ALS UNITED KINGDOM
N.I.R. ANALYSIS OF NUTRITIONAL COMPOSITION FOR LABELLING SURVEILLANCE TESTING

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What is N.I.R. Spectroscopy?

Near-infrared (N.I.R.) spectroscopy has been used by the food testing industry for many years as a reliable analysis option for certain sample types and analytes, particularly for quality control purposes. By measuring the energy reflected off the sample against a calibration model that has been determined using internal cross-testing of thousands of samples with the accredited methods for each applicable analyte, nutritional composition may be determined within the accuracy required for routine labelling compliance testing.

Over the past 2 years, ALS has developed, tested and refined a unique data model, with the project involving the comparison of thousands of samples, covering a range of complex matrices tested for group 2 nutritional at the Chatteris site.

We are continuously adding to this data model, which is also being monitored by our dedicated team, allowing ALS to provide the best possible analysis to our clients.

Which sample types is this method suitable for?

The method is applicable to many human and animal foodstuffs, raw materials and supplements intended for use in foods. These include the following:

Bakery, Ready Meals, Salads, Sandwiches, Pasta, Breakfast Cereals, Raw and Cooked Meats.

Is this service accredited?

Yes, we are happy to confirm N.I.R. Analysis of Nutritional composition for Labelling Surveillance Testing for complex foodstuffs is UKAS accredited.

What are the main benefits of using N.I.R.?

There are four main benefits in using this service:

Fast turnaround time: As NIR analysis can be completed more quickly than other methods; we are able to offer a faster standard turnaround time – 3 working days (excluding sodium) and 5 working days (including sodium). Priority services are also available.

Cost savings: Due to the labour-saving technology of the NIR process, we can offer this analysis at a lower cost than our traditional method. Please contact us for up-to-date pricing.

Early product development: our NIR method enables a unique, rapid sneak peek at nutritional content before we progress to producing a label specification by traditional laboratory techniques.

Sustainability: This new, less-harmful method utilising reusable cups offers a more sustainable approach to nutritional testing, with a significant reduction in the use of chemicals, plastic waste and required energy.

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Will this methodology replace the current/traditional (Group 2) form of analysis?

No. The intended use of this method is as a secondary testing method to check a product's nutritional composition against existing product labelling or QC expectations. The values generated by this methodology should be considered with an appropriate level of uncertainty and should be confirmed by the associated primary methods in any cases of doubt.

Will we need to book the sample in via the Client Service Team in advance to give the laboratory advance notice (ie, in the same way as for a Priority Booking)?

In order to request samples for N.I.R. analysis, you will need to contact our Client Services Team to ask for the correct suite to be added to your ALS Solutions account. A technical assessment of samples / sample types may be required, and some additional comparison or suitability testing may be needed.

Is there any difference to the way in which I will need to submit samples?

No. Please submit samples in the same way as you currently do for any traditional form of chemistry analysis. (ie, via ALS Solutions and our sample collection service).

Which sample types is the method NOT suitable for and why?

Some sample types will not be suitable for this methodology. These include very high moisture samples like raw vegetables and drinks, soups and sauces. There could be a few reasons for a sample to not be suitable – the main reasons being sample colour or transparency, but also if a sample type is not yet fully represented within the calibration set. If a sample contains sugar substitutes, then it may not be possible to provide an accurate sugar or available carbohydrates result. Suitability of sample matrix will be assessed on a case-by-case basis and if there is any doubt, this may need to be confirmed via additional pre-testing.

Where will the analysis be carried out?

In keeping with all other forms of chemistry testing, the N.I.R. analysis will take place at our UK hub laboratory in Chatteris.

Will you have sufficient capacity to cope with demand from across ALS's client base?

We will be working to rolling out this completely new service on a phased basis to selected clients until we can better gauge the level of demand. The technology that underpins N.I.R. analysis does allow for high volume throughput which we are confident will meet the needs of our client base. However, if and when we approach full capacity we would look to invest in further equipment.

What size of sample do I need to submit?

As with routine analytical analysis, a typical sample size of 250g, or a full sample portion will be required.

What will happen if N.I.R. analysis produces an anomalous result that is significantly different from the pack label?

If the NIR result shows a deviation from the pack label then further testing can be performed using the primary method to verify the result obtained.

What are the reporting limits?

The range of application is as follows:

- Analyte Range:

- Dietary Fibre 0.5 to 100g/100g

- Moisture 0.1 to 100g/100g

- Protein 0.1 to 100g/100g

- Total Sugar 0.1 to 100g/100g

- Total Fat 0.1 to 100g/100g

- Saturated Fats 0.1 to 100g/100g

- Available Carbohydrates 0.1 to 100g/100g

If you have any additional questions, please contact our Client Services Team at Chatteris.

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