What is Food Forensics Testing?

AsureQuality forensics testing assists with identification of foreign matter and potential sources of contamination.

Forensic analysis of food samples is used to identify foreign matter and potential sources of contamination. Examples of materials we can identify include glass, metals, plastics, hair, DNA and more. Successful identification may require several steps to satisfactorily determine the nature of the foreign matter or contamination. Our team at AsureQuality's Wellington laboratory is experienced in this work and has access to the combined resources at AsureQuality and expertise from a number of internal and external specialist laboratories.

In some cases, we cannot recommend a test type until we visually examine the foreign matter under the microscope. For this reason, when we send out quotes, we send a range of test codes that cover our most standard testing including reporting, Fourier transform infrared (FT-IR), scanning electron microscopy with an elemental detector (SEM-EDS) and any comparisons or additional analysis. If specialized testing is required, then we can send out an additional quote with those specific test codes. This way if you require standard testing with the Forensics team any sample submitted after the quote has been accepted does not require a new quote until that accepted quote expires.

Process

Our forensics team can microscopically examine samples and offer several testing options to determine the chemical composition of the foreign matter, as well as subcontracted DNA or visual analysis at the AsureQuality Plant Laboratory and various other techniques as required.

Initially we carry out a visual analysis of the foreign matter under the microscope. This helps us to determine the testing options required to identify the material. We have two standard testing options we generally employ:

- FTIR analysis (FR-FTIR01) – This provides the general chemical composition of the material, i.e. whether it is composed of cellulose, carbohydrates, different types of plastic, etc. This method is generally used to identify organic substances (primarily carbon based).
- SEM/EDS analysis (FR-SEMX01) – This analytical technique is used for inorganic substances, e.g. metal fragments, minerals etc. This provides the elemental composition of the material, i.e. whether it is composed of iron, silicon, calcium, magnesium, etc.

Based on the results of the microscopic examination we generally need to use only one of the above techniques. However, occasionally we may need to use both. If this is necessary, we will let you know before we proceed with further testing to get your approval.

If further specialist testing is required, we have a number of options for testing internally, or we have various specialist subcontractors that we employ for animal or plant matter identification, specialist glass analysis, microbiological analysis, or DNA testing etc. We will contact you before proceeding with these tests to confirm that you would like to go ahead.

At the end of our investigation, we compile a report. This includes a brief visual description of the foreign matter, images taken during the microscopic examination including dimensions, spectra or graphs of either the FTIR or SEM, results interpretation and a generic reference list of potential sources of the material. The visual examination of the sample/s and the compilation of the report are covered by our reporting fee, FR-IDEN01.

Our standard turnaround time is five working days. (This will increase if subcontracting is required, at times of high sample volume, or if we are awaiting your approval. Turnaround time may also be higher for projects with more than around three samples).

Please see our article on Forensics Sample Submission for information on how to submit your sample.

Feel free to contact the forensics team on Forensics@asurequality.com if you have any further questions.