

|                                                                                                               |                        |
|---------------------------------------------------------------------------------------------------------------|------------------------|
|  <h1>Food Safety Manual</h1> | <b>PROD SPEC: S2L</b>  |
|                                                                                                               | Revision: 03           |
|                                                                                                               | Issue Date: 09/10/2024 |
| <b>Product Specification: Style 2L</b>                                                                        | Page 1 of 5            |

## GENERAL REQUIREMENTS:

Natural Macadamia nut kernel extracted from non-genetically modified (hereafter referred to as non-GMO) varieties.

All processing, storage and transportation is done in accordance with the requirements of the South African National Standard (hereafter referred to as SANS) 10049:2019: Food Hygiene Management and

SANS 10330:2020: Requirements for a Hazard Analysis Critical Control Point (HACCP) system.

Lots will be reasonably uniform in shape, colour, and size.

However, because this is a natural non-GMO agricultural product, the product is subject to natural variation in colour and shading. Please refer to picture 1, as a typical representation of this product.

## PACKING:

The product will be placed in a modified atmospheric condition (hereafter referred to as MAP) and each carton will be Nitrogen/CO<sub>2</sub> flushed and vacuum packed (-25kPa to -50kPa) in food-grade, polymer bags in cartons of 25lbs/11.34kg.

Indicative Nitrogen/CO<sub>2</sub> transmission rate: polymer bags Max 0.1cm<sup>3</sup>/m<sup>2</sup>/day T=25°C, RH=75% at 1 bar. Indicative oxygen transmission rate: 38cm<sup>3</sup>/m<sup>2</sup>/24h T=23°C, RH=50% at 1bar.

Indicative water vapour transmission rate: 3,0 g/m<sup>2</sup>/24h T=25°C, RH=90% at 1 bar.

Each packaging unit will be identifiable by a barcoded label containing the brand name, product name, product style, date of packing, product grade, nett weight, batch code and a QR code.

The QR code serves as resource for additional information, usage statement and to enable customers to contact Mayo Macs (SA) Pty. Ltd. via the referenced web pages for any reason.



<https://rb.gy/htgg5i>

## PROCESSING AIDS:

Food-grade salt (NaCl) is used in the maturity separation process.

Peroxy Acetic/peracetic acid is used as a food-grade surface disinfectant.

Food-grade Carbon dioxide/Nitrogen is used in the MAP process.

| Physical Requirements                     | Value                  | Dimension | Tolerance               | Method  |
|-------------------------------------------|------------------------|-----------|-------------------------|---------|
| Whole Kernels                             | 50                     | %w/w      | Min                     | Visual  |
| Halves and Pieces                         | 50                     | %w/w      | Max                     | Visual  |
| Size (Wholes)                             | $\geq 16$<br>$\leq 20$ | mm        |                         | Sieving |
| Size (Halves and Pieces)                  | $\geq 13$              | mm        |                         | Sieving |
| Particles and Dust (<2mm)                 | 0.2                    | %w/w      | Max                     | Sieving |
| <b>Blemishes and Defects</b>              |                        |           |                         |         |
| Impacted shell ( $\geq 2\text{mm}$ )      | 2                      | %w/w      | Max                     | Visual  |
| Onion ring                                | 2                      | %w/w      | Max                     | Visual  |
| Basal discolouration                      |                        |           |                         |         |
| 791-Spot                                  |                        |           |                         |         |
| Shrivelled/Immature kernel                |                        |           |                         |         |
| Mould                                     | None                   | %w/w      | Max                     | Visual  |
| Insect Damage                             | 1                      | %w/w      | Max                     | Visual  |
| Insect Infestation                        | None                   |           | Max                     | Visual  |
| <b>Foreign material</b>                   |                        |           |                         |         |
| e.g. Glass/metal                          | None                   |           | Visual & Metal Detector |         |
| Nut Shell Pieces >2mm in Average Diameter | 1/100kg                |           | Max                     | Visual  |

## Product specific declarations:

|                    |                                                                                                                                                                                 |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Size:           | All sizes referred to are the average diameters obtained by using sieves with round holes with product moving over these screens during the size classification process.        |
| 2. Impacted shell: | Impacted shell is defined as Macadamia shell fragments $\geq 2\text{mm}$ in average diameter which are imbedded into the surface of the kernel because of the cracking process. |

**Picture 1:** Typical representation of Style 2L Macadamia kernel



| Microbiological Requirements  | Value        | Dimension          | Tolerance | Method     |
|-------------------------------|--------------|--------------------|-----------|------------|
| Total Aerobic Plate Counts    | 20 000       | Cfu/g              | Max       | ISO4833    |
| Yeast & Mould                 | 20 000       | Cfu/g              | Max       | ISO21527   |
| Coliforms                     | 300          | Cfu/g              | Max       | ISO4832    |
| <i>Escherichia coli</i>       | Not detected |                    |           | ISO16649   |
| <i>Staphylococcus aureus</i>  | 10           | Cfu/g              | Max       | ISO6888    |
| <i>Salmonella</i> spp.        | Not detected | Not detected/375 g | Max       | ISO6579    |
| <i>Listeria monocytogenes</i> | Not detected | Not detected/25g   | Max       | ISO11290-1 |

Although the product is only released on independent ISO 17025 accredited laboratory testing results, using accredited testing methods, the product has not been processed to control *Salmonella*.

This product must be processed to a validated 5-log kill step for this target microorganism prior to consumption.

| Chemical Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Value                                                                                                                                                                                 | Dimension  | Tolerance | Method |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|--------|
| Peroxide Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3.0                                                                                                                                                                                   | Meq/kg fat | Max       | AOCS   |
| Free Fatty Acids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.5                                                                                                                                                                                   | %          | Max       | AOCS   |
| Aflatoxin B1, B2, G1, G2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.0                                                                                                                                                                                   | µg/kg      | Max       | AOAC   |
| Aflatoxin B1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.0                                                                                                                                                                                   | µg/kg      | Max       | AOAC   |
| Moisture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.0                                                                                                                                                                                   | %          | Max       | AOAC   |
| Organoleptic Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                       |            |           |        |
| Appearance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sensibly uniform, natural cream colour kernels without objectionable discolouration, surface oil or hollow centres.<br>Some natural colour variation is normal and is to be expected. |            |           |        |
| Flavour/Odour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Characteristically fresh Macadamia kernel without off odours and stale, rancid, or foreign flavours.<br>Kernels must not develop off flavours after roasting.                         |            |           |        |
| Texture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Crunchy, firm, not pliable or leathery.                                                                                                                                               |            |           |        |
| Shelf Life                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                       |            |           |        |
| 18 Months from date of packing for raw Macadamia kernels, provided that the product is handled and stored in accordance with the specified storage conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                       |            |           |        |
| Allergens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                       |            |           |        |
| Macadamia nut kernel, tree nut allergen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                       |            |           |        |
| Intended use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                       |            |           |        |
| In compliance with the Preventive Controls for Human Food: Regulation (21 CFR Part 117), Mayo Macs (SA) (Pty) Ltd. has completed a hazard analysis and have identified micro-organisms – including but not limited to – <i>Salmonella</i> as a hazard requiring preventative control. The Buyer agrees that it does not require Mayo Macs (Pty) Ltd. to implement preventative controls for this identified hazard.<br>The Buyer agrees to accept full responsibility for processing all product using a validated 5-log killstep to control this identified hazard prior to making it available for consumption. |                                                                                                                                                                                       |            |           |        |

## STORAGE GUIDLINES:

Macadamia kernels are a perishable food product and should therefore be handled with the care expected for food products.

If stored/handled incorrectly, Macadamia oil inside the kernel could become rancid affecting shelf-life, quality and potentially food safety. The product should be stored in its original unopened packaging in a cool (Maximum 25°C), dry ( $\pm 50\%$  RH), well-ventilated area, away from direct sunlight, free from dust, taint, insects/pests and/or vermin infestation.

**The product should be regularly checked for any change in quality.**

Mayo Macs SA (Pty) Ltd cannot guarantee the shelf-life of any product re-packed/stored or handled outside of its direct control.



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