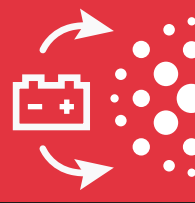


ALFRED H KNIGHT

Inspect. Test. Trust.



# BATTERY RECYCLING PRODUCTION SCRAP AND BLACK MASS

INDEPENDENT INSPECTION AND ANALYSIS SERVICES

Providing trust and certainty throughout the global supply chain



# BATTERY WASTE SERVICE

THROUGH CONTINUED INVESTMENT AND RESEARCH, ALFRED H KNIGHT IS COMMITTED TO DEVELOPING BEST PRACTICE SAMPLING, PREPARATION AND ANALYSIS FOR THE BATTERY INDUSTRY, ENSURING QUALITY AND ACCURATE RESULTS.

We provide Independent evaluation of battery waste streams to determine metal content and commercial value.

## EXPERTS YOU CAN TRUST



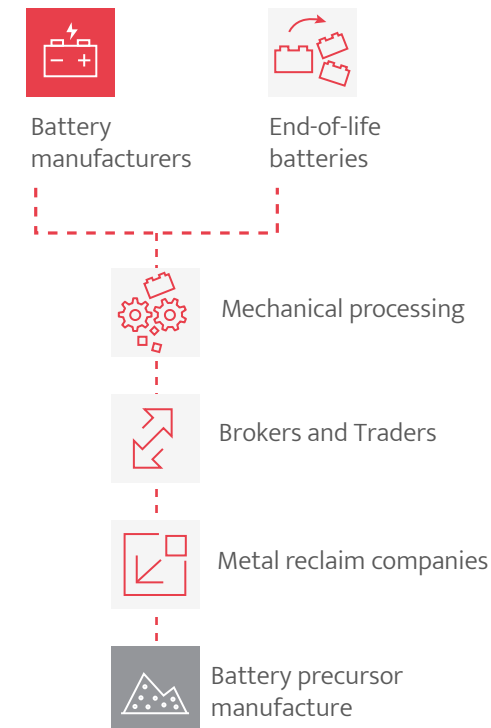
WE HAVE AN IN-DEPTH, TECHNICAL UNDERSTANDING of materials in the growing and changing market of battery recycling. This, married with over 140 years of experience in the testing and inspection of metals and minerals, has enabled our team to build a solid reputation for delivering consistently accurate, independent and cost effective solutions to our clients, through a global network spanning from North America, through Europe, China and the rest of Asia.

## SAMPLING SERVICES

Our fully-trained personnel offer the following services:

- Weighing and Sampling
- Sample Preparation
- Moisture Determination
- Commercial Settlement Analysis
- Material Characterisation
- Technical Consultancy

## BATTERY RECYCLING VALUE CHAIN



## COMMODITIES

- Black Mass
- Production Scraps
- Metal Byproducts
- Precursor salts



## FURTHER VALUE

**IN ORDER TO MAINTAIN A SUSTAINABLE CIRCULAR ECONOMY, WE MUST FIND FURTHER USE AND VALUE IN THE MODERN TECHNOLOGY WE USE.**

As the battery industry evolves, especially in relation to electric vehicles, there are opportunities to reprocess valuable metals from manufacture, right through to end-of-life. This can be beneficial both environmentally and commercially.

AHK have developed specific methodology for the analysis of battery by-products (including Black Mass) that accurately measures the metal content and helps to determine value. Our tests cover all payables, penalties and impurities - with 20 elements at quantitative determinations suitable for commercial settlement and 23 elements at indicative levels that can help guide processing decisions.

We are also able to determine the Phase Characterisation of these by-products at different stages of processing. This enables us to look at particle structures and textures and determine metal distributions with implication for improved metallurgical processing.

### LOCATIONS

**Sampling:** Europe, North America, Asia (esp. Japan, South Korea, China, Singapore)

**Regional Labs:** UK, USA & China

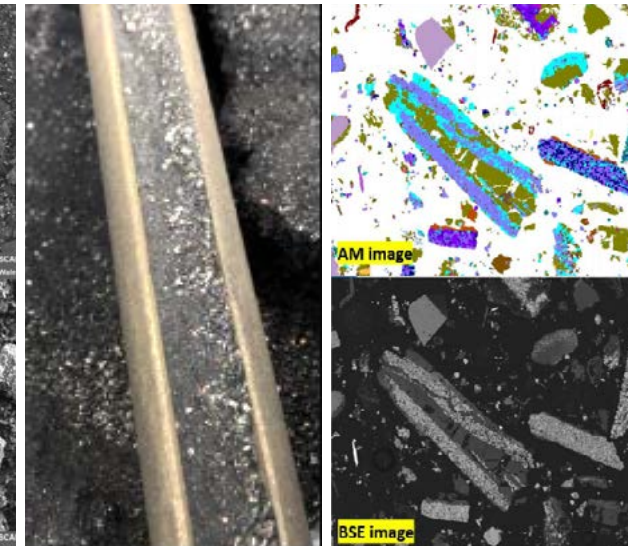
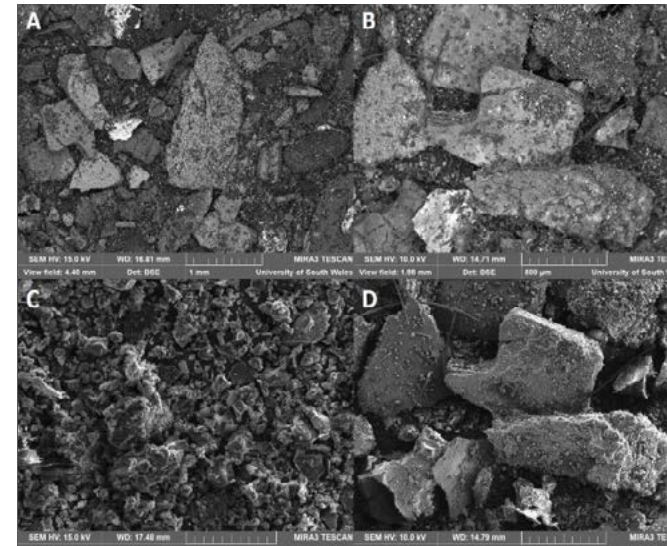
**Sample Prep facilities (in addition to the above labs):** Belgium, South Korea

AHK sampling teams are operational globally, meaning we can sample your material wherever necessary.

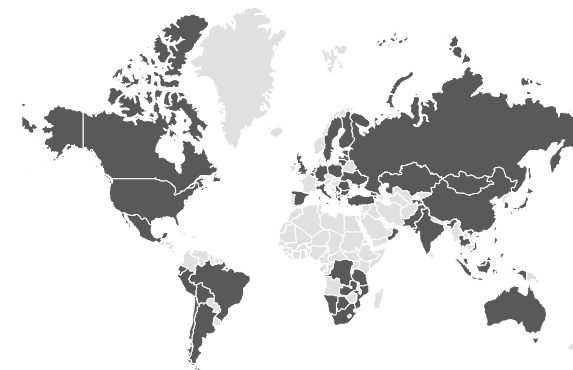
Our assay technicians operate from strategically located laboratories in the Americas, European and Asian time zones. This means that no matter your location, you can get a swift and personal response regarding your reports.

### AHK'S TECHNICAL EXPERTS WORK TO RECOGNISED METHODS AND FOLLOW STANDARD OPERATING PROCEDURES.

This enables us to deliver high quality, independent supervision and inspection services to our clients.



## OUR EXPERTISE



**ALFRED H KNIGHT (AHK)** is a leading provider of inspection, testing and analytical services for the minerals and metals and solid fuels industry and has vast experience with a variety of materials throughout the global supply chain.

AHK operates a global network of experts with a well-earned reputation for providing reliable, professional services and high-quality results.

Whether you need our services at a mine site, load or discharge port receiving works or at other crucial points in the logistics chain, AHK can meet your needs.



# ALFRED H KNIGHT

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## GET IN TOUCH

AHK's experienced team are always available to support and assist your global inspection and analysis requirements.

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### GLOBAL

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GLOBAL INDUSTRY LEAD -  
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