

Intertek Caleb Brett's

Carbon 14 Testing Capabilities

Unlock the Future of Renewable Energy

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Unlock the Future of Renewable Energy with Intertek Caleb Brett's Carbon-14 Testing Capabilities

As the global demand for sustainable fuels continues to rise, verifying the biogenic content of fuel blends has never been more critical. At Intertek Caleb Brett, we offer cutting-edge Carbon-14 (C-14) testing services that ensure the integrity and sustainability of your products. Our advanced testing capabilities support your commitment to reducing carbon footprints and complying with international standards.

Understanding Carbon-14 Testing

What is Carbon-14?

Carbon-14 is a radioactive isotope of Carbon, produced in the Earth's upper atmosphere and decays over time. Fossil petroleum sources, buried underground for millions of years, have negligible levels remaining of their C-14 content. This unique characteristic allows us to differentiate between fossil-derived and biogenic hydrocarbons, providing accurate verification of renewable content in fuel blends.

Why C-14 Testing?

C-14 testing is the only analytical method capable of accurately distinguishing between fossil-derived and biogenic carbon. This precision is crucial for industries producing or utilizing biofuels, as it ensures that their products meet the specified renewable content requirements. Whether it's ethanol from fermented sugars or biodiesel from plant oils, C-14 testing confirms the biogenic origin, offering credibility and assurance to both producers and consumers.

Governments and regulatory bodies worldwide are increasingly mandating the use of renewable fuels to reduce greenhouse gas emissions and combat climate change. C-14 testing helps companies comply with these stringent regulations by verifying the biogenic content in their fuel blends. This compliance not only avoids potential legal penalties but also aligns with global sustainability goals.

In an era where consumers are becoming more environmentally conscious, the ability to validate the renewable content of products is a significant competitive advantage. C-14 testing provides the scientific backing needed to support marketing claims about sustainability.

This transparency enhances brand reputation and builds consumer trust, which is vital for long-term success in the marketplace.

C-14 testing plays a pivotal role in the transition towards a circular economy by promoting the use of renewable resources and reducing dependence on fossil fuels. By accurately measuring the biogenic content in products, businesses can better understand their environmental impact and make informed decisions to improve their sustainability practices.

As the renewable energy sector continues to innovate, the need for precise and reliable testing methods becomes more critical. C-14 testing supports research and development by providing accurate data on the renewable content of experimental fuels and materials. This data is essential for developing new, sustainable energy sources and improving existing ones.



Our Testing Methods

Intertek Caleb Brett offers two robust methods for C-14 testing, ensuring accurate and reliable results for various applications:

1. Liquid Scintillation Counting (LSC):

Available at our UK laboratory (ASTM D6866) and Netherlands laboratory (DIN 51637), LSC involves combusting the sample to produce CO₂, converting it to benzene, and measuring light emission from beta decay to determine C-14 content. This method boasts a maximum total error of just 3%.

2. Accelerator Mass Spectrometry (AMS):

AMS (Accelerator Mass Spectrometry) directly measures the concentration of C-14 in accordance with ASTM D6866. During the process, the sample is combusted to produce CO₂, which is then purified, converted to graphite, and analysed using a mass spectrometer. AMS offers highly precise measurements, with a maximum total error of just 3%.



Applications of C-14 Testing

Sustainable Aviation Fuel (SAF)

Biofuels

Feedstock Verification

By leveraging our C-14 testing capabilities, you can confidently verify the renewable content in your products, ensuring they meet stringent sustainability criteria and enhancing your market position.

Comprehensive Support for Sustainable Fuels

Intertek offers a holistic suite of services to support your sustainable fuel initiatives:

- Feedstock Testing
- Research and Development Support
- Finished Product Specification Testing
- ISCC Auditing and Assurance
- Engineering Support through Intertek Moody

Intertek Caleb Brett is a trusted leader in analytical services, offering unparalleled expertise and precision. Our Carbon-14 testing capabilities provide the accurate data needed to navigate the complexities of renewable energy regulations, ensuring your products meet sustainability standards. With a commitment to innovation and quality, we help you unlock the future of renewable energy by verifying the renewable content in your fuel blends, boosting your sustainability credentials, and driving your business towards a greener tomorrow.



Geographic Reach and Expertise

With laboratories strategically located in the United Kingdom and the Netherlands, Intertek Caleb Brett ensures expedited turnaround times and comprehensive testing services.

Our experts are well-versed in the latest regulations and standards, guaranteeing that all tests meet both regional and international requirements.

Our West Thurrock laboratory is ISO/IEC 17025 accredited by UKAS for Carbon-14 analysis using Liquid Scintillation Counting. This includes both direct measurement and testing in accordance with ASTM D6866C, making us an exclusive laboratory currently holding a UKAS accreditation for ASTM D6866.

Carbon-14 testing is the gold standard for verifying the biogenic content of fuels, materials, and products. This capability helps validate renewable content, ensure regulatory compliance, and meet their sustainability objectives.



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