

Analytically reliable.
DEKRA laboratory testing.





DEKRA. Giving the green light.

As the largest expert organization in Germany, DEKRA offers you comprehensive expertise on the topics of safety, tested quality, and environmental protection. Thanks to our extensive network, DEKRA's range of services is available to you in your location – across Germany as well as in many European countries.

Accredited laboratories and on-site service.

For years, long-term experience in material testing combined with a wide range of services in chemical analysis have made DEKRA the first point of contact for automotive manufacturers, suppliers, and insurers. Many clients in systems engineering and manufacturing also appreciate our expertise and efficiency in the field of environmental and product analysis.

These services are performed by our specialized test laboratories, which work closely together for you under the umbrella of DEKRA and possess all the necessary accreditations to provide you with legally compliant test results. Both the DEKRA Laboratory for Environmental and Product Analysis and the DEKRA Laboratory for Materials Engineering and Damage Analysis are accredited according to DIN EN ISO/IEC 17025 Europe-wide. Our experts in

food contact materials possess the German Food and Feed Code (LFGB) authorization as approved cross-checking experts; our experts in soil studies possess the authorization according to Sect. 18 of the German Federal Soil Protection Act (BBodSchG).

With a focus on waste analysis, our laboratory is recognized as a BGS testing laboratory for secondary fuels. Our DEKRA Laboratory for Technical Textiles and Films possesses recognition as a testing, monitoring, and certification body according to the state building regulations and the building regulation list.

When it comes to inspections and sampling, we are there for you. Simply use our service right where you need it: right at your premises.

With DEKRA, you enjoy these advantages.

- > You have an independent, experienced partner at your side
- > You receive all the services from one source and have only one contact partner
- > You reduce your internal analysis and monitoring workload
- > You gain legal certainty by working with our accredited laboratories
- > All DEKRA laboratories are subject to continuous internal and external quality control
- > You maintain an overview of all the environment and product-related analyses at your company



Analysis with maximum safety.

All material flows at the company are subject to two basic requirements. With materials or raw materials, the focus is on the desired quality; with waste materials, harmful substances or hazardous substances, on the other hand, the focus is on safety with a view to people and the environment. DEKRA is your partner for both aspects. Our laboratory experts are familiar with each material and provide you with highly professional analysis – in cost-aware, safe, quick, and reliable fashion.

Environmental and hazardous substances analysis.

Harmful substances in the air, at the workplace, in waste, water or the soil are rarely visible but often dangerous. It is essential to comply with statutorily prescribed limits and recommendations for the safety of people and the environment. Irrespective of whether it be in a commercial, private or public environment. The DEKRA Laboratory for Environmental and Product Analysis is your central accredited service provider for all chemical analysis issues:

- > Harmful substance measurements for soil, air, and water
- > Waste analysis and fuels
- > Indoor and building pollutants
- > Hazardous substances at the workplace

Product analysis for industry and retail.

As an independent, neutral service provider, DEKRA tests the physical and chemical safety of your products, either within the framework of European or national legislation or according to agreed standards. Our modern testing laboratories support you as needed in your internal measurement and analysis activities within the framework of research and development, quality assurance, and incoming goods inspections. Take advantage of our expertise in a wide variety of processes and product areas:

- > Production-accompanying analysis
- > Laboratory analysis for consumer goods
- > Technical textiles and films
- > Car components and working materials

Materials engineering and damage analysis.

The requirements for modern components are high, both technically and economically. To rule out material failures in new developments and to understand the causes of occurring damage, we offer you leading experience and expertise in the testing of metal and plastic materials. Thanks to its extensive range of services, the DEKRA Testing Laboratory for Materials Engineering and Damage Analysis is the ideal partner for developers, production companies, and insurers:

- > Mechanical, technological, and metallographic testing
- > Corrosion testing and environmental simulation
- > Plastics testing
- > Material damage expertise



Harmful substance measurements for soil, air, and water.

As natural resources of our future, soil, breathable air, and ground water are important goods that need to be protected. Therefore, pollution from commercially or industrially used locations, from waste deposits, and other contaminated sites is subject to legal threshold values and is to be closely monitored. Particularly fast analysis and forecasts are required in the case of accident-induced environmental damage.

Your safety is our element.

DEKRA helps you identify and assess impurities. As a recognized analysis center according to Sect. 18 of the German Federal Soil Protection Act (BBodSchG), we analyze soil and water samples for pollution in gas, liquid, and solid form for you.

Both our environmental laboratories in Halle and Stuttgart and the sampling by our experts are accredited according to DIN EN ISO/IEC 17025. This ensures you receive fast, reliable results from all our services.

Do you want to cover yourself beyond the prescribed emission measurements and determine the exact composition of your airborne pollutants, be it through evaporation or combustion? We are there for you – from the analysis of gaseous, liquid or solid samples to test chamber tests to sampling and measuring on site.

DEKRA also offers you the entire range of problem-solving approaches and services when it comes to dealing with contaminated sites. We assume all probing, sampling, measuring, and laboratory analysis for you from one source. You thus receive a clear basis for deciding whether and which renovation measures are required.

Our services include:

- > Emission and immission determination
- > External air analysis
- > Soil and soil air analysis
- > Groundwater and surface water analysis
- > Groundwater monitoring and model calculation
- > Seepage analysis
- > Waste water analysis
- > Contaminated site exploration and renovation
- > Contaminated site consulting for plot purchases, changes in use, and building work
- > Expert opinions on renovation plans

Waste analysis and fuels.

Type separation and recycling, incineration and disposal – the treatment of waste is a highly complex process that is largely reserved for certified specialist companies today. Dealing with waste, as well as other combustibles, safely and economically requires that their composition and the usability of their components be known.

From material flow management to declarations.

Waste is nearly always formed by a mixture of valuable and problematic materials, of combustible and non-combustible components. The DEKRA Laboratory for Environmental and Product Analysis offers you a large number of fast, reliable analyses for safe use and disposal.

Using state-of-the-art analysis processes, we determine the physical and chemical material data as well as harmful substances content and fuel properties – depending on what you specifically want to know. Thus, you always have an overview of the material flows at your company. The locally based DEKRA experts are available to you for measurements and sampling.

In a very short time, you will receive an accurate and meaningful test report. We are also happy to advise you on waste declaration matters and on the specifications of the Landfill Directive (DepV).

We also perform recognized laboratory analysis for quality assurance and for cause determination in cases of damage for wood pellets and solid bio-fuels. Talk to us. Whatever the burning question is, we are there for you.

Our services include:

- > Analysis of waste, household garbage, building rubble, waste wood
- > Testing of secondary and alternative fuels (RAL 724, 727)
- > Testing of wood pellets
- > Testing of solid bio-fuels
- > Sewage sludge analysis
- > Waste water analysis
- > Soil analysis as part of contaminated site renovations and explorations
- > Declaration analysis
- > Assessment of dumping capability
- > Landfill monitoring
- > Analysis of regenerative raw materials and wood pellets





Indoor and building pollutants.

Emissions from building materials, furnishings or floor coverings, fire residues or biogenous harmful substances such as mold can endanger health and cause high renovation costs. Therefore, a careful analysis is advised in the event of complaints as well as for assessing risks involved in planned rebuilding and modernization work.

Causes and risks safely under control.

DEKRA offers you safe and fast help in searching for emission sources. By means of ambient air measurements, our experts determine the existing pollution due to particles, fibers, as well as chemical and organic substances. By means of test chamber tests on material samples, the origin of these harmful substances can be clearly determined so that targeted measures can be taken to eradicate the pollution.

Our accredited testing laboratory supports you in all matters related to air quality in buildings: from the on-site indoor pollutant analysis including sampling of air and materials to the detailed analysis to customized renovation advice. We thus help you to prevent health risks and to safely adhere to all prescribed threshold values, including for sustainability certificates such as DGfB, BNB, BREEAM or LEED.

Our range of analyses for indoor and building pollutants includes:

Chemical substances	Fibers and particles	Organic substances
<ul style="list-style-type: none"> > Biocides > Flame retardants <li style="padding-left: 20px;">Formaldehyde > Wood preservatives > Solvents/VOCs > PCBs > PAH > Plasticizers > Carbon dioxide > Carbon monoxide > Ozone 	<ul style="list-style-type: none"> > Asbestos and other inorganic fibers > Artificial mineral fibers (AMF) > Diesel soot > Fire soot > Dusts 	<ul style="list-style-type: none"> > Bacteria > Endotoxins > Yeasts > Legionella > Microbial volatile organic compounds (MVOC) > Mold fungi



Hazardous substances at the workplace.

Dealing with hazardous substances at the workplace harbors health risks, not just in the case of contact with the skin or increased risk of fire and explosion. Air pollution by gases, vapors, aerosols, and dusts – individually or as material mixes – is also to be monitored closely, so that the applicable workplace thresholds are not exceeded.

Reliable measurements at offices and companies.

As a test laboratory according to DIN EN ISO/EC 17025 and an accredited measuring laboratory according to Sect. 7 Para. 10 of the Ordinance on Hazardous Substances (GefStoffV), DEKRA is your expert contact for:

- > Workplace measurement and workplace analysis according to the Technical Rules for Hazardous Substances (TRGS) 400/402 and the German Ordinance on Hazardous Substances (GefStoffV)
- > Risk assessment according to GefStoffV and the biological agents regulation (BioStoffV)
- > Analysis according to TRBA
- > Special measurement
- > Measurement in own interest
- > Review of the effectiveness of technical protective measures
- > Residual soiling analysis

Our range of analyses for indoor and building pollutants includes:

Aerosols	Fiber dusts	Organic substances	Organic gases and vapors	Miscellaneous
<ul style="list-style-type: none"> > Respirable-dust content (inhalable dust) > Alveolar dust content (alveolar dust) > Metals > Diesel soot (DEE) > Organic contents 	<ul style="list-style-type: none"> > Asbestos fibers > Other inorganic cancer-inducing fiber dusts 	<ul style="list-style-type: none"> > Halogens > Hydrogen halides > Other inorganic acids > Non-metal oxides 	<ul style="list-style-type: none"> > Simple solvents > Alcohols > Aldehydes > Phenols > Glycol derivatives > Amines > Epoxides > Organic acids > Acrylates 	<ul style="list-style-type: none"> > Cooling lubricants > PAH > Isocyanates > Other compounds



Production-accompanying analysis.

A crucial requirement for efficient production is the precise coordination of material flows, technologies, and processes. Successful material flow management includes not just quantitative aspects, but also qualitative aspects: the quality of raw materials and materials as well as risks from harmful or hazardous substances.

Safety at every stage.

We offer tailored chemical analysis and material testing throughout the entire value creation process for industrial firms, suppliers, retailers, and providers. We analyze for you the quality of the materials you are using, identify possible pollutants, and support you in dealing with waste, emissions, and hazardous materials. You thus achieve the greatest possible safety for humans and the environment – and thus also for your products – with your processes.

Our analysis range includes all common harmful and hazardous substances according to REACH, RoHS and the Chemicals Prohibition Ordinance (ChemVerbotsV). In addition to the harmful substance content of material samples, we also determine for you the harmful substance migration in the event of contact with other media and perform test chamber measurements to

determine harmful substance emissions. We are available to take samples for you nationwide.

Our experts also determine the physical and chemical properties of preparations, products, and waste to assess their technical safety within the framework of REACH and CLP as well as hazardous material transport law (ADR). Through analysis and expert advice, we help you to classify hazardous goods properly.

However, as a neutral partner with accredited testing laboratories in line with DIN EN ISO/IEC 17025, we offer you not just tests and analysis according to the applicable legal requirements, but also, at any time, according to your own, specific quality specifications. Talk to us, we will be happy to advise you.

Our services include:

- > Workplace analysis
- > Incoming goods inspection
- > Materials and parts testing
- > Analysis of harmful substances
- > Migration tests, authenticity and sensory tests (German Food and Feed Code)
- > Industrial, boiler, and feed water analysis
- > Waste water and waste analysis
- > Determination of physical and chemical characteristics
- > Consultancy and training for REACH and GHS
- > Hazardous material analysis and classification
- > Safety data sheets and free sale certificate
- > Expertise and damage analysis

Laboratory analysis for consumer goods.

To guarantee the consumer is protected in times of global goods movement, the legislator has high requirements of products' chemical safety. Regulations such as REACH, RoHS, the Toy Directive 2009/48/EC and the German Commodities Ordinance prescribe detailed and regular tests.

Extensive expertise in all sectors.

As a manufacturer, retailer or importer of consumer goods you are responsible for their safety and marketability. This not only requires in-depth knowledge of the applicable laws, regulations and standards, particularly if you operate internationally. It also requires a high degree of chemical analysis testing expertise. DEKRA offers you both: for an extensive range of products, from products with food contact to toys to electrical devices.

Our experts at the DEKRA Laboratory for Environmental and Product Analysis support you as part of your quality assurance, with product development as well as with initial sampling and incoming

goods inspections. We carry out migration and harmful substances tests, residue and damage analysis and determine key physical chemical data. Depending on needs, we supplement your internal measuring and analysis work with our inspection and testing services or take it over completely, at international level too.

As a neutral, independent laboratory service provider, we are also ready to provide you with advice, for example on matters related to chemicals law, in creating a test plan or with tailored training. DEKRA's expertise shows you the way through the labyrinth of international laws, directives, and standards.

We support you in these product areas:

- > Food contact materials
- > Films and plastics
- > Metals, glass, ceramics, wood
- > Tools and gardening equipment
- > Electrical appliances
- > Toys
- > Decoration and advertising articles
- > Candles
- > Jewelry and accessories
- > Clothing, shoes, leather goods
- > Furniture
- > Musical instruments
- > Washing, cleaning, and purifying agents





Car components and working materials.

Particularly high requirements are set for the safety and material resistance of vehicle parts, accessories, working materials, and care products. Besides the fulfillment of defined quality standards, operational and production residues as well as harmful substances in the vehicle interior are put particularly to the test.

Leading expertise from one source.

With its decades of expertise in the automotive sector, DEKRA offers a complete range of laboratory tests for car products of all types. This range includes structural components, equipment and accessory parts as well as working materials such as engine oils, lubricants, fuels, coolants and brake fluids, and cleaning and care products including waxes and sealings, deicing agents, car wash chemicals, workshop and floor cleaners as well as oil and chemical binders and de-icing salt.

We test your products for harmful substances, compatibility, and quality, according to national and international standards, according to the established DEKRA

criteria catalogs, and, if you wish, according to your own requirements. Moreover, our experts are available to experts, insurance companies, and authorities for expert special analysis to determine the causes of damage.

However, meaningful test reports and expert reports based on precise analysis are only part of what you can expect from us. Use the car expertise of our laboratories to set your quality criteria and quality standards for assessing product quality appropriately in advance.

Our services include:

- > Analysis of the emission pattern of materials and components
- > Residual dirt analysis of components
- > Harmful substance analysis (GADSL, PAK, REACH, RoHS)
- > Light resistance test
- > Assessment of the flammability/ combustibility of components
- > Suitability of accessories for use
- > Quality and performance test of working materials
- > Chemical and physical analysis
- > Contents and material characteristics
- > Impurities
- > Damage and residue analysis
- > Material compatibility test
- > Occupational health assessment
- > Environmental assessment



Technical textiles and films.

Innovative architecture and construction engineering require efficient, innovative materials. Today, technical textiles and films enable trend-setting and sophisticated solutions for roofs and facades. We help you implement these special projects safely – from the start.

Safety for membrane and lightweight construction.

To ensure maximum safety in textiles and lightweight construction engineering, consistent quality management is required in which the independent monitoring and testing of manufacturing, production, and assembly processes as well as of materials and detailed solutions are given first priority. This is the only way to ensure sufficient resistance to the occurring mechanical, thermal, and weather-induced pollutants.

DEKRA helps you to ensure the requisite quality of material and construction. As independent experts, we assume the initial testing, plant inspections, and production inspections for the issue of product certificates and we accompany you reliably in obtaining consent on an individual basis for your construction project. Our Laboratory for Technical Textiles and Films is

recognized by the Deutsches Institut für Bautechnik (German Institute for Construction Engineering, DIBt) as a testing, monitoring, and certification body for films and coated fabrics in accordance with state building regulations.

With more than three decades of experience, our experts support manufacturers and planners in development and quality assurance as well as builders in the subsequent use of the products. Here, we are at your side as an experienced partner not just for all structural problems, but also for cases of damage as well as in the development of project-specific test and measuring equipment. Our independent expertise was and is sought-after for a large number of spectacular lightweight construction projects worldwide.

Our services include:

- > Material testing and chemical analysis
- > Environmental simulation (temperature, weathering)
- > Product testing and certification
- > Independent quality assurance
- > Production and manufacturing monitoring
- > Assembly monitoring
- > Damage analysis and assessment
- > Structural consulting
- > Technical consulting in all project phases
- > Consulting on the development of new materials and detailed solutions
- > Testing devices and test benches for long-term and construction site monitoring
- > Expert statement (consent on an individual basis, general building inspectorate approval)
- > Environmental assessment and sustainable building (EPD, LCA)



Mechanical, technological and metallographic tests.

In the manufacture and development of components, material failure is no rarity – with serious consequences for the safety of the end product. Destructive as well as non-destructive materials tests have therefore become an essential component of quality assurance in many industrial sectors.

A leading edge through tested quality.

With its expertise and reports, the DEKRA Testing Laboratory for Materials Engineering and Damage Analysis provides you with the proof of goods monitoring that is legally required in many areas. Independent of legal stipulations, the testing by our experienced experts also allows you to recognize and remove error sources at an early stage. A leading edge that really pays off.

We analyze both standardized samples as well as finished, complex components for you using all the current processes according to your individual requirements too. In addition, we offer you a large number of flexibly usable, non-destructive testing methods and metallographic tests from one source.

Whether the focus is on controlling heat treatment processes, material composition, the desired material thickness or physical properties such as hardness or breaking strength, all required values can be determined quickly and reliably thanks to the wide range of test services. As a result, you gain a valuable sense of security and save time and costs.

Additionally, our experts advise you on all matters of material and process optimization as well as damage prevention with the highest expertise. If required, you can receive well-founded material recommendations for your specific use and processing conditions. Talk to us. We will be happy to support you.

Our services include:

- > Tensile and pressure tests
- > Impact tests
- > Hardness and micro-hardness tests
- > Folding tests
- > Dynamic tests
- > Radiography and ultrasonic tests
- > Stress analysis using DMS technology
- > Wall and coating thickness measurement
- > Metallography
- > Structure tests
- > Thin section production
- > Analysis of the point of break
- > Determination of chemical composition
- > Certification of concrete steel and metal construction products (DIN 488, building regulation list A)



Corrosion testing and environmental simulations.

Pollution caused by environmental influences, such as temperature fluctuations, humidity, UV weathering and corrosive media, can seriously negatively affect the function and lifetime of technical products. Therefore, as a manufacturer you must precisely know the resistance and properties of the materials, construction elements and protective coatings used by you.

Safety for a long product life.

With state-of-the-art environmental simulations, DEKRA provides you with all the data required to test the suitability and reliability of your materials or products under environmental conditions. Under controlled conditions, our efficient simulators replicate all the environmental stresses to be expected for the test object and document its condition, function, and failure rate over the desired period.

By applying known parameters, the naturally occurring aging process can be accelerated many times over so that reliable, conclusive results are already available after a short time.

In this way, it can be established for example using corrosion tests whether protective systems, such as metallic, inorganic or organic layers on a substrate, are up to the real demands in their installed state.

The DEKRA Laboratory for Materials Engineering and Damage Analysis is accredited for corrosion, humidity, climate, and UV weathering and offers you first-class testing expertise, both for standard tests and for customized tests according to your own specifications.

Our experts will be happy to advise you.

Our services include:

- > Salt spray tests (NSS, AASS, CASS)
- > Condensation testing climates with and without SO₂
- > Combined cyclic corrosion tests
- > Cyclic temperature and climate tests
- > UV weathering
- > Color and gloss measurements
- > Stone chip resistance of coatings
- > Testing of resistance to wear, adhesive strength, and resistance to scratching
- > Testing of badges/adhesive seals
- > Testing of retro-reflective label plates (DIN 74069)
- > Testing of galvanized drinking-water pipes (German Technical and Scientific Association for Gas and Water, DVGW)
- > Corrosion protection and corrosion expertise on site



Plastics testing.

Plastics offer a uniquely vast breadth of different properties. Depending on the original material, manufacturing process, and use of additives, their thermal, chemical, and mechanical properties can be modified to the respective need. However, careful material tests are required to ensure that the desired properties are actually achieved in practice.

Vast expertise for a vast materials sector.

As a manufacturer or processor of plastic products you can only comply with high quality standards if you accurately know the material characteristics and material properties. These include mechanical properties such as hardness, malleability, breaking strength, impact strength and elasticity, which can be determined using tensile, pressure and bending tests as well as special tests.

Among other things, thermal tests show the melting and crystallization properties of plastic and physical and chemical tests show its resistance to light, weathering, and material influences.

The composition of plastics as well as its solvent, fiber, and filler content can be identified as part of materials analysis. The scanning electron microscope provides information about the surface and fracture structures of plastic parts right down to the micro structure.

DEKRA gives you safety in the use of plastics. The experienced materials experts in our laboratories examine your plastics specimens and samples using state-of-the-art testing technology and many years of expertise. Whether regarding solids, powder or liquids, we provide you with solid results quickly and reliably. You thus receive recognized proof of the desired material properties and chemical composition of your materials.

Our services include:

- > Identification of plastics
- > Determination of the glass transition area
- > Determination of the melting temperature
- > Detection of solvents
- > Detection of fibers and fillers
- > Testing the effectiveness of stabilizers
- > Testing the hardening properties of thermosets
- > Determination of crystallinity
- > Testing using the scanning electrode
- > Tensile tests
- > Pressure tests
- > Bending tests
- > Charpy impact strength and notched impact strength
- > Shore A and shore D hardness testing

Material damage expertise.

Damage to structures, technical building equipment, machinery or components result today in an increasingly complex technical environment. The possible causes of damage are extremely diverse. Therefore, great analysis expertise is required to record the damage accurately and fully and reliably determine the amount of damage.

Expertise for insurance cases and product development.

Expertise from DEKRA provides clarity: so that any resulting damage can be effectively regulated and future damage can be prevented. At our state of the art damage center in Saarbrücken we determine the scope of damage and causes of damage for you and carry out plausibility tests, if required. To this end, we use the whole range of optical, mechanical, metallographic, and chemical-analytical processes.

We carry out cause studies specifically for industrial customers in order to clarify how the damage came about, develop methods for future prevention of damage

or to preventively identify and remedy any possible sources of damage. As a result, we help you save costs and prevent production downtime. As we assess cases of damage against a specific insurance background, our customers from the insurance sector have all the relevant statements on the table without any time-consuming follow-up research.

First-class laboratory analysis and the DEKRA experts' extensive practical experience are the basis for sound expertise that you can always rely on.

Our services include:

- > Structural damage analysis
- > Tests with tap water damage
- > Assessment of component damage on machinery and plants
- > Assessment of fire damage to metal constructions
- > Lock and key expertise
- > Structure tests and assessment
- > Determination of causes and mechanisms of fractures on metal and plastic workpieces
- > Photographic documentation on a macroscopic and microscopic level
- > Expertise on preservation of evidence





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