

ANALYTICAL SUPPORT FOR THE **CONSUMER ELECTRONICS**
INDUSTRY FROM INCEPTION TO FINAL PRODUCT



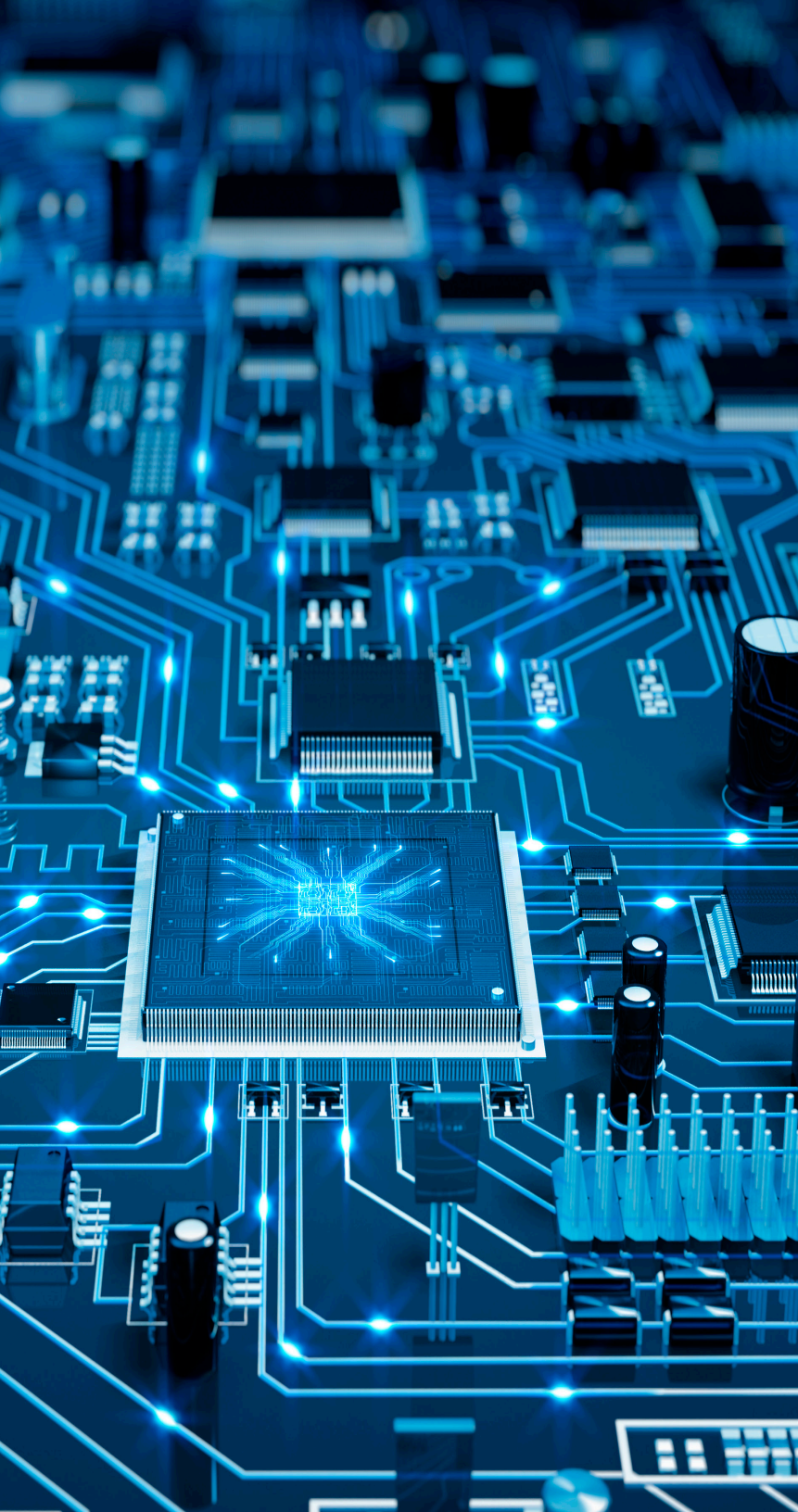
EAG
Laboratories

A Trusted Partner in the Consumer Electronics Industry

The consumer electronics industry is undergoing a period of unprecedented growth, characterized by rapid technological advancements, the necessity to meet strict regulatory standards, and intensified cost pressures. In this evolving landscape, many challenges can arise. EAG Laboratories is here to help.

Consumer electronics testing has been an important part of EAG for over 30 years. We offer the most comprehensive suite of testing techniques for the characterization of consumer electronics, while being able to meet the industry's exacting standards for tight controls of materials properties, composition and chemistry. We understand the importance for first-to-market breakthrough technologies, as well as the challenges of maintaining supply chain quality and efficiency from international providers.

With laboratories around the world and more than 30 years of experience, EAG Laboratories has assisted customers in the creation and development of consumer electronic products such as mobile devices, tablets, computers, wearables, and health tracking devices. Our dedicated team of experts continuously explores and integrates cutting-edge testing methodologies to address emerging challenges in the industry.



Support at Every Stage

EAG offers extensive support across all stages of development within the consumer electronics industry. From initial conceptualization to the delivery of the final product, our expertise and assistance are tailored to meet the diverse needs of each client.

Early Stage Materials

In the early stages of developing materials for consumer electronics, various technologies like semiconductors, MEMs & NAND structures, plastics, glass, and other raw materials are used. To aid early-stage development, a range of common services is available:

- Advanced microscopy is essential for examining sample micro-structure, morphology, particle size, coatings, and defects in thin/thick film or bulk substrate samples.
- Coatings analysis addresses challenges with coatings such as paints and adhesives, including depth-specific distribution measurements and comprehensive chemical survey characterizations.
- Materials characterization investigates issues like organic analysis of plastics/polymers, flux, lubricants, and solder masks, as well as elemental analysis of wire bonds, bond pads, leads, and lead frames.
- Purity services determine trace and ultra-trace level chemical impurities.
- Vendor qualification and comparison services.

Modular Components

EAG offers specialized services for the testing and characterization of modular components critical to consumer electronics, including batteries, LEDs, user interfaces, accelerometers, and sub-assemblies. We provide a comprehensive suite of services to ensure the reliability, performance, and quality of these essential components.

- Failure investigation ranges from level one non-destructive examination to level three fault isolation and root cause identification and characterization. Our labs perform failure analysis on both integrated circuits and devices.
- Materials characterization provides detailed insights into the composition and properties of materials used in modular components.
- Stress testing evaluates the durability of these components under various conditions.
- Vendor Qualification





Support at Every Stage

Devices and Platforms

We specialize in a broad range of essential services for common devices and platforms crucial to the electronics industry. This includes artificial intelligence, Application-Specific Integrated Circuits (ASICs), Printed Circuit Board (PCB) Assembly, and Discretes. Our services cover:

- Wafer and Chip Level Failure Analysis (FA) to identify root causes, ensuring the reliability of these critical components.
- Automated Test Equipment (ATE) to conduct comprehensive testing to assess the functionality, performance, and reliability of electronic components, meeting stringent quality standards.
- Electrostatic Discharge (ESD) Testing to assess components for susceptibility to electrostatic discharge, crucial for preventing damage during manufacturing, handling, and use.
- Reliability Assessments to ensure electronic components can withstand varied environmental conditions and usage scenarios, contributing to their long-term performance and durability.
- Warpage Measurements to assess warpage in electronic components, providing insights into their structural integrity and potential impact on performance.
- Defect Localization to pinpoint and localize defects in electronic components, enabling targeted corrective actions and improvements in manufacturing processes.

Finished Products

In our specialized services, we cater to a diverse range of common technologies such as AR/VR products, gaming consoles, computer networking devices, and data storage hardware. Our services include:

- Product Safety and Compatibility to assess products to ensure they meet strict safety standards and are compatible with diverse operating environments.
- Failure Investigations to analyze failure scenarios, identifying root causes and offering detailed insights to improve the reliability and performance of the examined technologies.
- Lifetime Testing to evaluate the longevity and durability of products, simulating extended usage conditions to ensure they meet expectations for sustained and dependable performance.
- Litigation Support and Product Reliability to provide scientific expertise, data interpretation, analytical litigation support, or expert witness testimony.

Services for Consumer Electronics Testing

Electronic System Testing

Our team offers the engineering expertise to design, develop, test, analyze, and debug the most innovative products using ATE system level testing and reliability.

Advanced Microscopy

Microscopy techniques are essential to investigate sample micro-structure, morphology, particle size, particle coatings and defects in thin/thick film or bulk substrate samples.

Metallurgical Analysis

Metallurgical investigations including fractures, fatigue, corrosion, contamination, wear, heat, and stress related failures.

Coatings Analysis

We provide depth-specific distribution measurements and chemical survey characterizations of coatings.

Purity Certification

Inspection of raw materials during key phases of manufacturing can aid in the identification and elimination of unwanted impurities in final products.

Consultation & Project Management

Our experts will work with your team to troubleshoot, choose the right material for your application, or improve manufacturing process.

Wear Lab

Dedicated facility to analyze wear and friction in materials and mechanical components to ensure product durability, reliability, and quality assurance.

Failure Analysis

Failure Analysis for an extensive list of applications ranging from IC deprocessing and product failures to chemical-related investigations. EAG can localize your defect and determine the root cause.

Surface Analysis

Solving surface chemistry issues with adhesion and bonding, questions regarding surface cleanliness and investigations regarding morphology and topography of materials' surfaces.

Polymer Characterization

Providing expertise and experience in polymer-related challenges and offer a complete range of analyses for polymers and composites.

Sensitizers Testing

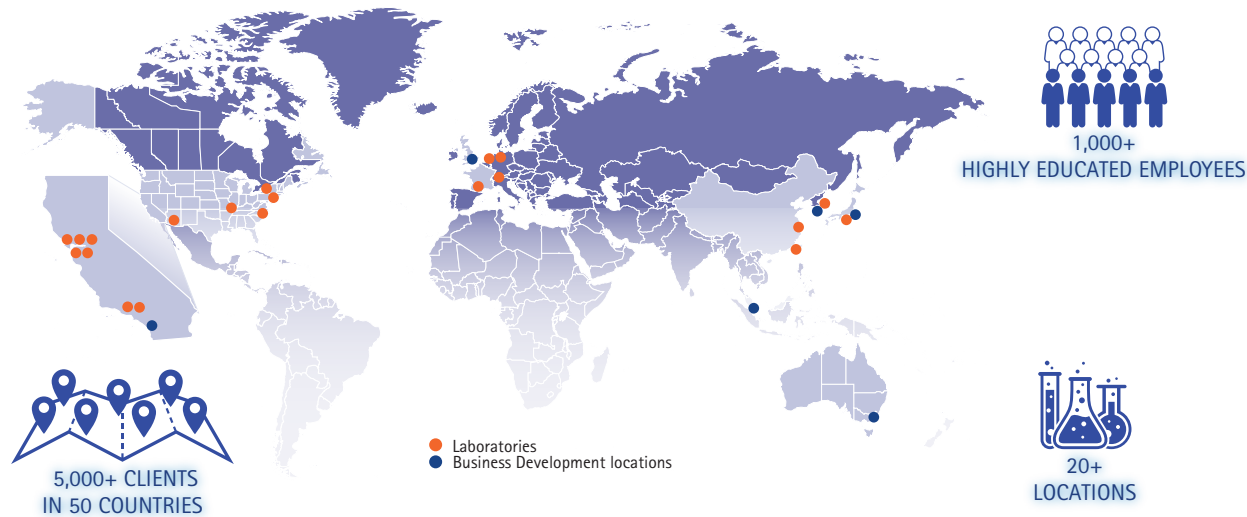
We use various techniques to determine if the presence of any transferred chemicals are skin sensitizers with potential for toxic, allergenic, or abrasion concerns.

Litigation Support Services

Providing scientific expertise, data interpretation, analytical litigation support, and expert witness testimony.

Global Support

We support over 4,000 clients in 20+ facilities located in the United States, Europe, and Asia using more than 2,500 instruments worldwide



About Eurofins EAG Laboratories

When it comes to understanding the physical structure, performance, chemical properties and composition of materials, no other scientific services company offers the breadth of experience, diversity of analytical techniques or technical ingenuity of Eurofins EAG Laboratories. We don't just perform testing, we drive commercial success—through thoughtfully designed investigations, technically superior analyses, and expert interpretation of data.

We deliver multi-disciplinary, problem-solving expertise to help our customers accelerate innovation, ensure quality and safety, and protect intellectual property. Whether you are seeking to reduce time-to-market, solve manufacturing problems or ensure regulatory compliance, turn to Eurofins EAG. We know how to bring the power of science to every phase of your product lifecycle.

- 20+ facilities located in the US, Europe, and Asia
- 2,500+ instruments
- 1,000+ highly-educated employees
- Serving more than 5,000 clients worldwide
- Revenue sourced from more than 50 countries

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Complete Lifecycle of Services

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 INVESTIGATION & TROUBLESHOOTING

 QUALITY ASSURANCE

 MANUFACTURING SUPPORT

 FAILURE ANALYSIS

 REGULATORY COMPLIANCE

 MANUFACTURING & SUPPLY CHAIN SUPPORT

 CONSULTING & LITIGATION

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