

## Instructions for Handling Chemical and Microbiological Test Materials and Recording Results

### Receipt and Storage

- On receipt of all test materials (except 749, 751 & 752), record the date and store at 2-8°C until ready to test.
- Test materials 749, 751 & 752 must be frozen upon receipt.
- The test material should be analysed in accordance with the deadlines shown on the website: <https://www.lgcpt.com/portal>

### Sample Details (Microbiological Test Materials)

- The microbiological test material represents a 'real' meat or fish sample, which may or may not contain the target organism(s), at a range of inoculum levels. Background flora may also be present.
- The samples are pre-weighed according to the scheme schedule. Test materials 739 and 740 are provided in a vial format with a pre-weighed quantity of fish/shellfish, 25g is supplied for presence/absence tests and 10g for enumeration tests.

### Resuscitation (Microbiological Test Materials 735, 736, 737, 738, 746)

1. Test the entire sample; do not sub-divide prior to dilution.
2. For **enumeration tests**, dilute the sample initially by 1 in 10 using your chosen diluent i.e. by adding 90ml of diluent to the 10g sample.
3. For **presence/absence tests**, dilute the sample with your chosen diluent or enrichment broth, according to your usual laboratory procedure.
4. Mix the test material thoroughly under aseptic conditions.
5. Leave the test material to resuscitate at room temperature for a minimum of 60 minutes, but no longer than 90 minutes.

### Resuscitation (Microbiological Test Materials 739, 740, 743, 744, 745)

1. Prepare diluent as stipulated by your test method in the volume appropriate for the sample size (10g or 25g sample).
2. Aseptically remove the cap and rubber stopper from the vial and add a small volume of diluent (around 2mls) to the vial. Replace the rubber stopper and mix the culture briefly by shaking or vortexing.
3. Add the reconstituted vial contents to the remaining diluent. It may be necessary to repeat step 2 a couple of times to ensure all material is transferred from the vial. Leave the test material to stand for a minimum of 60 minutes but no longer than 90 minutes.
4. Add the reconstituted test material prepared in steps 2 and 3 to the matrix, back-washing two or three times to ensure all the reconstituted test material is recovered.

### Testing (Microbiological Test Materials)

- Immediately before testing, mix the resuscitated sample thoroughly and then test for the target organism(s) using your routine laboratory methods.

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### Sample Details (Chemistry Test Materials)

- The chemistry test materials are samples of 'real' meat or fish based products.
- No pre-treatment (i.e. dilutions, etc) of any of the chemistry samples is required prior to analysis. However test materials may settle during transit. If required, please ensure test materials are thoroughly mixed prior to any sub-sampling or analysis is performed.
- To ensure the stability of sample 732 (Nitrate and Nitrite analysis) this material is provided in a lyophilised format.
- All samples should be analysed by the methods routinely used in your laboratory, which are appropriate to the analyte to be determined.
- Participants may submit results for some or all of the parameters requested.
- All samples should be equilibrated to room temperature 20(±5)°C before any analyses are performed.
- Full details regarding reporting units and format are available in the current QMAS Scheme Description.

### Test Material 730 & 731

#### Analyte – Nutritional Analysis

- Methods for the determination of fat have been provided to differentiate between acid hydrolysed and direct solvent extraction methods. For example: 'Soxtherm' or 'Soxtherm & acid hydrolysis'. Please ensure the most appropriate description of the method used is chosen from the options in PORTAL.
- Protein is to be expressed as the nitrogen content multiplied by 6.25 (i.e. protein = N x 6.25)
- Salt results are to be expressed as sodium chloride (NaCl).
- Sodium results are to be expressed as sodium (Na).
- Total Dietary Fibre values are to be reported
- Report each analyte as % and to 2 decimal places
- Report Phosphate results as %PO<sub>4</sub> to 2 decimal places
- Report Energy as either kcal/100g or kJ/100g to the nearest whole number using one of the following calculations (factors shown are for kJ):

1.  $(17 \times \text{protein}) + (37 \times \text{fat}) + (17 \times \text{total carbohydrate})$

2.  $(17 \times \text{protein}) + (37 \times \text{fat}) + (17 \times \text{available carbohydrate}^*) + (8 \times \text{total dietary fibre})$

\*Total carbohydrate – total dietary fibre

- Report carbohydrate as % using one of the following calculations:

Total Carbohydrate (Type 1) = 100 - (fat + protein + moisture + ash)

Available Carbohydrate (Type 2) = 100 - (fat + protein + moisture + ash + dietary fibre)

Please ensure the correct method is chosen from the options in PORTAL.

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### Test Material 732 (Nitrate and Nitrite)

- Take a weight of the test material appropriate to the method to be used. The aliquot weight must be adjusted to account for the freeze-dried format of the test material. An approximate guide is to weigh a third of a 'normal' test weight.
- For nitrite content, report results as mg/kg (as NaNO<sub>2</sub>).
- For nitrate content, report results as mg/kg (as NaNO<sub>3</sub>); where the nitrate content is calculated from the total nitrite content, less the free nitrite content.
- Report both nitrite and/or nitrate to one decimal place.

### Additional Information

- Test material 732 is a **freeze-dried (lyophilised)** meat product which effectively increases the value obtained for each of the parameters than for a standard meat product.
- If an instrumental method is used, please detail its type and principle of operation.

### Test material 733

#### Analyte – Hydroxyproline

- For hydroxyproline content, report results as % hydroxyproline to 2 decimal places.

#### Analyte – Nutritional Analysis

- For all fat parameters report the result(s) as % (g/100g) of the test material as provided to 2 decimal places.
- Saturates: defined as all fatty acids without double bonds.
- Mono-unsaturates: defined as all fatty acids which have one cis double bond.
- Poly-unsaturates: defined as all fatty acids which have multiple cis, cis methylene double bonds.
- Total trans fatty acids: defined as the sum of all mono and poly unsaturates where trans double bonds are present.

### Test Material 734

- Methods for the determination of fat have been provided to differentiate between acid hydrolysed and direct solvent extraction methods. For example: 'Soxtherm' or 'Soxtherm & acid hydrolysis'. Please ensure the most appropriate description of the method used is chosen from the options in PORTAL.
- Protein is to be expressed as the nitrogen content multiplied by 6.25 (i.e. protein = N x 6.25)
- Salt results are to be expressed as sodium chloride (NaCl).
- Sodium results as are to be expressed as sodium (Na).
- Each analyte to be reported as % to 2 decimal places

### Test Material 741, 742 and 747 (Specific elements)

- Report each specific element concentration in mg/kg to 2 decimal places.

### Test Material 748

- Histamine is to be reported in mg/kg to 2 decimal places.
- TVN and TMA are to be reported in mg/kg to 2 decimal places.

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### **Test material 749 (meat authenticity)**

- Participants will be provided with two 'packs' of samples for this PT round. Each 'pack' will contain 6 individual meat products (2g each), each sample containing a base meat material (e.g. beef) which may or may not also contain differing levels of alternate meats for assessment.
- Both 'packs' provided in each round will contain the same 6 sample types. Two 'packs' have been provided to allow duplicate analysis to be performed, if this is required as part of a laboratory's routine procedure. Only one result per sample type provided is required to be reported for proficiency evaluation.

### **Sample testing**

- Each sample pot contains 2 grams of test material for analysis. Participants are required to analyse the entire sample provided to ensure that a valid analysis result is obtained. Sub-sampling is not permitted to be taken as this will affect any analysis being performed.

### **Analysis & reporting – test material 749 (meat authenticity)**

- Participants are permitted and encouraged to apply their routine method of analysis to determine whether any other meat species are present in addition to the main matrix provided in each of the six samples provided. The presence/absence of other species material is then reported via LGC Standards' PORTAL reporting system. If other species are detected, participants who have the capability are also requested to return a quantitative value for the amount detected.
- All quantitative values reported are required to be expressed as percent (%w/w) to 2 decimal places.

### **Test material 751 (fish authenticity)**

- Participants will be provided with two 'packs' of samples for this PT round. Each 'pack' will contain 5 individual fish products (2g per sample) each containing differing concentrations of cod for speciation assessment.
- Both 'packs' provided in each round will contain the same 5 sample types. Two 'packs' have been provided to allow duplicate analysis to be performed, if this is required as part of a laboratory's routine procedure. Only one result per sample type provided is required to be reported for proficiency evaluation.

### **Sample testing**

- Each sample pot contains 2 grams of test material for analysis. Participants are required to analyse the entire sample provided to ensure that a valid analysis result is obtained. Sub-sampling is not permitted to be taken as this will affect any analysis being performed.

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### Analysis & reporting – test material 751 (fish authenticity)

- The scenario for the test material provided is that these samples represent products which claim to be cod. Participants are permitted and encouraged to apply their routine method of analysis to determine whether fish species other than cod are present in the sample and then to report their results via LGC Standards' PORTAL reporting system. If cod material is detected participants, who have the capability, are also requested to return a quantitative value for the amount of cod material present.

### Test material 752 (fish identification)

- Participants will be provided with two samples for identification. Each 'pack' will contain 2 individual fish products (approximately 20g per pack) each containing a different fish species for identification.

### Analysis & reporting – test material 752

- Participants are permitted and encouraged to apply their routine method of analysis to determine the fish species for both test materials. Results are to be reported via the LGC Standards' PORTAL reporting system.

### Recording Results

- All results should be submitted using PORTAL
- Please go to <https://www.lgcpt.com/portal>
- Login using your Lab ID, username and password.
- A PORTAL user guide can be downloaded from the help section.

If you need any help at all please do not hesitate to contact our support team using the details below or your local LGC representative.

Tel: +44(0)161 762 2500

Email: [support@lgcpt.com](mailto:support@lgcpt.com)

### Precautions

- Test materials contain viable micro-organisms or chemical contaminants and are supplied on the understanding that the purchaser has suitably competent and qualified personnel to handle them safely. Test materials must only be opened in a laboratory by qualified personnel.
- Refer to the Safety Data Sheet for information on the safe handling and disposal of the test materials.