

Analytical Services

HRL provides industry-leading specialist analytical services

Background

Through an ongoing commitment to deliver more than just an analysis result, the analytical team at HRL Technology has developed a reputation for excellence and providing complete solutions. The team specialises in providing high quality analytical services.

Using a problem-solving approach, and drawing on the engineering skills within HRL Technology, we work with our customers to improve quality, performance and add value to their business.

Our team combines modern, quality accredited laboratories with sophisticated equipment to provide sample preparation and chemical, physical, thermal and mechanical analysis services for sample quantities ranging from micrograms to tonnes.

From routine analysis to complex industrial investigations, HRL Technology has the skills and commitment to tailor a complete solution for you. Our expertise and strong customer focus are evident in an extensive portfolio of innovative solutions.

Analysis Capabilities

Our analysis facilities are grouped into four main categories: mechanical, chemical, physical and thermal. We have unique expertise and capability in the analysis of coals, oils and fuels, biomass, minerals and mineral products, metals, process and trade wastes, waters, foods, raw materials, polymers and organic compounds.

Analysis and Investigations

Examples of investigative projects undertaken for our customers include:

- Utilisation of coal, biomass and wastes
- Quality assurance and certification of products
- Process gas and particulate sampling and analysis

- Characterise and identify foreign materials
- Ash deposit sampling and analysis (including ash fouling control)
- Laboratory scale testing of processes (e.g. thermal desorption of pollutants from soils)
- Sediment analysis and classification for environmental impact
- Measurement of coal gasification reactivity
- Characterisation of activated carbons

HRL has biosecurity approved premises and holds licenses to accommodate materials up to Schedule 8. We are NATA registered for specific tests.



HRL provides assessment for environmental impact

Mechanical Analysis

- Tensile and creep rupture testing to 1000°C
- Fatigue and crack propagation
- Hardness (impact and abrasion resistance)
- Impact and toughness testing to 600°C
- Stress analysis and residual stress measurement

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Chemical Analysis

- Analysis of coal and coal derived products, oils, wastes, biomass, etc. Moisture, ash, volatile matter, calorific value, elemental (C, H, N, S, Cl, F) and inorganic composition, trace metals, ash fusion
- Inorganic and trace element analysis including Hg, As, Sb, Se. Instrumental and classical methods.
- Trade wastes, water and effluent analysis including pH, conductivity, TDS, TSS, TOC, BOD, cations, anions, organics, particulates, etc.
- Chemical and physical characterisation of carbons
- Mineral identification (ICP, SEM, XRD, IR)
- Metallographic analysis
- SEM-EDX analysis with light element detection
- XRD analysis
- Infra-Red (IR) and UV-Vis Spectroscopy
- Gas Chromatography/Mass Spectrometry (GCMS) analysis of solids, liquids and gases
- Pyro-probe GCMS

Physical Analysis

- Particle size analysis – laser scattering and sieves
- Density (apparent, true and bulk)
- Surface area
- Pore volume distribution (Hg intrusion porosimetry)
- Rheology (viscosity)

Thermal Analysis

- Thermogravimetric Analysis/Differential Scanning Calorimetry (TGA/DSC) to 1500°C
- Thermomechanical Analysis (TMA) to 1400°C
- High Pressure Thermogravimetric analysis (HP-TGA) to 100 bar and 1100°C
- Hot-Stage Microscopy (HSM) to 1000°C
- Thermal conductivity
- Range of furnace, tube furnaces with evolved gas sampling and analysis

Contact

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Need more information?

Go to hrl.com.au

The company's NATA Accredited Laboratories number is 561. HRL Technology Group's ISO 9001 Quality Management is certified by BSI under certificate FS605116

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