TRANS ASIA
Industrial Laboratories

Services for Laboratory Testings

Your trusted partner in mechanical, chemical, metallurgical, failure analysis, and corrosion testing – delivering unmatched quality, reliability, and performance for every industrial need in laboratory testings.

Operating through its group entities – Trans Asia Industrial Laboratories, Trans Asia Inspection Laboratories, and APTS – the organization delivers comprehensive and specialized testing, inspection, and NDT services.

Group of Companies

TRANS ASIA Industrial Laboratories

Comprehensive testing and analytical services, including mechanical testing, chemical analysis, metallurgical examination, failure analysis, and replica metallography.

TransAsia Inspection Laboratories LLC

Providing end-to-end inspection services—field, welding, quality, and equipment inspections—to support safety, compliance, and operational integrity.

APTS Advanced Q Systems

Offering a full spectrum of conventional and advanced NDT services to accurately identify defects and ensure structural reliability.

TABLE OF CONTENT

ABOUT COMPANY

Trans Asia Industrial Laboratories (TIL), Delivering Confidence Through Precision, Performance, and Quality.

Trans Asia Industrial Laboratories (TIL), part of the Trans Asia Group, is a multi-disciplinary testing and inspection facility delivering reliable, high-quality services aligned with international standards. Fully equipped with advanced technology, TIL offers Physical, Mechanical, Corrosion, Metallography, Chemical, Microbiological, Environmental, and Non-Destructive Testing (NDT) services. Our certified and accredited systems (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO/IEC 17025:2017, ISO/IEC 17020:2012) ensure precision and consistency.

Backed by experienced professionals, TIL supports industries including Construction, Fabrication, Oil, Gas, Petrochemical, and Marine sectors across the Middle East and globally, upholding excellence in quality, safety, and technical performance.

As Your Trusted Partner in Testing and Inspection, we redefine excellence with Expert Evalution, Unmatched Accuracy, and Proven Integrity, empowering industries to achieve higher standards of testings, reliability, and performance worldwide.

CORE PRINCIPLES

Collaboration – Fostering teamwork and partnerships internally and externally.

Compliance – Upholding global standards and certifications.

Customer Delight – Prioritizing client needs and satisfaction.

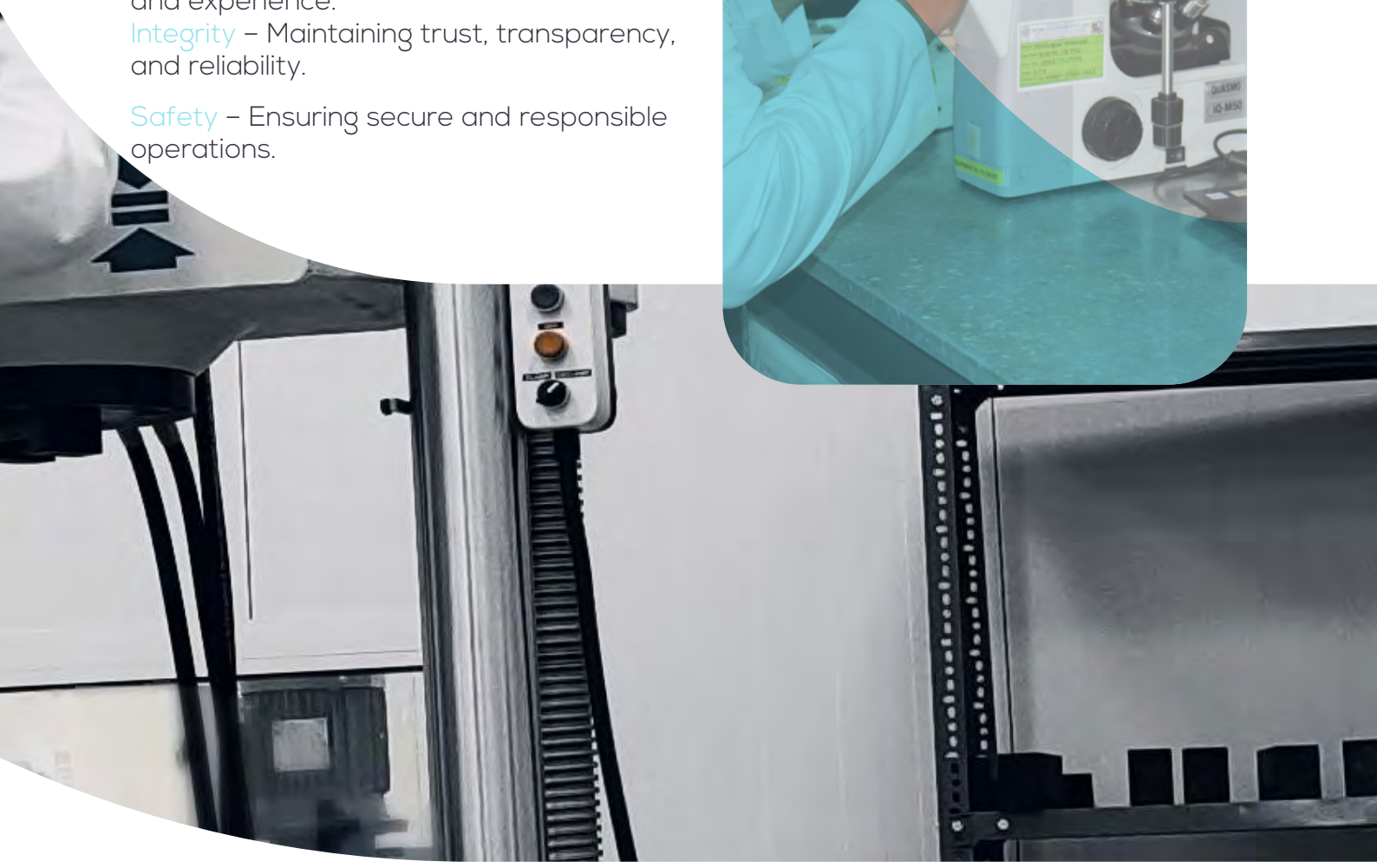
Efficiency – Providing economical, timely, and effective solutions.

Excellence – Delivering superior quality and accuracy.

Expertise – Leveraging technical mastery and experience.

Integrity – Maintaining trust, transparency, and reliability.

Safety – Ensuring secure and responsible operations.



OUR OBJECTIVES

Excellence in Service: Continuously enhance our testing and inspection services to exceed international standards and ensure exceptional customer satisfaction.

Technological Leadership: Invest in advanced equipment and innovative solutions to remain at the forefront of the industry and expand our service capabilities.

Professional Growth: Promote a culture of continuous learning and skill development, ensuring our staff remain highly competent and knowledgeable in their fields.

Quality Assurance: Uphold strict quality control measures and participate in proficiency testing programs to guarantee accurate, reliable, and consistent results.

Safety and Compliance: Commit to the highest standards of safety, regulatory compliance, and environmental protection across all operations.

Customer Focus: Build strong, long-term relationships by understanding client needs and delivering tailored, efficient, and value-driven solutions.

Global Reach: Expand our services locally and internationally, supporting diverse industries in the UAE—including Abu Dhabi, Fujairah, Ras Al Khaimah, Sharjah, and Ajman—while providing exceptional service and value worldwide.

Sustainability: Implement environmentally responsible practices that reduce our impact and contribute positively to the communities we serve.

WHY WORK WITH US

Trans Asia Industrial Laboratories (TIL) offers comprehensive, multidisciplinary testing and inspection solutions backed by state-of-the-art labs and expert field services. With ISO 9001, 14001, 45001 certifications and EIAC accreditations for ISO 17020 and 17025, we ensure accurate, reliable, and internationally compliant results. Our client-focused approach, technical expertise, and commitment to quality make us the trusted choice for industries seeking precise, efficient, and dependable solutions.

Trusted multidisciplinary laboratory providing reliable, precise, and internationally accredited results

OUR SERVICES

Integrated laboratory, NDT, PWHT, and inspection services with global certification standards.

Technical Expertise

Credibility

Equipped with advanced technology and accredited expertise, we ensure accurate results and dependable inspection outcomes across every project.

Mechanical & Metallurgical Testing

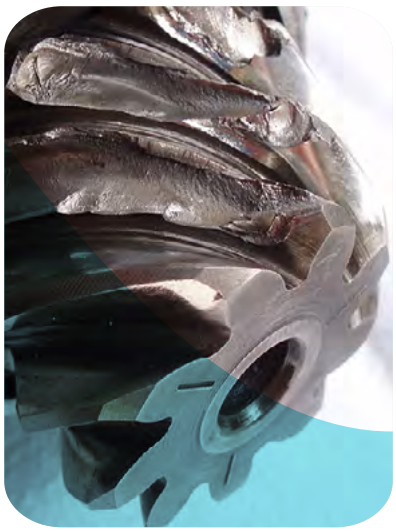
Strength and Intrinsic

Delivering accurate strength evaluations to ensure material reliability and performance integrity..

Chemical Testing

Precision

Our advanced chemical analyses provide accurate, reliable data to ensure product consistency, quality control, and compliance.



Failure Analysis

Insight

Uncovering root causes through expert investigation to enhance reliability, reduce downtime, and prevent recurring component failures.

Corrostion Testing

Protection

Evaluating corrosion resistance to safeguard materials, extend lifespan, and ensure long-term durability and safe operations.

NDT & PWHT Solutions

Integrity

Ensuring structural integrity, safety and compliance with core and advanced, non-destructive testing methods and technologies.

Technical Inspections

Assurance

Delivering trusted inspection services by, standards-driven inspections ensuring quality, compliance, safety, and confidence in every project.

LABORATORY
TESTING SERVICES

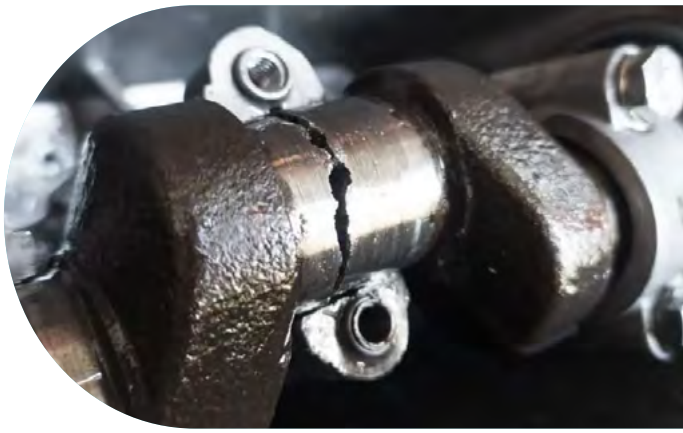
Our laboratory testing services provide accurate, reliable, and internationally compliant analysis across chemical, mechanical, metallurgical, and environmental domains for diverse industries.

Trans Asia Industrial Laboratories delivers reliable, internationally accredited testing solutions for diverse industries.

Our services include failure analysis, corrosion testing, in-situ replica metallography, and mechanical evaluations such as tensile, bend, Charpy impact, hardness, fillet fracture, nick break, and through-thickness tests.

We conduct macro and micro metallurgical examinations, chemical composition analyses, and specialized tests like Hydrogen Induced Cracking (HIC) and Sulphide Stress Cracking (SSC). With advanced laboratories, skilled professionals, and precise methodologies, we ensure safety, reliability, and compliance with global standards.

- Failure Analysis
- Corrosion Testing
- In-Situ Replica Metallography
- Tensile / Bend Test
- Charpy Impact Test
- Hardness Test / Survey
- Macro Examination
- Micro Examination
- Fillet Fracture Test
- Nick Break Test
- Through Thickness Test
- HIC – Hydrogen Induced Cracking
- SSC-Sulphide Stress Cracking
- Chemical Composition Analysis



FAILURE
ANALYSIS

Failure analysis is a multi-faceted, holistic approach to determining how and why a material or product failed. Failure analysis is a critical aspect of product development and system improvement which not only helps us learn from the past, but helps prevent future failures.

Our teams of expert metallurgists, chemists, and materials scientists are recognized as some of the most experienced in their field. They have decades of hands-on experience in performing root cause analysis for failures across many sectors, including Aerospace, Oil & Gas, Transportation, provide recommendations and work closely with the customer to find solutions to problems for a diverse range of products and materials.

The term "failure" can be defined as the inability of a part or assembly to perform its intended function. Whereas Failure Analysis is a process that is performed to determine the causes or factors that have led to an undesired loss of functionality.

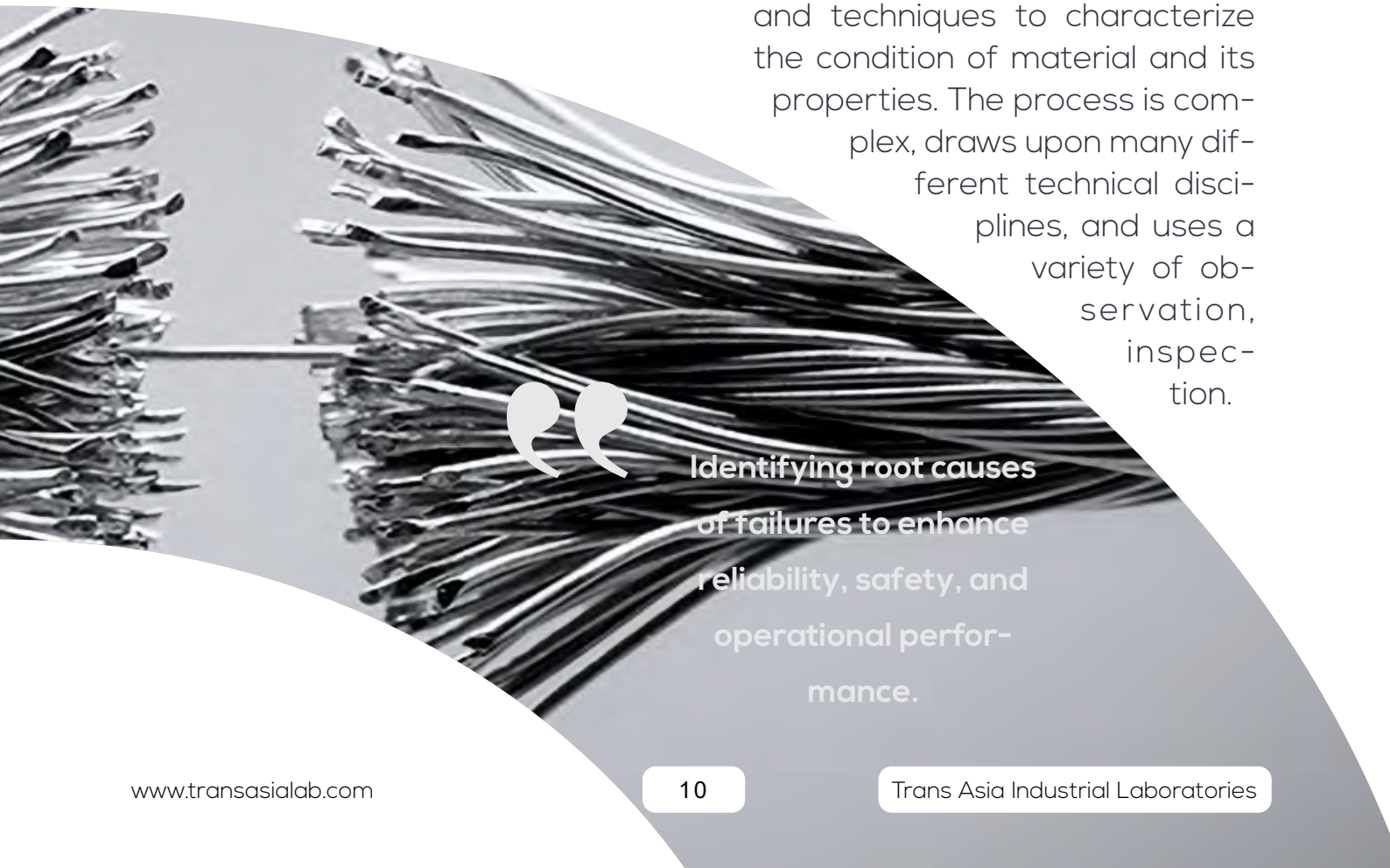
The Principal Task of a failure analyst during a physical cause investigation is to identify the sequence of events involved in the failure.

The tools of failure analysis are not just test machines and analytical instruments.

The tools of failure analysis include test machines and analytical instruments and also conceptual tools. Conceptual tools that are essential in determining the cause of any given failure may vary.

They include various pattern recognition skills (in the interpretation of macrofractographs, microfractographs, and metallographic images) and engineering and scientific knowledge based on physical metallurgy, polymer physics, solid-state physics, stress analysis, chemistry, and many other fields.

In addition, investigations of a failure employs various tests and techniques to characterize the condition of material and its properties. The process is complex, draws upon many different technical disciplines, and uses a variety of observation, inspection.



Identifying root causes of failures to enhance reliability, safety, and operational performance.

MECHANICAL TEST

Our mechanical testing services establish the strength, durability, and reliability of materials and components by performing a variety of standardized mechanical tests.

These tests evaluate critical physical properties such as tensile strength, bend resistance, impact toughness, and hardness in accordance with international specifications.

Delivering accurate strength evaluations to ensure material reliability and performance integrity.

Our Mechanical Testing services encompass a wide range of standardized tests designed to thoroughly assess the physical and mechanical properties of materials and welds. These tests help determine strength, durability, impact resistance, and overall performance under various conditions. By adhering to international standards, we ensure accurate, reliable results that support quality assurance, safety, and compliance across multiple industries.

The key mechanical tests we offer include:

- Tensile Test to determine Yield Strength, Tensile Strength, Elongation, Reduction of area
- Hardness Test: Vickers, Rockwell, Brinell & Micro Hardness
- Macro Hardness Survey on weld coupon
- Charpy Impact Test for Standard & Sub-size specimens at ambient, Sub-zero, and Cryogenic Temperatures
- Bend / Re-bend Test / Flattening Test
- Pull Out Test
- Fracture Test
- Proof Load Tests
- Nick Break Test
- Compressive Load Test

I METALLURGICAL ANALYSIS

Revealing the hidden microstructure of metals to ensure strength, quality, performance, and technological advancement.

Technical Expertise

Intrinsicity

Properties that arise from the material's internal structure and composition, such as microstructure, crystal lattice arrangement.

The department specializes in the metallurgical evaluation of metallic and non-metallic materials, offering hands-on experience and expertise in the following areas:

- In-situ Replica Metallography as per ASTM M 1351
- General macro examination as per ASTM E 340
- General microstructural evaluation as per ASTM E 407
- Grain size measurement as per ASTM E 112
- Ferrite count (manual point count method) as per ASTM E 562
- Inclusion count as per ASTM E 45 Method D (manual microscopic method)
- Determination of intermetallic phases as per ASTM A923 Method A (microscopic method)
- Coating thickness measurement (microscopic method)

Additionally, the department employs advanced techniques to assess creep damage (creep voids, pearlite dissipation, graphitization, spheroidization, grain boundary tearing, and grain shrinkage). Evaluations also include HIC, SSCC, quench cracks, surface hardening inconsistencies, and the detection of metallic, intermetallic, and non-metallic inclusions. Manufacturing defects such as laps, seams, casting, and forging irregularities, along with other microstructural anomalies, are also thoroughly examined.

General Microstructure

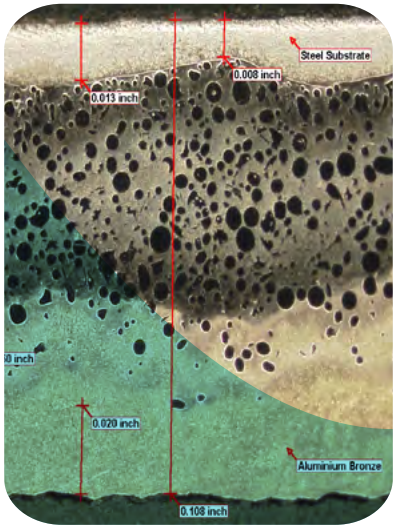
Inherent

Grain morphology, phase distribution, and inclusions defining mechanical properties, performance, and metallurgical quality.

Grain Size Analysis

Rating

Evaluating metal grains' dimensions to determine strength, toughness, and material performance characteristics.



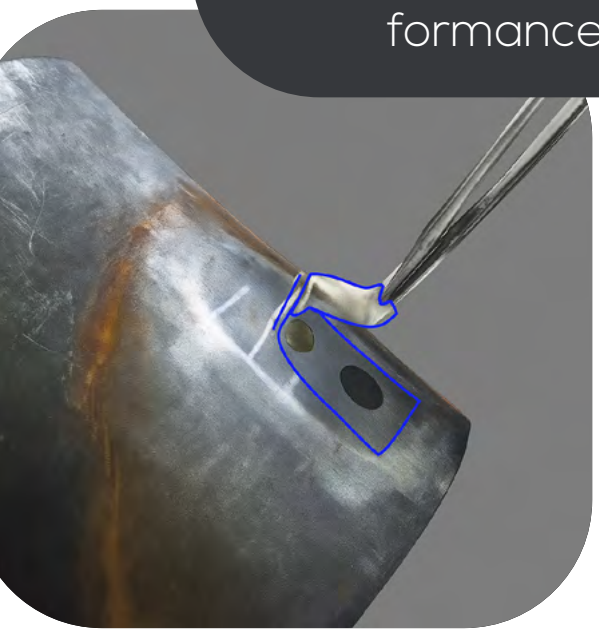
Microscopic Thickness

Depth

Measurement of hardened surface layer thickness to assess wear resistance, strength, and durability.

REPLICA TEST

In-situ replica metallography reveals metals' microstructures, enabling non-destructive evaluation to ensure strength, durability, and advanced material performance.



1. Grinding

Surface irregularities and oxidation are removed by sequential abrasive grinding, creating a smooth, uniform surface for accurate replica formation and analysis.

2. Polishing

Fine polishing eliminates micro-scratches from grinding, producing a mirror-like finish, ensuring the replica faithfully captures the metal's microstructure without distortion.

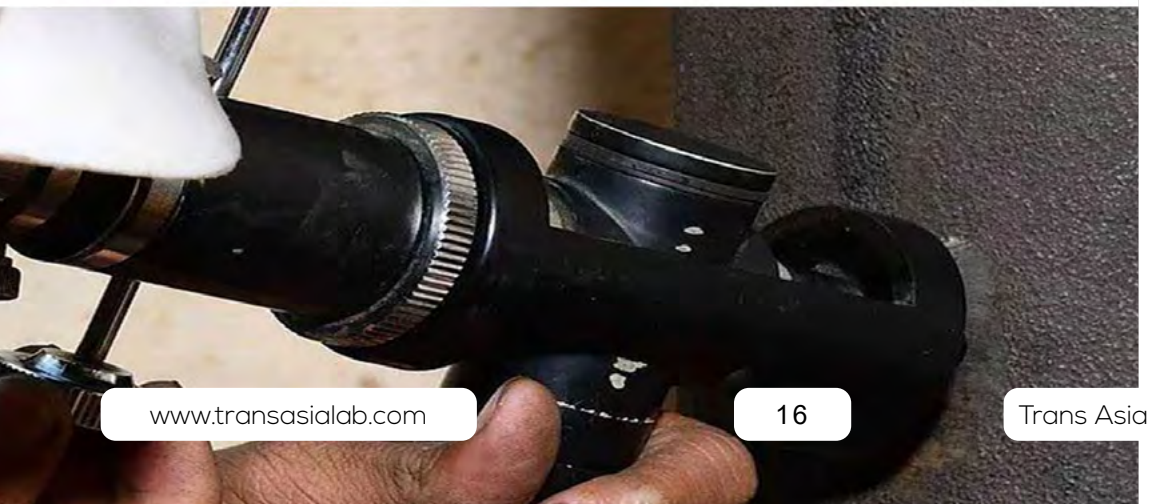
3. Etching

A chemical or electrolytic etchant selectively reveals microstructural features, grain boundaries, and phases on the polished surface, enhancing contrast for evaluation.

4. Evaluation

The prepared replica is examined under optical or electron microscopy to assess microstructure, defects, phase distribution, and ensure material strength and reliability.

> Revealing metals' intrinsic and inherent structures.



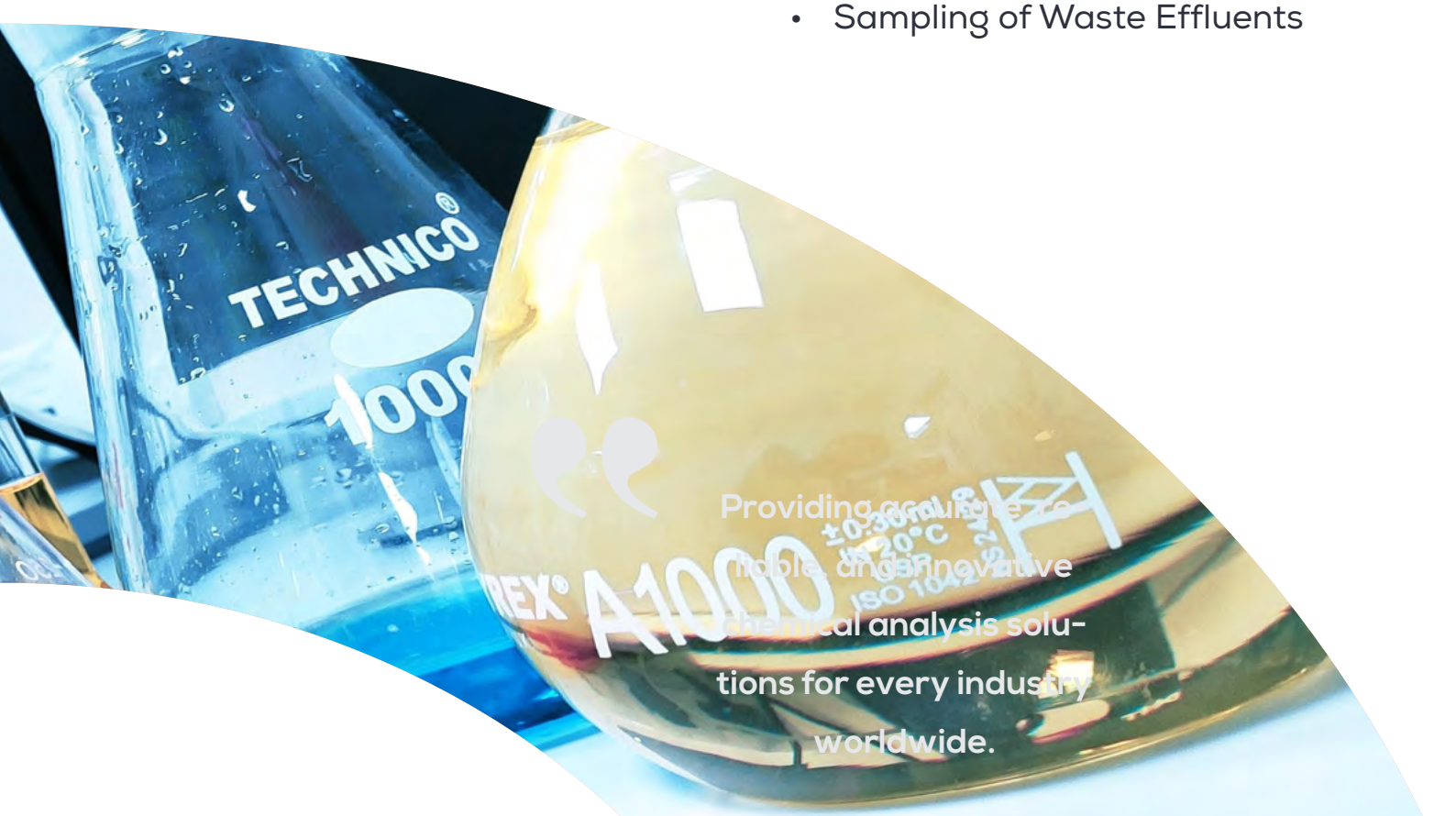
CHEMICAL ANALYSIS

Chemical testing is a vital process to determine the elemental composition and chemical properties of metals and alloys. Techniques such as spectroscopy, wet chemical analysis, and X-ray fluorescence identify material constituents, detect impurities, and ensure compliance with specifications. Accurate chemical testing ensures material quality, performance, safety, and suitability for engineering applications.

The department is staffed by a team of highly qualified chemists, analysts, and technical experts with extensive experience in analytical testing and industrial research, ensuring accuracy, reliability, and timely results.

Our Chemistry Department is fully equipped to perform analyses of metals, oils, gases, drilling fluids, chemicals, mud, effluents, and related materials. It also supports the industry by offering comprehensive consultancy services in identifying and verifying material elemental compositions, comparing analytical results, conducting investigations, and providing expert opinions on material selection and evaluation. The tests regularly performed are:

- Analysis of Precious Metals
- Scales and Sludge Analysis
- Analysis of Ores and Minerals
- Mud Analysis
- Oils and Fuels Analysis
- COD and BOD Levels, etc.
- Effluent and Sludge Analysis
- Microbiological Tesing of Domestic Drinking & Swimming Pool Water
- Potable and Waste Water Analysis
- Analysis of Drilling Fluids
- Industrial Effluents Analysis
- Paints Analysis
- Evaluation of Biocides
- Positive Material Identification (PMI)
- Sampling of Waste Effluents



Providing accurate, reliable, and innovative chemical analysis solutions for every industry worldwide.

CORROSION TEST

Comprehensive corrosion testing includes HIC, SSC, Pitting, and Crevice tests to assess material durability and resistance in aggresive environments.

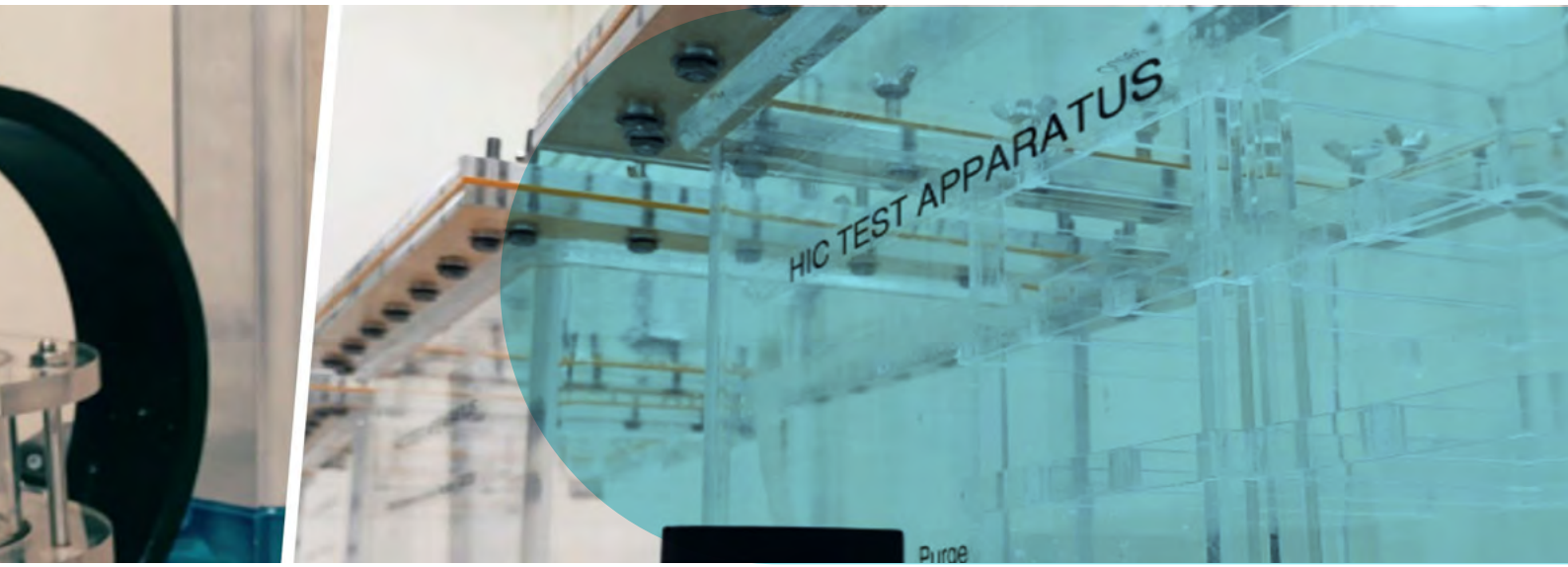
These tests assess corrosion resistance, ensuring material reliability, durability, and compliance with global standards for oil, gas, petrochemical, and marine applications.

Protecting critical industries with precise, reliable, and comprehensive corrosion testing solutions.

We offer corrosion testing solutions to ensure your materials perform reliably in challenging environments. Our services include Intergranular, Pitting, and Stress Corrosion Cracking tests, as well as Hydrogen-Induced Cracking evaluations, all conducted to international standards. With state-of-the-art facilities and expert professionals.

We deliver accurate, timely, and trusted results—helping clients improve material quality, enhance product performance, and ensure long-term durability. Our key corrosion tests include:

- Hydrogen Induced Cracking (HIC) Test – NACE TM 0284
- Sulfide Stress Corrosion Cracking (SSCC) Test – NACE TM 0177 Method A
- Four-Point Bend SSCC Test – EPC Publication 16/G39/NACE TM 0177
- Stress Oriented Hydrogen Induced Cracking (SOHIC) Test – NACE MR0175 / ISO 15156
- Pitting Corrosion Test (for duplex and super duplex stainless steels) – ASTM G48 Method A & C / ASTM A923 Method C
- Intergranular Corrosion (IGC) Test (for austenitic stainless steel) – ASTM A262 Practice A, B, and E
- Intergranular Corrosion (IGC) Test (for nickel-based alloys and Inconel materials) – ASTM G28



OUR CLIENTS

We serve our clients with precision, integrity, and timely solutions, ensuring reliable testing, accurate results, and exceptional service quality that consistently meet their expectations and earn their long-term satisfaction and trust.

Clients trust us becasue, we deliver–precision, quality and reliability. Zero coffee spills guaranteed!


Drydocks World


ديوا
dewa


أدنوك
ADNOC


BUREAU VERITAS
1828
BUREAU
VERITAS


RTA
هيئة الطرق والمواصلات
ROADS & TRANSPORT AUTHORITY


SAIPEM


DOLPHIN ENERGY
دولفين للطاقة


ALEC
Building Excellence


GERAB


MCDERMOTT


DNV


T&C GROUP
TROUVAY & CAUVIN
Channelling all energies


TÜV
SÜD


Baker Hughes


Mabani
STEEL


المسعود
AL MASAOOD


CSCEC


FABTECH


ArcelorMittal


BESIX


شركة نفط الكويت
Kuwait Oil Company
A Subsidiary of Kuwait Petroleum Corporation


ASSENT


AIC steel


DANWAY
ELECTRICAL & MECHANICAL ENGINEERING (L.L.C)


slb


DRILLTECH


Lamprell


PETRO GAS PIPING

Precision Quality

Reliability

TRANS ASIA
Industrial Laboratories

Contact Us

P: +971 4 884 7220

M: +971 50 841 9001

E: info@transasialab.com

W: www.transasialab.com

Al Tayer Warehouse #10
Al Quoz Industrial Area-1
Dubai, U.A.E.