



Quality as a Matter of Principle
Expertise in Service



Leading Thermal Analysis.

NETZSCH

Worldwide Service





Rely on us - you are in good hands!

All over the world, the name NETZSCH stands for comprehensive support and competent, reliable service, before and after sale. Our vision is to offer you the best possible support at all times, wherever you may be.

You are very important to us!

Our qualified employees from the areas of applications, laboratory, technical service and counselling are pleased to answer your questions directly in a personal discussion, by phone, fax or e-mail.

We are at your service!

In special training programs tailored for you and your employees, you will learn to tap the full potential of your instrument.

The NETZSCH literature service will help you select appropriate measurement conditions and assist in interpretation of your results. For in-depth advice and consulting, our application experts will support you in any way they can.

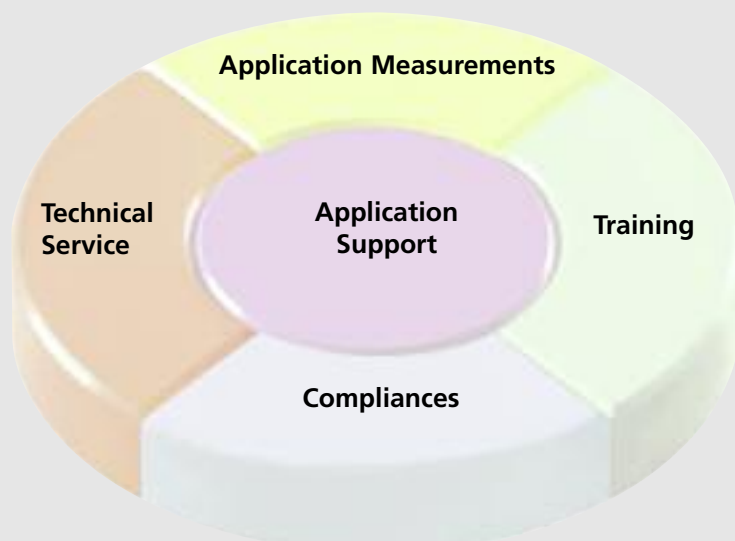
For the maintenance of your investment, you will be accompanied by our competent service team over the entire life cycle of your analytical instrument.

NETZSCH Analyzing & Testing - your Partner

Should capacity bottle necks occur in your lab, our applications laboratory will carry out any thermal analysis measurements or tests for the determination of thermophysical properties you may require. NETZSCH provides all necessary resources including know-how, hardware and software. A team of experienced application specialists is looking forward to carrying out your investigations. Define your requirements - we will deliver accurate measurement results and interpretations.

Our service for you:

-  **Application measurements**
-  **Technical service**
-  **Training courses & seminars**
-  **Compliances & validation service (in regulated areas)**
-  **Application support**



Application Measurements



Our Competence - Your Benefit

The **NETZSCH Analyzing & Testing** applications laboratories are proficient partners for nearly all thermal analysis issues. Our involvement in projects begins with painstaking sample preparation and continues through meticulous examination and interpretation of the measurement results. Our diverse measuring methods and over 30 different state-of-the-art gaging

stations will provide ready solutions for all your special questions.

Customers of our laboratory service stem from a wide range of large companies in industries such as chemical, automotive, electronics, air/space travel, racing, and polymer and ceramics.

Our locations

Besides our central laboratory in Germany, we also have laboratories in the USA (Boston) and China (Shanghai). Our expert staff and measuring systems guaranteeing fast and smooth information exchange are therefore available to you worldwide.

Please contact us at ngb-lab@netzsch.com



Our business spectrum for you

With the realm of thermal analysis and the measurement of thermophysical properties, we offer you a comprehensive line of the most diverse analysis techniques for the characterization of materials (solids, powders and liquids). Measurements can be carried out on samples of the most varied of geometries and configurations. Consult with the experts in our applications labs to choose the best-suited measuring method for your specific needs. You will be working with scientists (physicists, chemists, materials scientists) possessing consolidated knowledge about the most varied of methods and materials spectra. Confidentiality is of course guaranteed.

Method	Measurement results	Temperature range	In accordance with the following standards (excerpt)
Dynamic Scanning Calorimetry (DDK/DSC)	Phase transition temperatures and enthalpies, specific heat	-180°C to 1650°C	ASTM C 351, D 3417, D 3418, D 3895, D 4565, E 793, E 794 DIN 51004, 51007, 53765, 65467 DIN EN 728 ISO 10837, 11357, 11409
High-pressure DSC (up to 15 MPa, 150 bar)	Phase transition temperatures and enthalpies, specific heat	-50°C to 600°C	ASTM D 5483, D 6186, E 1782, E 1858, E 2009
Differential Thermal Analysis (DTA)	Phase transition temperatures	-180°C to 2000°C	ASTM C 351, D 3417, D 3418, D 3895, D 4565, E 793, E 794 DIN 51004, 51007 ISO 10837
Thermogravimetry (TGA, STA)	Mass changes, corrosion, thermal stability	RT to 2000°C	ASTM E 914, E 1131, E 1868 DIN 51006 ISO 7111, 11358
Gas Analysis	Characterization of gases emitted by means of MS or FTIR, coupled to a TG or STA	-120°C to 1650°C	
Dilatometry and TMA	Dimensional changes, coefficients of thermal expansion, density changes	-180°C to 2800°C	ASTM D 696, E 228, E 831, E 1363, E 1545, E 1824 DIN 53752
Dynamic Mechanical Analysis (DMA)	Viscoelastic behavior, E modulus	-170°C to 600°C	ASTM D4092, D 4065, D 4473, D 5023, D 5024, D 5026, D 5418, E 1640, E 1867 DIN EN 53440 DIN EN ISO6721
Heat Flow Meter and Guarded Hot Plate	Thermal conductivity of insulating materials	-160°C to 700°C	ASTM C 177, C 236, C 518, C 335, C 976, D 5470, E 1225, E 1530, F 433 DIN EN 12667, 12939, 13163 ISO 8301, 8302
Flash Methods	Thermal diffusivity and conductivity	-125°C to 2000°C	ASTM E 1461 DIN EN 821
Dielectric Analysis	Curing behavior of reactive polymers	RT to 400°C	ASTM E 2038, E 2039

Your personal advantage



You will receive high-precision measurement results and valuable interpretations from us in the shortest possible time. This will enable you to exactly specify new materials and components before actual deployment, minimize risks of failure, and gain decisive advantages over your competitors. For production problems, we can work with you to analyze causal issues and

work out solution concepts. The relatively low expense of investment in our test measurements and services will pay off by greatly reducing your down times and reject rates. In addition, you will be able to increase the satisfaction of your existing customers and to win new ones.

Technical Service



NETZSCH Analyzing & Testing offers you a broad service spectrum for your thermal analysis instruments, from basic services to maintenance of value for your investment.

Decide for yourself which of our services best fit your user profile to guarantee a balanced relationship between productivity, flexibility and preventive measures. You can ensure that your investment is in good hands for its entire life cycle.

Our services in detail:

Installation and commissioning

Our qualified employees install your analytical instruments, carry out a complete configuration and parameterization, and provide your operation personnel with comprehensive basic instructions. Your instrument is then professionally put into commission and can immediately be put to use.

Hotline service

Our hotline service provides you with rapid assistance by telephone. Do not hesitate to contact us with your technical questions or concerns. Your inquiry will usually be handled within 24 hours.

Software update service

Regularly updating your software is important for dependable and timely instrument performance. Software features, service tools and the comprehensive help system are critically reviewed and revised for every new version to help you achieve the full potential of the entire measuring system.

Moving service

Should you need to install your instruments at a new location, we will take care of all aspects of the move, including planning of the necessary resources, professional dismantling, transport, re-commissioning and calibration. Our qualified service staff can also use this opportunity to provide your operating personnel with instruction in hardware or software.

Technical information service and documentation

Do you need a handbook or further information about your NETZSCH instruments? Contact us and we will provide you with quick and straightforward assistance.

Please contact us at
ngb-service@netzsch.com



Spare part service

For newly installed instruments, we guarantee spare part availability of at least 10 years. Almost all spare parts can be shipped from our warehouse within two working days after receipt of your order. We use only original NETZSCH spare parts. Should on-site repair be impossible or inefficient, our exchange and loan services will offer you a suitable replacement for the duration of the repair time.



Flexible qualification agreements and calibration service

You decide yourself how often your instruments should be reviewed. We guarantee customized maintenance frequency. The planning and budgeting of this service is straightforward and your administrative effort is correspondingly small. Your service history manual gives you a quick overview over your instrument configuration and the due date for the next instrument qualification. Our service staff possesses the necessary expertise and is regularly trained in maintenance, repair and validation, so services can be carried out on-site efficiently and professionally.

On-site repairs

Implemented diagnostic systems in our instruments enable quick and specific problem-solving for your NETZSCH instruments. Our service personnel can thereby immediately localize the problem and re-establish functionality. We can offer you emergency service based on the application area of your instruments, with response times of your choice.



Our service for you

- Installation and commissioning
- Hotline service
- Preventive measures
- Calibration service
- IQ / OQ / PQ
- On-site repairs with emergency service
- Moving service
- Technical information service
- Definition and shipping of spare parts
- Exchange service

To your advantage

- Higher effectiveness of your instruments
- Low susceptibility to failure
- Longer instrument life
- Advantageous cost of ownership return

Training Courses and Seminars

The advantage to you

The multi-faceted tasks in laboratories and the frequent short time require effective methods for training users in new techniques. Self-training is often too time- and cost-intensive. Even experienced users of Thermal Analysis can benefit from new ideas and stimuli for their work resulting from exchange with other users.

Our offer

Individual training sessions, intensive courses, users' meetings and special seminars.

Wherever you are - we are at your service

We offer training and seminars at your location (on-site training), in Selb, in Boston, in Shanghai and at many other locations around the globe.

Presence round the year

You can find our schedule of events on our website or in our training calendar, or ask your personal customer consultant.

Your competent partners

Qualified trainers with technical/scientific education and many years of experience in Thermal Analysis are looking forward to meeting you personally.

Individual training sessions

NETZSCH Analyzing & Testing is at your side from the beginning! Already following installation and commissioning of your instrument, we give you valuable tips on how to operate your hardware and software. In individual training sessions - the topics of which you compile yourself - we work out optimal strategies with you for solving your measurement tasks. Individual training courses can take place at your location or at NETZSCH.

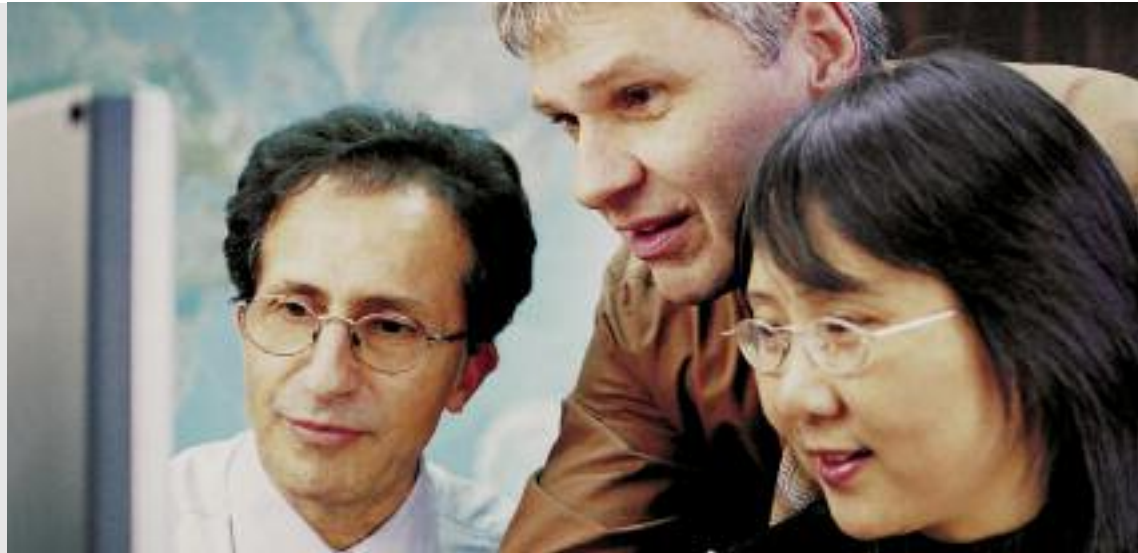
Both variations have appeal: For groups we highly recommend a training session at your site. Alternatively, the training can take place in one of the NETZSCH applications laboratories – where you can concentrate 100% on the training.

Seminars

Seminars, training and intensive courses are the right forum to discuss measuring methods and conditions, calibration, sample preparation, measurement execution, and evaluation and interpretation with other users.

Training and intensive courses offer a diverse mix of theory and practice. No more time is spent on the theoretical basics than is absolutely necessary. Priority is always given to practical application and to answering your questions. For most events of this type, you





may bring some of your own samples to analyze and may discuss measurements that have already been carried out, on paper or in electronic form. Special seminars, for example "Evaluation and Interpretation of Measurement Curves", should help you recognize sample effects and to draw the correct conclusions from your measurement results. At the "Polymer Seminars", various users from industry and academia give insight into the everyday practice of thermo-analytical testing of polymer materials with DSC, TG, DMA, TMA, DEA, etc.

"Kinetics" familiarizes you with the NETZSCH Thermo-kinetics program.

Regular users' meetings (e.g. LFA, DMA, couplings) foster information exchange between you, the other participants, and NETZSCH, and ensure that you are always kept up-to-date.

Contact us at ngb-academy@netzsch.com

Calibration and Validation Service



Your goal: full compliance - We help!

In a regulated environment (GMP, GLP, 21CFR Part 11, etc.), everything depends upon your measuring system always functioning properly and meeting all legal requirements. In order to efficiently support you in this endeavor, we have put together specially tailored service packages for the chemical and pharmaceutical sectors extending above and beyond our general service solutions:

Qualification of the measuring systems

After installation and commissioning, specially trained service engineers carry out the installation qualification (IQ) and operation qualification (OQ) and

assist you with the performance qualification (PQ) of your computer-supported measuring system. You can thereby select between standard documents and ones individually tailored to your IQ/OQ/PQ requirements.

Software validation

Our software validation support is a fixed constituent of the qualification package.

Calibration service and calibration certificates

Besides on-site calibrations following installation of a new instrument, regular recalibrations are included in our service spectrum.

Re-qualifications

To ensure that your instrument meets the relevant specifications and standards after extended periods of operation, our service specialists arrange with you for tests to be carried out on your system - either just once or at regular intervals.

Upon request, we also carry out re-qualifications following installation of a software update.

Support in creating SOPs

We are happy to provide you with support in creating Standard Operation Procedures for new or existing instruments. Contact us!

Contact us at ngb-service@netzsch.com



Your questions

- Which gases are emitted from my material at the given processing temperatures?
- How does my sample behave under corrosive conditions?
- How can I reduce the cycle time for my process?
- Is my material contaminated with other components?
- How pure is my pharmaceutical sample?
- Why does the varnished plastic part break?

Modern thermoanalytical measuring techniques offer excellent tools for answering such varied questions like these in

- Research & development
- Quality assurance
- Failure analysis
- Process optimization

Our support

Proficient experts in our "Sales and Applications Support" (S.A.S.) team can help to answer your questions by phone, e-mail or in a personal conversation. You will be presented with ideal solutions for all issues beginning with conceptual formulation, choice of the optimal measuring method and instrument, and determination of the best-suited measurement parameters, all the way through interpretation of your final data.

Decades of practical experience with measurements and evaluations have been incorporated into the various NETZSCH application books:

NETZSCH Annual 2000 - Characterization of Pharmaceuticals

TA for Polymer Engineering: NETZSCH Annuals for Science and Practice (Annual Volumes I - III)

Focus on: Thermal Analysis for Polymers

Focus on: Thermal Analysis for Paints

Coupling of Thermal Analysis and Gas Analysis, Techniques and Applications (TA-MS, TA-FTIR)

Ceramic Handbook
TA for Ceramic Materials

Take advantage of these rich sources of information as the basis for your day-to-day work; order today at www.netzsch-thermal-analysis.com.

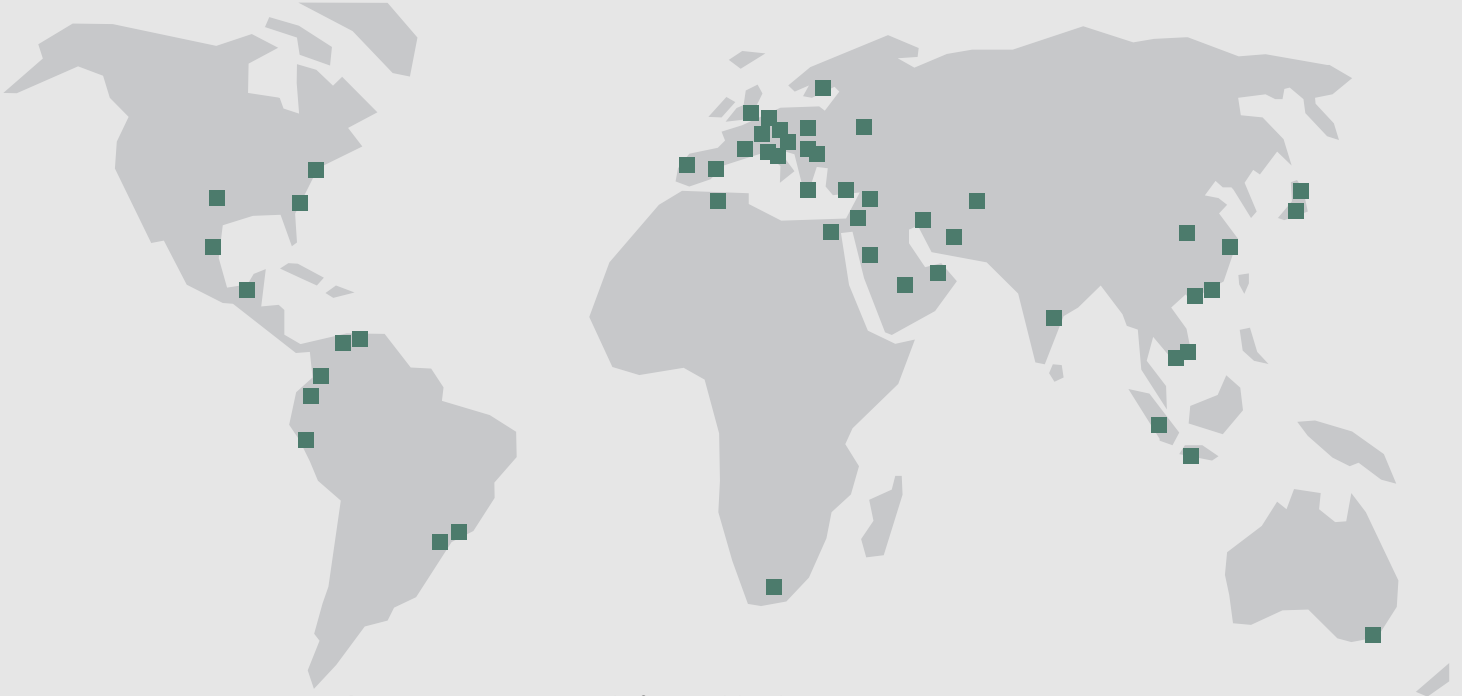
Our applications-oriented Topical Seminars with guest speakers at national and international fairs, symposia and exhibitions are held in high regard.

Contact us at
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Leading Thermal Analysis

Global Service Network



Service at **NETZSCH Analyzing & Testing** stands for worldwide expertise, professionalism and the utmost customer satisfaction. You can rely on it!

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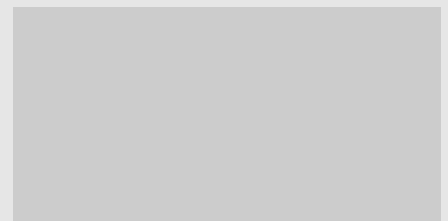
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