

Qualified to Protect

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Since Public Analysts have such a major rôle to play in food safety and quality, and in order to ensure that they are of the highest calibre, the law requires them to hold a special qualification known as the Mastership in Chemical Analysis (M.Chem.A).

Set at post MSc (Master of Science) level, this is the foremost qualification in applied analytical chemistry in the UK and the only qualification that attests knowledge, ability and interpretational skills with respect to both analysis and law in most of the areas of public protection outlined in this brochure.

The qualification itself has its origins in the infancy of food law a century ago, when the importance of accrediting the competence of individuals empowered to undertake analysis and interpretation in relation to law enforcement work was recognised.

Since that time these unique scientists have been at the forefront of scientific testing and the development of standards. With a wealth of accumulated experience and working within extensively equipped laboratories in close co-operation with others in their profession, Public Analysts are ideally positioned to meet both current and future demands of scientific testing.

The training of scientists to this level and sustaining of such levels of expertise requires a degree of commitment for the provision of resources, but as a consequence the public can rest assured that the best possible facilities for its protection are available to enforcement authorities.

A Testing Examination

Once a week-long examination consisting of theory papers followed by actual practical analysis leading to reporting on samples, the examination now is split into three parts: The first is a written examination to assess knowledge of analytical chemistry, with exemption granted for candidates holding an approved analytical qualification at MSc level.

The second part, consisting of two 3-hour written papers, assesses core knowledge of food, agriculture and potable water, including relevant policy and law.

The final part consists of an assessment of the candidate's portfolio of evidence of personal experience, followed by a day-long practical interactive examination, with the candidate presented with real-life scenarios requiring a full assessment of simulated samples, including the direction of analysis, its interpretation, and reporting.

Practical Assessment

The interactive part of the M.Chem.A. examination simulates real-life situations under pressure to assess the candidate's:

- analytical ability
- investigatory ability
- person management
- resource management
- verbal communication
- decision-making processes
- interpretation skills
- reporting ability

Extensive Knowledge

In relation to food alone the M.Chem.A. requires familiarity and understanding of its:

- chemistry
- microbiology
- composition
- microscopical structure
- production technology
- nutrition
- storage
- contamination
- legislative controls
- interrelationship of all these

Personal Experience

The examination itself is a most demanding test - but it is only the final part of the assessment process that leads to the award of the Mastership in Chemical Analysis. A fundamental pre-entry requirement for the second stage of the examination is the attestation that the candidate has attained the appropriate level of maturity, experience and proficiency by two approved referees (counsellors), the senior being an M.Chem.A. holder from outside the candidate's own place of employment, with the second normally being the candidate's own laboratory head, while the portfolio of evidence assessed at the third stage must satisfy the Royal Society of Chemistry that the candidate's breadth and depth of experience are adequate.

All this is in recognition of the fact that a Public Analyst must be able to deal effectively with any situation thrust upon him or her, making correct decisions even under pressure - every situation or sample needs direct and individual attention, both at the analytical stage and in its interpretation and reporting, even when seemingly routine.

Masters of Analysis - and its Application in Law

The M.Chem.A. holder has the highest qualification in applied analytical chemistry in the UK, together with proven understanding of the law and the use of scientific data in its enforcement.

The examination itself is unique in testing interpretational and reporting ability as well as analytical capability, all to the standards required in a Court of Law. This includes such interpretation of both the law and information pertaining to the sample as is necessary to assess the most appropriate analysis required in any situation.

An assurance is thereby provided that the holder of the M.Chem.A. is fully qualified to perform such functions from receipt of sample to the presentation of appropriate conclusions in legal proceedings.

Accredited Competence

The statutory qualification for Public Analysts has its origins in the infancy of food law a century ago, when the importance of accrediting the competence of individuals empowered to undertake analysis and interpretation in relation to law enforcement work was recognised. The M.Chem.A. is the legal accreditation for Public Analysts.

Laboratory accreditation, introduced in the 1990s provides assurance that testing and analysis are carried out according to documented procedures, however the interpretation of results is not covered, nor is the ability to react and adapt to different analytical and legislative needs, nor is laboratory accreditation alone any guarantee of the absolute quality of results.

The M.Chem.A. examination covers interpretation and reactive and adaptive ability as well as analytical competence, while external proficiency testing schemes such as the 'FAPAS', the Food Analysis Performance Assessment Scheme recognised by the UK's Food Standards Agency, provide a means of confirming that the quality of analytical results is adequate.

When these three elements are combined to give an accredited laboratory participating in proficiency testing schemes directed and overseen by an M.Chem.A. holder, the entire package becomes an accredited service from decision on appropriate analysis to reporting of a conclusion.

A Wider Experience

Public Analysts as members of their professional Association enjoy a close professional relationship with their peers and can tap freely into the vast resource of experience and knowledge of a hundred other Public Analysts.

This resource is supplemented by the legacy of experience and knowledge passed down by generations of forbears, dating back to the very origins of public protection science.

Harmonised Enforcement

In the interests of a "level playing field" for industry and effective protection for the public it is important that public protection laws should be enforced in an equitable manner in all areas.

Part of this equitable approach requires scientists in different areas to use methods of test and standards for enforcement that yield similar results and levels of control. Indeed, in terms of food control the European Union specifically requires official laboratories to use harmonised methods.

Towards the end of the last century the Association of Public Analysts via its Validated Enforcement Method Service has created a common stock of harmonised methods to supplement official or international standard methods, and various guidelines prepared by the Association assist Public Analysts in applying common standards.

In Total...

The Public Analyst is therefore much more than a mere chemist, however well qualified, but is the accumulation of his or her own extensive and proven personal experience and knowledge backed by those of a dynamic network of others.