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VENDOR SEMINAR:

The Evolution of Reference Materials

The evolution of reference materials

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The origins of LGC can be traced back to 1842 when the Laboratory of the Board of Excise was founded in the City of London to regulate the adulteration of tobacco, which was prohibited under the Pure Tobacco Act. LGC is the UK National Measurement Laboratory and Designated Institute for chemical and bio-measurement and have been home to the UK Government Chemist for more than 100 years. In both these capacities and a continually diversifying range of interests, LGC has been uniquely positioned to play an influential and observational role in the development of analytical measurement science.

As analytical techniques were developed over the course of the 20th Century to dramatically improve measurement capabilities, this drove the initial need for well characterised neat chemicals to be used as references in testing.

The advancement of techniques, instrumentation and methods soon enabled laboratories to more effectively separate mixtures and identify individual components. Initially analyses were limited to a handful of chemicals per technique so it was not difficult for the chemist to make or purchase the needed chemicals and produce their own standards. As the scope of the methods grew to larger lists, single component solutions emerged as a potentially faster and more economical option for chemists.

As regulatory methods were developed with target lists, multi-component solutions were developed to further streamline the measurement process. A significant step forward, multi-component solutions presented a world of possibilities to meet analytical needs, no matter how complex or specific. However, catalogued multi-component solutions are just the beginning.

Measurement science continues to evolve at pace, and the 21st Century has seen the advancement of custom-made solutions to meet the increasingly complex requirements of analytical testing across many sectors and industries. Presenting an opportunity to deliver bespoke reference standards, custom solutions represent a complex science, but one that enables efficiency and accuracy in even the largest and most complex analytical techniques.

Each format of reference material has advantages for scientists, and an exploration of these advantages and the continual evolution of reference materials will be presented.