50 Hz	Standard	EDS115-230V	9090-0020
	120 V 1~ 60 Hz	Standard	EDS115UL-120V	9090-0021
FD-S 56 model				
55 L	230 V 1~ 50 Hz	Standard	FDS056-230V	9090-0018
	120 V 1~ 60 Hz	Standard	FDS056UL-120V	9090-0019
FD-S 115 model				
106 L	230 V 1~ 50 Hz	Standard	FDS115-230V	9090-0024
	120 V 1~ 60 Hz	Standard	FDS115UL-120V	9090-0025

APT-COM™ 4 | Software for logging, programming, and monitoring

The new version of the APT-COM™ 4 communication software consists of three different editions. Depending on your requirements, you can use the BASIC, PROFESSIONAL, or GLP version. The selection of functions ranges from simple log management and administration for around 100 connected environmental simulation chambers through to the tamper-proof documentation of measured values according to GLP/GMP guidelines, which correspond to the requirements of the FDA Regulation 21 CFR 11.



APT-COM™ 4 BASIC edition

- Log management (creating, deleting, archiving)
- Documentation of measured values
- Central overview of all units in both diagram and table form
- Graphical presentation of measured values
- Graphical/numerical program editor
- Manual export of measured values (CSV file)
- Multilingual user interface (German, English, French, Spanish, Italian)
- Optional program execution via APT-COM™



APT-COM™ 4 PROFESSIONAL edition

- All the same functions as the BASIC edition and:
- Administration of up to 100 connected units at the same time
 - Central overview of all units in a room plan
 - Email-based alarm system
 - Web server for displaying results
 - User administration for multiple users and authorizations
 - Standards stored as pre-defined programs, e.g., PV 1200; 2005
 - Automatic time-managed export of measured values
 - Reports for further processing/archiving
 - Automatic/manual backup and recovery



APT-COM™ 4 GLP edition

- All the same functions as the STANDARD edition and:
- Can be validated according to 21 CFR Part 11 including validation documents
 - Documentation of measured values in a tamper-proof file in accordance with GLP/GMP guidelines on audit trails
 - Electronic signatures
 - Import of data from APT-COM™ 3

Option model	Art. No.
Communication software	
APT-COM™ 4, BASIC edition	9053-0039
APT-COM™ 4, PROFESSIONAL edition	9053-0040
APT-COM™ 4, GLP edition	9053-0042

Available from October 2018

 The data sheet for APT-COM™ is available at: go2binder.com/en-options

BINDER Service

Premium products, top-class advice, and – of course – the best service

BINDER chambers are made to the highest standards of quality. They are often used in highly sensitive areas, such as labs. Areas like this call for absolute accuracy in measurement results, which have to be able to be repeated under exactly the same conditions. BINDER chambers take all these requirements into account. However, the powerful units from Tuttlingen are also subject to plenty of demands during the measurement process, too. They can be heated up to a temperature of 300 °C and then cooled back down again – all while running all the time. It therefore comes as no surprise that even the best units need a good service on a regular basis. This is Andreas Härter, the head of the Service division, and his team come in.



Service manager Andreas Härter understands that service will play an increasingly important role in future.

Originally from the Franconia region of Germany, Mr. Härter makes sure that all our customers' demands are met. Queries concerning chambers, components, or repairs fly in from almost every corner of the globe, an aspect that Härter finds motivating. Customers calling his extension number 555 during normal working hours will always get a response. Other matters, such as on-site visits, are also dealt with quickly and simply by his team. The Service division is moving with the times, too. It is now available 24/7 thanks to the service portal on the BINDER website.

“Service is becoming increasingly important. Customers want to be able to rely fully on their chambers. Downtimes are a no-no, which is why good maintenance is extremely important.

And this is exactly what we're able to offer our users,” explains service expert Härter. The Service division at BINDER isn't just there to support customers; it also works closely with our product managers and engineers. “Because we spend so much time speaking to customers, we are able to monitor the market and our products. We can therefore work on our products all the time, even if it is just making minor adjustments. This means that we are always up-to-date,” says Härter.

Another factor that is becoming increasingly important in the Service division is the units' self-test function using the controller. This saves the customer time and money, while also supporting service engineers with their initial analysis. Härter explains: “This will be the future of customer service. However, we won't be connecting straight to a unit over the Internet as you have to allow for data protection. We won't start working until customers have given us their data.”

The Service division at BINDER complete 4,500 field assignments per year. Germany, Switzerland, Poland, the UK, France, China, and the USA have their own service networks. Service is handled by the sales partners in all other countries. All spare parts delivered by BINDER are produced at the Tuttlingen site in Germany.



The expert for technical support, Patrick Moll, maintains good relationships with BINDER customers.

For everything you need to know about service, training, and seminars at BINDER visit: go2binder.com/en-service

The BINDER service program has not one but two great special offers. If you sign up to a maintenance contract within one year of delivery, your warranty will be extended from two to three years! There is also a 20% discount on all spare parts. For its dynamic climate chambers, BINDER is even treating customers by extending their warranty from two to five years. User satisfaction and chamber reliability are BINDER's number one priority! Enjoy a hassle-free future with Service from BINDER.

SPECIAL OFFER



>go2binder.com/en-sensational-price

From toothbrushes to tool handles and seals in vehicles



TPE is a versatile product

The company Kraiburg TPE from Waldkraiburg in Germany produces thermoplastic elastomers, an extremely innovative product that we will all have come across at some point in our day-to-day lives.

From soft toothbrush handles to children's toys and haptic elements in tools – thermoplastic elastomers from KRAIBURG TPE provide real added value in all kinds of different products. TPEs from Waldkraiburg are also in high demand in the automotive industry, where they are used in vehicle interiors and exteriors and in engine-related applications for a number of well-known car



› Robert Klier, laboratory team leader at the site in Waldkraiburg, prepares the samples for testing in a BINDER heating chamber.

manufacturers. For example, TPE compounds make the controls comfortable to handle, provide glazing encapsulation with outstanding weather resistance, and can be used as sealing elements with high temperature resistance in the engine compartment. The granulate, which can be easily processed by the end customer, does however need to be checked on a regular basis to assess its resistance levels.

How do the thermoplastic elastomers change when they are exposed to certain media such as greases or water? How does the material react to high temperatures in conjunction with this substance? These are just two of the fascinating questions that TPE specialist Robert Klier deals with on a day-to-day basis. And this is where Tuttlingen-based company BINDER comes into play. The company provides the laboratory team leader with the equipment required for extensive testing. “We tried out a few different simulation chambers in the past, but we decided to stick with BINDER. They really are top-quality products – we now have 16 drying and heating chambers, one dynamic climate chamber, and one vacuum drying chamber in our laboratory,”

Tasks and objectives

- Precise maintenance of temperature in short-term and long-term tests
- Test results must be logged and transferred directly to the PC
- Units should be stackable
- Heating chambers must be suitable for special testing

BINDER solutions

- Temperature range: plus ten to 300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy
- Forced convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- Two chrome-plated racks
- Ergonomic handle design
- USB port for recording data

says Klier, who requires the highest degree of accuracy in his measurements. At the end of a test run, the key criterion for Klier is that the interference factors have not resulted in any changes. Together with his team, and with the help of the BINDER chambers, the laboratory team leader also simulates the processing of the thermoplastic elastomers at the end customer's site. "In this process, we check what happens when soft TPEs and hard materials come together – for example, in the case of a toothbrush. The adhesion between TPEs and hard thermoplastics comes not from a chemical bond, but from attractive intermolecular forces and a mechanical anchoring of macromolecules of both components," explains the specialist. Furthermore, at KRAIBURG TPE, every raw material undergoes in-depth testing on arrival and can only be used for production following internal approval. The BINDER heating chambers are used in particular for testing compression set, swelling behavior, and aging. "The standard tests in a drying and heating chamber (FD) take between 24 and 72 hours at 70 to 150 °C. This often involves aging the materials at an accelerated rate," reports Klier.



› The drying and heating chambers from BINDER are stackable and reliable – which is why laboratory team leader Robert Klier enjoys working with them so much.

We tried out a few different simulation chambers in the past, but we decided to stick with BINDER. They really are top-quality products.

”

Laboratory team leader Robert Klier
at Kraiburg TPE

Klier explains that special testing – when a product is to be changed or further developed, for example – is carried out in continuous operation. This type of testing can take up to 1000 hours at 120 °C. Klier: "In the case of special testing, we need to fit the heating chambers with test

equipment which we produce on a very individual basis. The chambers provide the ideal environment for equipment of this kind. Tests like this are used for the automotive industry in particular." This was not the only advantage that won over KRAIBURG TPE – the accuracy of the BINDER units was also a crucial factor. "KRAIBURG TPE is known on the market as a specialist for thermoplastic elastomers. In order to build up our expertise, we rely entirely on high-quality suppliers and partners. We are happy to have found an expert partner for heating chambers in BINDER," adds the laboratory team leader.

Advantages of drying and heating chambers

- Safe and accurate tests
- "Made in Germany" quality
- Two materials can be tested at the same time in one chamber
- A variety of special tests are possible
- Easy to use: good insertion technology and a very reliable controller
- Easy to look after
- Networking: software can be analyzed quickly



› FD 260 model Avantgarde.Line

KRAIBURG TPE GmbH & Co. KG

Friedrich-Schmidt-Str. 2
84478 Waldkraiburg, Germany
Tel: +49(0)8638 9810-0
Fax: +49(0)8638 9810-310
E-mail: info@kraiburg-tpe.com
Contact person: laboratory team leader Robert Klier



Read more
user reports from BINDER:
go2binder.com/en-case-studies

BINDER product range

CO₂ Incubators

Incubators

Cooling incubators

Growth chambers

Ultra low temperature freezers

Drying and heating chambers

Safety drying chambers

Vacuum drying chambers

Constant climate chambers

Dynamic climate chambers



Don't miss out on
our latest products –
Stay up-to-date with our BINDER newsletter

[Subscribe now](#)

go2binder.com/en-newsletter-subscription

Imprint

BINDER Central Services GmbH & Co. KG
Im Mittleren Ösch 5
78532 Tuttlingen, Germany

Anne Lenze
Tel.: +49 7462 / 2005 - 632
Fax: +49 7462 / 2005 - 93 632

Anne.Lenze@binder-world.com
www.binder-world.com

Edition: June 2018



BINDER GmbH
Tuttlingen, Germany

Tel. +49 7462 2005 0
Fax +49 7462 2005 100
info@binder-world.com
www.binder-world.com

BINDER Asia Pacific (Hong Kong) Ltd.
Kowloon, Hong Kong, P.R. China

Tel. +852 39070500
Fax +852 39070507
asia@binder-world.com
www.binder-world.com

**BINDER Environmental Testing
Equipment (Shanghai) Co., Ltd.**
Shanghai, P.R. China

Tel. +86 21 685 808 25
Fax +86 21 685 808 29
china@binder-world.com
www.binder-world.com

Representative Office for CIS
Moscow, Russia

Tel +7 495 988 15 16
Fax +7 495 988 15 17
russia@binder-world.com
www.binder-world.ru

BINDER Inc.
Bohemia, NY, USA

Tel. +1 631 224 4340
Fax +1 631 224 4354
usa@binder-world.com
www.binder-world.us