

# **Specification for Importation of Disintegrated Dehydrated Coconut kernel with outer brown skin (Testa) for Production of Coconut Oil**

## **1. Product Description**

The kernel of the coconut fruit ( *Cocos nucifera* Linn ), the solid endosperm of the fruit with the husk and shell removed, consisting coconut meat covered by the brown outer skin referred to as Testa, in the form of chips or shredded which is dehydrated to a moisture level of 3.5 %.



Figure 01: Appearance of disintegrated dehydrated coconut kernel

Particle Size : 1.4 -2.8 mm in the spec

## **2. Application**

The disintegrated dehydrated coconut kernels will be used for the extraction of edible coconut oil.

## **3. Definitions**

3.1 Coconut: The fruit of the coconut palm, *Cocos nucifera* Linn.

3.2 Kernel: Solid endosperm of the coconut fruit with the husk and shell removed, consists of cellular white layer commonly termed as coconut meat covered by a brown outer skin (Testa).

3.3 Coconut oil: The product obtained from the coconut kernel ( *Cocos nucifera* Linn.) by a process of expression/heat or solvent extraction.

3.4 Dehydrated Coconut kernel: The coconut kernels of which water is removed by dehydration

3.5 Extraneous matter: All matter other than Disintegrated Dehydrated Coconut kernel including brown skin of the kernel (Testa).

#### **4. Ingredient**

Coconut as defined in 3.1

The dehydrated coconut should contain 100% ration of the full kernel parts only. Any additional ration of coconut kernel parts or any other similar oil palm parts cannot be blended into the product. A certification should be issued in relation to the above claiming free from any additional blends or mixes.

#### **5. General Requirements**

##### **5.1 Packaging size: 50 kg**

##### **5.2 . Hygiene**

The product shall be processed, packed, stored, and distributed under hygienic conditions prescribed in SLS 1590:2018, or a compatible Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3 (1997), Amended 1999. Proof of the code of practice shall be submitted.

##### **5.2 Appearance**

5.2.1 The product shall be cleaned and free from oil separation, when visually examined.

5.2.2. The colour shall be characteristic of coconut kernel.

5.3. The product should be free from mold (fungal) growth.

##### **5.3 Flavour and odour**

5.3.1 The taste shall be characteristic of dehydrated coconut without off flavours. 5.3.2 The odour shall be characteristic of the dehydrated coconut. It shall not be mouldy, cheesy, soapy, smoky, fermented, and rancid and shall not possess any undesirable odour.

##### **5.4 Extraneous matter**

The product shall be free from soil, sand & other extraneous matter.

## 5.5 Technical specifications

The product shall comply with the specific requirements given in Table 1, Table 2 & Table 3 when tested in accordance with the methods specified therein.

5.5.1 Table 1. Physical & Chemical requirements

SI No	Characteristic	Requirement	Method of test
i)	Moisture, percent by mass, (max)	3.5	SLS 98: 2013 Appendix D
ii)	Oil content per cent by mass. (min)	60	AOAC method 948.22
iii)	Total acidity of the extracted oil, as lauric acid, % by Max,0.3	0.8	SLS 313: Part 2/section 6 (ISO 660: 2009)
iv)	Iodine Value (IV of the extracted oil)	7.5-11	SLS 313: Part 2/section 2

5.5.2 Table 2. Microbiological Requirements

SI No	Test Organism	n	c	Limit		Method of Test
				Min.	Max.	
i	Yeast and Mould Count, per g	5	2	50	$1 \times 10^2$	SLS 516 – Part 2/ Section 2 (ISO 21527 - 2: 2008)
ii	Aerobic Plate Count, per g	5	2	$5 \times 10^3$	$1 \times 10^5$	SLS 516 Part 1 (ISO 4833)
iii	Coliform, MPN per g	5	2	00	10	SLS 516 – Part 3/ Section 1 (ISO 4831: 2006)
iv	<i>E. coli</i> , MPN per g	5	0	00	-	SLS 516 – Part 12 (ISO 4831: 2006)
v	<i>Salmonella</i> , per 25 g	5	0	00	-	SLS 516 – Part 5 (ISO 6579 - 1: 2017)

n is the number of sample units to be tested c is the maximum allowable number of sample units yielding values between Min and Max.

Min is the limit under which a count is acceptable for any sample unit

Max is the limit above which count is unacceptable for any sample unit.

### 5.5.3 Table 3. Toxins/ Contaminants

The products shall be free from any substance which may represent a hazard to health. The contaminants content in the product shall not exceed the following limits, when tested in accordance with the method prescribed in (Max.)

SI No	Toxin/ Contaminant	Limit	Test Method
i	Aflatoxin B1, µg/kg (ppb), max	2	SLS 962: Part 1 (ISO 16050:2003) or relevant AOAC method.
ii	Total content of Aflatoxins (B1+B2+G1+G2), µg/kg (ppb), max	4	SLS 962: Part 1 (ISO 16050:2003) or relevant AOAC method.
iii	Heavy Metals	0.1	AOAC 986.15 or 2013.06
	Arsenic, as As, mg/kg, max.	0.1	AOAC 999.11 or 2013.06
	Lead, as Pb, mg/kg, max	0.1	AOAC 999.11 or 2013.06
	Cadmium, as Cd, mg/kg, max		
iv	Poly Aromatic Hydrocarbons (PAH) Benzo(a)pyrene, µg/kg, max	2.0	SLS 313: Part 3 Section 15
	Total PAH, µg/kg, max	20	SLS 313: Part 3 Section 16
v	Pesticide Residues	Product shall comply with the maximum levels of the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995)	

## 5.6 Phytosanitary Requirement

5.6.1 The importer should submit a import permit application with the recommendation from CDA and Ministry of Agriculture

5.6.2 The product shall be free from pests, diseases and weed seeds; the consignment shall be free from *Trogoderma granarium* (Khapra beetle).

5.6.2 The consignment must accompany a phytosanitary certificate issued by the Plant Protection Organization of the Exporting Country issued within 14 days prior to the dispatch of the consignment.

The certificate shall declare following details:

- i. Botanical name of the commodity
- ii. The place and country where the mother plants were grown
- iii. Additional Declarations.
  - a. The consignment is inspected and found to be free from khapra beetle ( *Trogoderma granarium* )
  - b. The product is obtained from a country / area free from coconut cadang-cadang viroid disease (CCCVD)
- iv. The fumigation details must be endorsed in the relevant place of phytosanitary certificate

5.6.3 Joint inspection by NPQS, CDA and CRI and laboratory investigation (at NPQS and CRI) will be undertaken to verify the absence of injurious pests and storage pathogens. (Accredited Lab with Local Agent)

## **6. Packaging and Marking**

### **6.1 Packaging**

6.1.1. The packaging material of food grade quality shall be such as to protect against bacteriological and other contamination. It shall protect the product against any infiltration of moisture, re-hydration and leaking.

The packaging material shall not impart any odour, taste or colour or any other extraneous property to the product & shall not result in contamination of the product.

6.1.2. Disintegrated dehydrated coconut kernels shall be packed at the point of manufacture in food grade, multiwall, paper sacks conforming to SLS 1067 (or equivalent ISO standards or equivalent standards of the country of origin of product) or corrugated cartons .

6.1.3. The liner used shall be a food grade, low density polyethylene (LDPE) conforming to SLS 699 (or equivalent ISO standards or equivalent standards of the country of origin of product) having a thickness of at least 88 µm for bulk packaging (25 kg and above) or other single layered laminated material of equivalent barrier properties.

## **6.2 Marking**

6.2.1 The following shall be marked legibly and indelibly on the containers

- a) Country of origin
- b) The name & the type of the product
- d) Date, Month and the Year of Manufacture and the Date of Expiry
- c) The names and the address of Manufacturer/ Packer/Exporter
- d) Batch Code number or any other identification number
- e) Any other information requested by the buyer/importer.

## **7 . SPECIAL REQUIREMENT**

7.1 Before dispatching from the port of loading, a complete Analysis Report having obtained from an accredited laboratory of the country of origin, representing the whole consignment should be submitted to prove that dehydrated coconut kernels are free from *Salmonella* and *Escherichia coli* and also the test results of the other parameters within limit prescribed in this document.