Statement of measurement

ISO 9001 Quality Management certified by BSI under certificate number FS27613

Peanut flour

Quality Control Material LGCQC1020

Material Description

Light roasted, partially defatted, peanut flour

Indicative values

	g/100 g
Total Nitrogen	9.1
Water	4.8

Calculated value

	g/100 g
Protein	49.7

Note:

1. Using a nitrogen conversion factor of 5.46 [1]

Date of issue: April 2017

Signed: _____
Gill Holcombe (Mrs)
for the Government Chemist

Queens Road, Teddington, Middlesex, TW11 0LY, UK
Tel: +44 (0)20 8943 7000 • Fax: +44 (0)20 8943 2767 • www.lgcgroup.com

Material Preparation

This material is a commercial light roasted, partially defatted, peanut flour. The flour was manufactured by the Golden Peanut Company (GPC), LLC, Alpharetta, GA 30022, USA and was obtained from Byrd Mill (Byrd Mill Co., Ashland, VA 23005, USA).

The flour was thoroughly mixed and dispensed as 1 g portions into 6 mL amber glass vials. The vials were flushed with argon, plugged and then sealed using a crimp cap.

Homogeneity

The between-unit homogeneity of the material was assessed by analysing a representative number of units for nitrogen and water content, using sample intakes of 0.25 g and 0.015 g respectively.

Stability

The stability of LGCQC1020 will be assessed on a regular basis as part of LGC's reference materials stability monitoring programme.

Characterisation

Total nitrogen was determined at LGC using an automated Dumas method with a rapid N cube analyser (Elementar, Germany). This method falls within LGC's scope of accreditation for ISO/IEC 17025 (Testing).

Water was determined at LGC using a coulometric oven Karl Fischer procedure with a Metrohm 744 instrument (Metrohm, Germany). This method falls within LGC's scope of accreditation for ISO/IEC 17025 (Calibration).

Confirmation of the material as positive for peanut protein was achieved using test kits from the following manufacturers:

ELISA Systems (www.elisasystems.com)

Morinaga (www.miobs-e.com)

Neogen (www.neogeneurope.com)

R-Biopharm (www.r-biopharm.com)

Romer Labs (www.romerlabs.com)

Additional Information

Peanut flour from this commercial producer, and the same batch used to prepare this material, has been used widely as a test material in the development of methods to detect and quantify peanut protein in foods [2,3]. Studies have included quantification of the individual peptides present and the allergenic response to the flour in food challenge studies.

Intended Use

This material is intended for use as a quality control material for analytical methods used in the investigation of food samples for peanut and peanut protein. The minimum recommended sample intake is 0.25 g.

As the material is assigned indicative values only, it is not suitable for establishing method bias.

Storage and Handling

This material should be stored at (5 ± 4) °C in its original bottle. Before use, the sample should be allowed to reach ambient temperature (20 ± 5) °C. Thereafter, the bottle should be resealed tightly using the original plug, and stored at (5 ± 4) °C. The material stability is not affected by short periods of ambient handling during transport or use.

The material should be handled with care, following normal health and safety precautions.

Shelf Life

Providing it is stored in the original, unopened packaging under the recommended storage conditions, this statement will remain valid for a period of 12 months from the date of shipment.

References

1 J. B. Misra, 2001. Variation in Nitrogen-to-Protein Conversion Factor for Peanut. Peanut Science, 28, 48-51

2 Sayers, R.L., Johnson, P.E., Marsh, J.T., Barran, P., Brown, H. and Mills, E.N.C., 2016. The effect of thermal processing on the behaviour of peanut allergen peptide targets used in multiple reaction monitoring mass spectrometry experiments. Analyst, 141, 4130–4141 DOI: 10.1039/c6an00359a

3 Johnson, P.E., Sayers, R.L., Gethings, L.A., Balasundaram, A., Marsh, J.T., Langridge, J.I. and Mills, E.C., 2016. Quantitative Proteomic Profiling of Peanut Allergens in Food Ingredients Used for Oral Food Challenges. Analytical Chemistry, 88, 5689−5695, DOI: 10.1021/acs.analchem.5b04466

Unit Number	Date of Shipment

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