

Therminus

The LAUDA info magazine

Issue 1/2005



Thermal process control in the manufacture of chemicals

■ Establishment of LAUDA France ■ Fast syntheses ■ Measurements independent of a PC

LAUDA People

Regina Schlör following her training as an industrial clerk, she has been working in the order processing and billing department.



The trained electronics engineer **Siegfried Ott**, replaced in the service support and administration group of the LAUDA Service Centre in March 2005.



Martin Rößner has been working in the development /design department at LAUDA since July last year. The trained technician

is responsible for technical documentation of thermostats/circulation chillers.

NEWS

The LAUDA competition held on the occasion of the market launch of the LAUDA Ecoline Staredition was very popular. The question we asked of budding directors was: "How high is the maximum temperature of the new LAUDA Ecoline Staredition E 100? 120, 130 or 150 °C?" The correct answer was 150 °C. The following each won a director's chair: Germany: Wolfgang Blaser, Backnang; Gaby Backhaus, Pfaffenhofen; Konrad Bickmann, Jülich; Christa Duwe, Marburg; Hans Händler Eupen; Stefan Peetz, Kiel; Michaela Rentmeister, Herne; Bernd Rüter, Ennepetal; Birgit Röhr, Hamburg; Andreas Scharf, Goslar; Christoph Solbach, Tübingen; Rüdiger Schlenk, Ludwigsburg; Hans-Dieter Sickinger, Würzburg; Uta Weigel-Aslan, Heilbronn and Rosemarie Wittmoser, Weimar; France: Leila Fatah, Verson; Norway: Rune Gundersen, Skedsmo; Switzerland: Josef Peter, Sempach Stadion; Hans Vogel, Winterthur; Austria: Georg Lattner, Vienna.

New PRODUCTS

Circulation chillers



The new WK 300 is a classic chiller for rotary evaporators up to 20 °C. This type of device guarantees an operating temperature range of 0 ... 40 °C.



The WKL 1000 has a cooling capacity of 1 kW at an excellent price performance ratio. Its compact size means that it fits under any bench.



Dear friends of LAUDA ...

... I am delighted to be presenting you with a new issue of *Therminus* in 2005. Last year came to a very successful conclusion at LAUDA. With a record turnover of 27.8 million Euro, the company experienced its best result ever recorded in its history. The previous year's result was exceeded by 15 percent, and we hope that this upturn continues this year, too.

In order to achieve our newly-set objectives, various activities have now been launched. One of these is the establishment of LAUDA's first foreign subsidiary, LAUDA in France, on 1 January 2005. The official opening was celebrated in the LAUDA France business premises in Paris, France. By means of this step towards internationalisation, the company is displaying the importance of export for the German economy.

LAUDA's first successful attendance at the Pittcon in Orlando

and the ASC Show in San Diego – at which LAUDA had its own booth – were also something of a novelty for the company. This sets an important sign for the North American market. In times of a weak dollar and increasing competitive pressure, the only way to improve sales chances is by means of a consolidated presence in conjunction with customer consultancy in crucial markets.

Naturally, the advantages and the high quality of the products also have to be convincing. Innovations have traditionally played an important role at LAUDA. The design and the new measuring methods of the new LAUDA DVS 1, MPT C and TD 1 C measuring devices are proof of the advances which have been made in the fields of tensiometry and viscometry.

I wish you an entertaining read of this issue.

Dr. Carsten Persner
Marketing Manager

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Music is in the air ...

The delightful Taubertal is known amongst cyclists for its culinary specialities, its delicious wines and historic towns and villages set in a charming landscape. Yet, for many, the musical events are the finishing touch. The range on offer covers classic to rock, open-air events to concerts held in castles.

Thanks to Weikersheim Castle musical academy as the headquarter

of the Jeunesses Musicales Deutschland, for example, the town has developed into a musical stronghold with a wide range of concerts, opera performances and jazz concerts.

A further regional highlight is the tenth Taubertal festival at Rothenburg in 2005. In recent years, it has become one of the best rock festivals around, especially for young audiences.



Photo of the concert at Weikersheim castle.



Below: Rothenburg, Taubertal Festival

LAUDA Awards

With about 27.000 visitors in 2004 it was the biggest out-door rock event in the Taubertal. In 2005 more than 40 bands and Europe's greatest newcomer contest will be showed.

There is finest entertainment at the tribute concert "Live in the Klosterhof" in Tauberbischofsheim, Germany, which has developed into an annual tradition. This year in the historical walls the high musical and artistically niveau will be continued. Not only professional artists will perform, also the new generation of musicians gets a chance.

Source: Touristikgemeinschaft „Liebliches Taubertal“



Tauberbischofsheim: Live in the Klosterhof. Photo of the concert.

This year, six LAUDA representatives were once again presented with awards for their sales successes achieved last year. Brinkmann Instruments Inc., USA, received the LAUDA Award for the important agency with the highest sales increase, Epac-Service Ltd., Russia, was the representative with the most consistent increase in sales during the last five years. Farasar Chimie, Iran, distinguished itself as the new agency with outstanding sales success. Elvetec Services, France, was honoured as the best agency for measuring instruments. Single Fluid Technology Ltd., Great Britain, received the award for the best agency for heating and cooling systems. The most successful commercial agency in Germany was the Dieter Wiesenack Labor- und Meßtechnik company from Jena.



At the Pittcon in Orlando; our representative Brinkmann was very proud of receiving this year's award.

LAUDA in France

LAUDA has been represented in the crucial country of France in the form of a marketing company since the beginning of 2005. The LAUDA France marketing company has its headquarters on the outskirts of Paris, in the district of Neuilly. Its area of responsibility is the training of representatives and customer advice in conjunction with the representatives. The company operates as a limited partnership, and has one employee. This employee is Eric Couche, who has been working as a sales specialist for apparatus and instruments at various traders of laboratory equipment.

The middle of February saw the official opening of the business premises in Paris. Eric Couche informed the representatives of our French trading partners about the new company and its future activities. The numerous visitors expressed their interest in the new marketing structure and wished the LAUDA team great success on the French market.

Therminus spoke to the new LAUDA man in France, Eric Couche, about the new marketing company.

Therminus:

Does the new job signify a great change for you? What are your current areas of responsibility?

E. Couche:

Sure, it is a change, although not a major change. My last job also involved supporting salespeople in the marketing of technical products. I have been selling LAUDA thermostats since 2002. Now, however, being responsible for a whole country is new for me, yet also extremely motivating. In future, I will be coordinating all marketing activities for LAUDA. This is concerned mainly with trade fairs, training sessions, demonstrations, seminars. The most important area of responsibility of all, however, is the canvassing of new customers.

Therminus:

What advantages are there for LAUDA in France with their new company?

E. Couche:

It is the first time that a German manufacturer of thermostats has established its own subsidiary in France. This is an important signal for the French market. In this way,



Our man in Paris, Eric Couche, is delighted with his new job.

LAUDA offers the customer permanent, „on-site” advice about its extensive range of services. This will have a positive effect on the sales of thermostats and, naturally, measuring instruments.

Therminus:

Mr. Couche, thank you very much for the information.

Training at LAUDA



The refrigeration constructor learns how to weld copper pipes.

The objectives of the training means at LAUDA are to give young people prospects whilst ensuring the company's competence and future. The company has been offering apprenticeships for refrigeration constructors, industrial mechanics, industrial electronics engineers and industrial commercial clerks for years now.

As a result of the lack of skilled workers at the time, LAUDA has been promoting its own employee potential since 1957. Of the 300-plus trained skilled workers at

LAUDA, around one-quarter is still employed by the company. The knowledge, skills and willingness to work of LAUDA employees form the basis for the good reputation enjoyed by LAUDA at regional level with regard to jobs and training, and the good reputation it enjoys in international specialist circles thanks to its products. When it comes to both the ratio of trainees compared to the overall number of employees and the scope and quality of the training, LAUDA enjoys a top position in the Taubertal. This is repeatedly confirmed by the above-average exam results. Since subsequent employment as a skilled worker in the laboratory and in the field of industrial engineering requires universal skills, LAUDA teaches both practical and theoretical aspects of the relevant profession. In addition, internal training managers are involved with extra-plant committees concerned with professional training and further training.

LAUDA currently employs 17 trainees, the majority of which are employed as skilled industrial workers. The new degree in Business



Industrial commercial clerks can be employed in many different departments, such as sales or finance.

Management (BA) is also being taught by LAUDA in conjunction with the University of Cooperative Education in Mosbach. The course is arranged in a dual manner: the business studies are taught at the university of cooperative education, whereas the practical part is done at the company.



In conjunction with the trainers, HR (Human resources department) carries out monthly training sessions. The photo is of the trainees during the final examination of the safety training session on fire and explosion protection.

The right temperature for fast syntheses



*The synthesis reactor system with connected
LAUDA RP 855 C cooling thermostat*

The use of automatic synthesis devices in the search for new compounds simplifies the chemist's job. Fast, precise thermostating is an important prerequisite: the new thermostats of the LAUDA Proline range offer the ideal conditions for such parallel syntheses. One example is the use in the development department of the Technochemie GmbH & Co. KG in Dossenheim, Germany.

In the search for synthesis methods for new active ingredients or an optimised reaction process, automatic synthesis devices are used more and more frequently. They enable, fully automatically, the reproducible execution and monitoring of reactions. In addition to the temporally-coordinated dosage of the reactant, the temperature plays a crucial role in this process. In the research department of the Technochemie GmbH & Co. KG company, a 100 per cent subsidiary of the Degussa AG, a LAUDA Proline RP 855 C thermostat is used with a "MultiMax" automatic synthesis device by Mettler-Toledo. At the Dossenheim plant in Germany, intermediate pharmaceutical products and active ingredients plus special chemicals are the main products manufactured there.

Ideal LAUDA solution

One thermostat from the new LAUDA Proline has proven to be the ideal solution when connecting to the automatic synthesis devices. The cooling thermostat model RP 855 C with an operating temperature range of -55 up to 200 °C meets the required specifications in full. The decisive factors were the extremely fast cooling-down times and its simple operation. The syntheses are carried out at temperatures from -20 up to 100 °C. Four reaction vessels with a volume of 250 ml each can be controlled parallel to each other whilst being independent of each other.

The spatial conditions in a laboratory present a particular challenge. It was necessary to install the cooling thermostat as a device under the bench. The advantage of the RP 855 C is its compact construction. With a surface of only 40 cm x 45 cm, the device can be placed under the laboratory bench without the need for any specific installation measures. This is where one of the advantages of the flexible operation concepts of the LAUDA Proline comes into its own.

Thermostats & Circulation chillers

Heating and Cooling systems

Measuring instrumentation

Simple, flexible operation

Set values can be entered by the operator either directly on the device itself or via a PC. Alternatively, programming can be carried out by means of the removable control panel of the Command control head as simply as via the monitor of a computer. Checking the program run is just as easy. The graphic display enables the real-time monitoring of the set and actual temperatures at a glance. The Command control panel can be positioned on the user's desk up to 50 metres away from the actual test installation.

An important criterion for the use of the Proline thermostats is the fast change-over between the various testing temperatures in order to optimise the reactions with one device. "Time is money" applies especially to the synthesis of substances specific to the customer. In this case, the cooling-down speed within the synthesis process is of utmost importance. The SmartCool system provides cooling capacity when it is needed. With the LAUDA RP 855 C, this cooling capacity amounts to up to 1.6 kW available refrigeration capacity at a bath temperature of 20 °C. This performance is required when a fast cooling-down process from 80 °C down to -10 °C within the shortest possible time for the entire synthesis system is needed. Just as important are the power reserves when intensive exothermic reactions are used in the pistons. Without fast counter-cooling, the temperature could drift to up to 40 Kelvin above the desired temperature value.

It is only the use of the most modern technologies in the field of thermostating technology which enables the fast, efficient temperature control of the automatic synthesis devices at a wide temperature range. Using the LAUDA Proline thermostats makes it possible to fulfil these requirements and to offer the customer major additional benefits, such as could be illustrated in the example of the RP 855 C thermostat.

Further information on this comprehensive specialised article:

- www.lauda.de
- Fax reply coupon

LABORATORY *A* dictionary

ACC-range

(Active cooling control area according to DIN 12876 standard)

is the operating temperature range during operation with an active cooling unit. Example: working temperature range: -30...150 °C, ACC area: -30...100 °C. This information implies that the cooling unit cannot work continuously at temperatures of above 100 °C. The working temperature range is equal to the ACC-range in all LAUDA devices.

Process control in chemistry



The Sigma-Aldrich chemicals company from Steinheim is a manufacturer and wholesale trader of chemicals, analytical reagents and chromatography products. Temperature control of reactors, condensers and apparatus assumes a key role in the processes. LAUDA is responsible for the complete planning, design, manufacture, delivery and initial operation of the heating, cooling and freezing systems. The company's entire range of skills was required to fulfil this order: for the various heat consumers in the new production building, the LAUDA specialists developed an thermostating concept which also effectively uses the existing primary energy systems such as steam and coolant. Since many consumers also require freezing (-30 °C) and no such system

was available, a new freezing system was required. LAUDA installed two central cooling systems – model SUK 600 W – each of which have two buffer tanks made from stainless steel with a volume of five cubic metres, for providing all secondary circular systems, models TR 400 HKT, with a freezing agent in the form of water and glycol. The cooling systems have each been constructed for a nominal cooling capacity of 160 kW at an evaporation temperature of -35 °C.

Exact counterbalancing

In order to correctly construct the thermostating systems in accordance with the capacity, heat transfer medium and dimensions, the heat transfers to the apparatus have to be taken into consideration. Exact thermostating can only be achieved if heating and cooling systems are ideally coordinated with each other. To do this, the specialist requires data such as the type of reactor and size, type of agitator and interface area in order to determine the heat transfer coefficient "k".

Satisfied customers

Moreover, professional logistics were necessary for the realisation of the complex contract. All equipment arrived at the construction site in a 100 percent pre-tested, ready-to-connect condition. Since the systems had already been run through the entire temperature range in the LAUDA testing department and all measuring points had been calibrated, the only things left to do on site were making the electric and pipe connections. Since all processes were planned in advance by the LAUDA professionals, the systems could be started up in record time.



Only ready-to-be-connected systems are installed.



Fieldwork: The LAUDA service technician checks the electric connections of the systems.

Thermostats & Circulation chillers

Heating and Cooling systems

Measuring instrumentation

Dr. Helmut George, project manager at Sigma-Aldrich, commenting on his business partner: "We are very satisfied with the LAUDA systems: the heating and cooling systems are ideally coordinated to



each other. This is also confirmed by the good standard results. Entrusting thermostating tasks to the hands of one company has proven a very good move. We are also glad that, in LAUDA, we have found a partner with the necessary know-how in both cooling and heating technology".

Further information on this article:

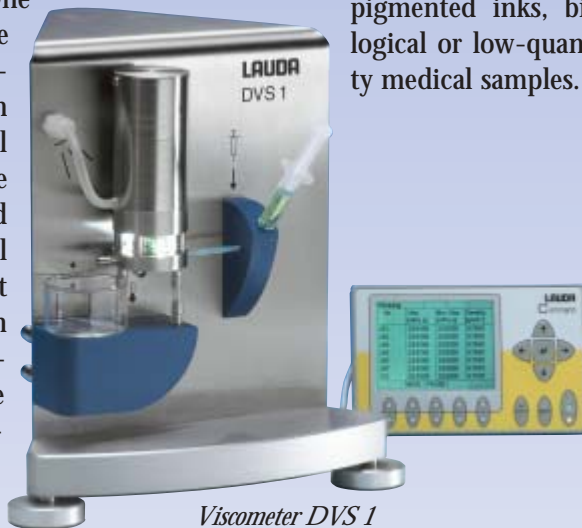
- ➔ www.lauda.de
- ➔ Fax reply coupon

High-tech products conquer the market

Practical and precise

LAUDA develops practical devices for its customers. One example of such is the DVS 1 viscosity measuring system which enables the parallel determination of the dynamic viscosity and the density of small amounts of sample. It is suitable for use in development laboratories and for the quality control of various liquids with approximate Newtonian flow properties.

Pre-requisite: combination with a LAUDA Ecoline Staredition thermostat. The high level of precision, the low amount of sample amounting to just a few millimetres and the simple operation via the separate Command control panel make the DVS 1 into an all-round device. Its



Viscometer DVS 1

advantages come to the fore where standard viscometry with glass capillaries fails, e.g. in the case of pigmented inks, biological or low-quantity medical samples.

Thanks to its self-explanatory user prompt, its easy cleaning of the capillaries and the compact structure, the device is suitable for the quality control of dynamic-critical surfactants. It can also be used for the fast determination of the surfactant content above the critical micelle concentration.

The measurements are taken separately, and documented using the necessary settings. The extremely compact stand-alone device offers everything required for the simple measurement of dynamic surface tensions in the laboratory or on the move.

Fully-automatic bubble pressure tensiometer

The family of tensiometers has gained a new member in the form of the new MPT C. In the form of the little brother to the PC-controlled tensiometer MPT 2 – which has long made a name for itself in scientific research – the step towards the full automation of the dynamic measurement of surface tension has been completed.



Easy handling with Command

Thermostats & Circulation chillers
Heating and Cooling systems
Measuring instrumentation



Tensiometer MPT C

Low cost tensiometer

Hundreds of TD 1 LAUDA tensiometers have been sold throughout the world since 1991. The demand for economical, easy-to-use tensiometers continues. The TD 1 C units, whose technology has been completely revised and which bear a new design, offer even easier handling due to the handy, removable Command console which has proven itself with LAUDA thermostats and measuring instruments. State-of-the-art processor technology allows extended documentation options.

Especially suitable for new-comers to the world of tensiometry or for

practical experience in schools or universities is the TD 1 C model with du Noüy ring and Wilhelmy plate according to international standards. Furthermore, the density, according to the Archimedes' principle, and smaller weights can be measured due to a newly-developed,

even more powerful force-measuring cell with a considerably enlarged measuring range.

The measuring table with the sample stage can be moved up and down in the complete absence of jolts and play by means of ergonomic adjusting screws, like a microscope, in order to lower the Wilhelmy plate to the sample surface or in order to determine the force maximum during the ring measurement.

By means of the high-resolution display of the Command module, the increase in wetting force during withdrawing of the ring can be followed and the maximum force can also be found without detaching the lamella.



For new-comers in tensiometry: TD 1 C

Further information on these products:

- ➔ www.lauda.de
- ➔ Fax reply coupon

Moving in international circles

Globally active

At the Arablab – Dubai, the trade fair for laboratory instruments, various devices from the LAUDA Proline and the LAUDA Ecoline Staredition range, measuring instruments for viscometry and tensiometry, were on show. The trade fair team welcomed expert visitors from the United Arab Emirates, Syria, Kuwait, Iraq, Iran, Qatar, Yemen, India and the Far East. The Middle East is a dynamic growth region: and that is why it is so important to nail one's colours to the mast there. In the form of this participation, the company increased its level of familiarity in this region, and also canvassed new

trade representatives in several countries.

Focus of fairs in America

The Pittsburgh Conference – abbreviated to Pittcon – is one of the most important trade fairs for laboratory equipment in the USA despite decreasing attendance. It is strategically important for LAUDA to consolidate its presence on this prosperous, North American market. It is for this reason that LAUDA had its own booth for the first time at this year's trade fair in Orlando (Florida), where it exhibited thermostats, circulation chillers and measuring instruments. In addition to the LAUDA represen-

tation, thermostats were also on show at the Brinkmann booth. Like at the Pittcon, LAUDA was also represented with its own booth at ACS Show (American Chemical Society), San Diego USA. Participation at AchemAmerica, Mexiko-City, enhance this year's american program.



The trade fair team at the Pittcon.

The next fairs and exhibitions

<u>Event</u>	<u>Location</u>	<u>Dates</u>	<u>Further information</u>
ILMAC 2005	Basel, Switzerland	24 – 27 May 2005	www.ilmac.ch
MIOGE 2005	Moscow, Russia	21 - 24 June 2005	www.mioge.ru
JAIMA SHOW 2005	Chiba City, Japan	31 August - 2 September 2005	www.jaima.or.jp/show/
ASSE Asia 2005	Daejeon, South Korea	7 – 9 September 2005	www.expotecgmbh.de
Chemie	Moscow, Russia	5 - 9 September 2005	www.eng.expocentr.ru/site/565
WTT expo 2005	Karlsruhe, Germany	4 – 6 October 2005	www.kmkg.de
Biotechnica 2005	Hannover, Germany	18 – 20 October 2005	www.biotechnica.de
BCEIA 2005	Beijing, China	20 - 23 October 2005	www.bceia.instrument.com.cn/bceia_1_index_en_exhibition
Expoquima	Barcelona, Spain	14 - 18 November 2005	www.expoquimica.com
CIA	Singapore	29 November – 2 December 2005	www.cia.germanpavillon.com

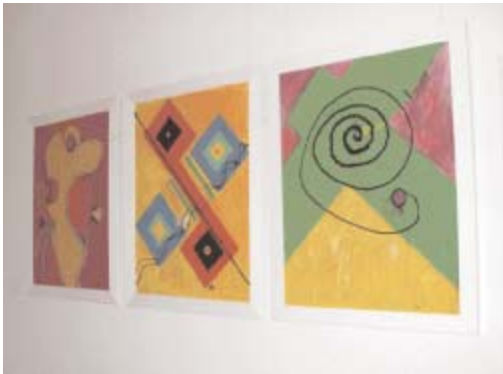
Entering the inner garden

As part of a vernissage, the exhibition entitled "In the inner garden" by Professor Mario Urlaß in the LAUDA FabrikGalerie was unveiled to around 140 guests. In the same format as in years gone by, visitors could delight in extraordinary sounds: an exquisite programme with modern compositions from Frank Kroll from Böblingen, performed on the soprano saxophone and bass clarinet, set musical highlights.

Mario Urlaß was born in 1966 in Zwickau. Mario Urlaß has been a professor for art and didactics at the University of Heidelberg since 2003. Mario Urlaß's maxim is: "First of all you have to master the form before you can destroy it". His multi-faceted and always somewhat mysterious paintings arise as the result of a frequently longer process of continual re-evaluation and reworking. Just as the human being evolves, the form and contents change, too. Professor Mario Urlaß's works now adorn rooms in the Ministry of Education and the Arts in Thuringia, the legal authorities and the Ministry for Science and Art in Saxony.



The picture shows organisers and artists (from left to right): Dr. Gerhard Wobser, Norbert Gleich of the Kunstkreis Lauda-Königshofen (local art association), Mario Urlaß, the musician Frank Kroll and Dr. Gunther Wobser.



Spring feelings

During the months of March and April 2005, the artist Astrid Ritter exhibited a true spectacle of colours and structures. Astrid Ritter displayed paintings created from a very special technique which she had just invented: it is a blend of pictures painted on the back of glass and collage in a unique combination. She neither wishes to nor can deny her background as an illustrator and icon painter, although she has now discarded all forms of severity.

Win with LAUDA ...

We are looking for the LAUDA device which has been in service the longest. The LAUDA DR. R. WOBSE GMBH & CO. KG company has been manufacturing laboratory thermostats, measuring devices and industrial heating and cooling systems for over 49 years. The LAUDA devices have excelled due to – amongst other features – their extremely long serviceable life.

Now we need some effort from your part:

Take a photo of the LAUDA device which has been serving you the longest and send it along with the serial number and, if possible, a description of the application to us.

Final date for entries: 10 October 2005.

An isolation mug will be awarded to 5 of the entries. The sender of the oldest LAUDA device in service will receive an isolation flask.

The submitted photos must be free of all claims and rights by third parties. LAUDA reserves the right to publish the photos in conjunction with the competition in any form it chooses to do so. The winners will be carefully chosen, and will be notified in writing. The judges' decision is final. Participation in the competition does not depend on requesting information. All information will be treated confidentially in accordance with the regulations of the Data Protection Law.

The solution to the competition in 2/2004 issue of *Therminus* was:

Point B (LAUDA Ecoline Staredition). Each of the following received a LAUDA art calendar:

- Krzysztof Gryzywnowicz, Lublin, Poland
- Dr. P. Günther, Cologne, Germany
- Eike Schmidt, Waiblingen, Germany

We wish you lots of fun with your calendar throughout the year!



Please use BLOCK CAPITALS. Thank you.

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First name: _____

Surname: _____

Department: _____

Position: _____

Company: _____

Street: _____

Postcode, Town: _____

Country: _____

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Telephone: _____

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Fax +49 (0)9343 503-188

Please send me the following information:

- WK 300 specification sheet
- WKL 100 specification sheet
- Specialised article on:
„The right temperature for fast syntheses“
- Specialised article on: „Process control in chemistry“
- DVS 1 brochure
- MPT C brochure
- TD 1 C specification sheet
- Tourist brochures „Liebliches Taubertal“