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| PREPARED BY :<br>QC EXECUTIVE       | RAW MATERIAL SPECIFICATION | QA-LRM-1021010537     |
| APPROVED BY :<br>QUALITY<br>MANAGER | <b>QUICK OATS (OQ2425)</b> | Date issue : MAY 2009 |
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## SPECIFICATION PART

### A. Product Description

Quick Oats are derived from sound milling oats that have undergone a hulling process to remove the outer husk. The kernel is cut into desired lengths and best described to as oat chips. The oats chips is subjected to steam injection for stabilization prior to passing through large steel rolls to form a flake or rolled product. The “Quick” in the product description is related to flake size, thickness and cooking time.

### B. General Requirement

1. It shall be in the form of thin flakes of uniform size, having uniform light creamy color and odor characteristic of good quick oats.
2. It shall be free from rancid, bitter, musty, fermented or other undesirable taste and odor; added flavouring or coloring agents or other adulterants, and insect or fungus infestation.
3. It shall be free from infestations of weevils, worms, molds, smut, ergot and any foreign body such as wood chips, metal pieces, strings and stones.
4. The proportion of oats shall be not less than 98.0 % by mass, of which the proportion of unhulled oats kernels shall be not more than 1.0 % by mass.
5. The proportion of food grains other than oats shall be not more than 2.0 % by mass. The quantity of other foreign matter shall be not more than 0.1 % by mass.
6. The manufacturing process encompasses metal extraction and detection system through strategic earth magnet installations and screening techniques which will detect 2.5mm ferrous, 3.5mm non ferrous spherical and 4.0mm stainless steel spherical.
7. The material supplied shall be from the source of manufacturing facility agreed upon. The source, manufacturing facility or warehouse shall be inspected & approved by KBM QC if necessary. Material produced by other factory or facilities will not be accepted without prior approval by KBM.
8. We may visit your factory with prior arrangement.
9. The supplier/ manufacturer must provide a certificate of analysis (COA) for each delivery of goods to KBM.
10. The certificate of analysis shall include the batch number and / date of manufacturing.

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### C. Physical, Chemical and Microbiological Standards

| Parameter           | Standard   | Quality Monitoring        |
|---------------------|--|---------------------------|
|                     |  | COA Each new milling date |
| Thickness range, mm | 0.54 – 0.70  | ✓                         |
| Moisture (w/w)%     | 12.5% max  | ✓                         |
| 3350 µm             | 15 – 40%   | ✓                         |
| 2000 µm             | 40 – 75%   | ✓                         |
| 1170 µm             | <15 %  | ✓                         |
| 1180 µm             | <10%   | ✓                         |
| Protein             | 10.5g/100g   | On specification          |
| Total Fat           | 8.5g / 100g  | On specification          |
| Dietary Fiber       | 10.0g / 4g   | On specification          |
| Saturated fat       | 1.5g / 100g  | On specification          |
| Carbohydrated       | 61.0g / 100g   | On specification          |
| Sugar               | 0.0g / 100g  | On specification          |
| Sodium              | 3mg / 100g   | On specification          |
| Energy              | 1600KJ / 100g  | On specification          |
| Husk                | 0.05g per 100g max   | ✓                         |
| Bulk Density, kg/hl | 33.1 – 36.9  | ✓                         |
| Taste               | Natural oat taste, not rancid and no fermented taste/ odour. | On specification          |
| Colour              | Natural compare to standard sample                           | As per sample             |
| Total viable count  | <500 g   | On specification          |
| Yeast & Moulds      | <100 g   | On specification          |
| Coliforms           | <10 g  | On specification          |
| Insects             | Absent/100g  | Visual Inspection         |
| Rodent hairs        | 0 / 50g  | Visual Inspection         |
| Fragment of insect  | 0/50g  | Visual Inspection         |

Note : 1) Every delivery must have a COA (Certificate Of Analysis) from the manufacturer / supplier.

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**D. Packaging.**

**1. Palletization**

- The rolled oats shall be properly packed and seal in suitable, clean and dry multi wall paper bags.
- The bags shall be placed on pallets in good condition (no nails, or pieces of wood visible), dry, odourless and clean.
- The pallet is film wrapped.
- The pallet has one batch number only.

**2. Non palletization (put on the platform of lorry)**

- All the surfaces of the lorry platform (bottom and 4 sides) shall be carpeted with lorry canvas. Ideally use one single sheet of canvas and not to use more than 3 pieces of canvas if needed to join or combine smaller pieces together.

**3. Identification**

Each bag shall be suitably marked to give the following information :

- a) Name of the product.
- b) Guaranteed net weight of 25kg.
- c) Name and address of the manufacturer.
- d) Code number indicating date of manufacture or expiry date.
- e) Batch number
- f) Storage condition.

Goods received shall be rejected if not complying to the above requirements. Rejected lots shall be subjected to QC's disposition.

**E. Shelf Life and Storage Condition**

12 months stored in clean, cool and dry ventilated area, temperature 18<sup>0</sup> C maximum.

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**F. Delivery**

- 1) Delivery at ambient temperature with conditions as per item D.
- 2) The wooden floor of the lorry or containers shall be prelaidd with canvass sheet or polythene or cardboard linear to prevent wood chip contamination during loading and unloading.
- 3) Certificate of Analysis (COA) must be provided for each delivery. Batch code or manufacturing and expiry date must be indicated in COA.
- 4) The supplier shall indicate the manufacturing date in the Delivery Order (D.O). If the material deliver consist of more than one manufacturing date, the supplier shall indicate the manufacturing date or batch code and its quantity. Preferably not more than two different manufacturing or batch code in the same delivery. It shall be physically separated during the delivery.

**G. Acceptance / Rejection of Delivery.**

All deliveries of the materials are sampled upon receiving and inspected for compliance to KBM's specification and Food Regulation Malaysia. Deliveries that are damaged upon receiving or any non compliance to Food Regulation shall be rejected

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**H. Sampling Plan.**

Please refer to QA-LRM-00001

**I. KBM Incoming Quality Control**

1. Visual Examination.
  - i) It should be free from powdered or granular stock.
  - ii) No insect or wood chips.
  
2. Laboratory Control

| <b>Parameter</b> | <b>Standard</b>   | <b>Procedure number</b> |
|------------------|---|-------------------------|
| Moisture % (max) | 12.50 % max   | QA-LRM-20003            |
| Thickness, mm    | 0.54 – 0.70   | Digital micrometer      |
| Husks            | 0.05g per 100g  | Picking                 |
| Taste            | Natural Oat taste, not rancid and other objectionable odour and flavours. | Taste                   |
| Colour           | Natural –compare to standard sample                                       | Visual                  |

**J. Acceptance / Rejection Criteria**

If test result shows that the product is not meeting the requirements, then a second sample may be drawn. All rejected lots shall be subjected to QC disposition.

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**Revision History**

| <b>Rev.</b> | <b>DCN #</b> | <b>Change Description</b>                      | <b>Initiator</b> | <b>Approval</b> | <b>Effective Date</b> |
|-------------|--------------|--|------------------|-----------------|-----------------------|
| 0           | 5173         | New issued                                     | QC Executive     | Quality Manager | 15.11.2008            |
| 1           | 5371         | To update the spec as per supplier endorsement | QC Executive     | Quality Manager | 30.05.2009            |