**Case Study**

Protein determination in petfood using Dumas

Customer: GA Pet Food Partners, United Kingdom

GA have more private label pet food brands than any other pet food manufacturer and offer pet food brands of any size - a total solution in private label pet food. From concept to launch, storage to dispatch, GA partners make it easy and profitable for pet food brands to launch and grow their business. GA’s continuous investment in sustainable world-leading manufacturing and nutrition expertise means brands benefit from a continuous stream of innovation.

Application: Rapid & accurate determination of Protein

Dumas is a rapid combustion reference method which provides GA Pet Food with the protein content of the extruded dried pet food, as well as raw materials including cereals, meat meals and fresh pasteurised meat. The measurement of these samples ensures that the whole process is monitored.

Equipment: BUCHI DuMaster D-480

The homogenised samples are wrapped in tin foil and combusted at high temperature in pure oxygen. The resultant combustion gases are pushed through the DuMaster using a carbon dioxide carrier gas. Unwanted gases are removed using catalysts and a reduction tube to leave only the nitrogen produced by the sample and carbon dioxide. A thermal conductivity detector (TCD) in combination with a reference flow of carbon dioxide determines the nitrogen in the sample enabling the protein value to be calculated.

Benefit / Conclusion: Unprecedented speed & reference accuracy

Results provided from the DuMaster D-480 are accurate, fast and of reference standard so GA Pet Food Partners can ensure that the high quality demanded by its customers is delivered. DuMaster reduces costs by using carbon dioxide as the carrier gas rather than more expensive helium traditionally used in Dumas instruments. Only oxygen and carbon dioxide are used no air is required for hydraulics. Accuracy is ensured as all the nitrogen produced is measured, no aliquot is taken. Easy maintenance and leak detection reduces downtime.

“On-site, rapid and accurate determination of protein has proved invaluable and compliments our NIR detection systems. It has been especially useful for our wet fresh meat samples and QC throughout our meat kitchens and Freshtrusion production facility. I would recommend the equipment.”

James Lawson, Joint MD GA Pet Food Partners.