

PRODUCT SPECIFICATION

Amaranth Seeds



PATEL AGRO Since 1992
FOODS INDUSTRIES

PATEL FOODS, HEALTHY FOODS

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Document No: PAFI/AMR/2025

Version: 1.1, Issue Date: 11-01-2025

Last Rev: 01-01-2026

Company	Patel Agro Foods Industries (PAFI)
Product Name	Amaranth Seeds (Cleaned, Graded)
Botanical Name	<i>Amaranthus spp.</i>
HS Code	10089090
Country of Origin	India
Processing Location	Deesa, Gujarat, India

Description: **Amaranth seeds** (*Amaranthus spp.*) are small, light-colored pseudo-cereal grains rich in protein, fiber, and essential micronutrients. Sourced from Indian farms and processed under hygienic, food-safe conditions, the seeds are cleaned, graded, and packed for use in food manufacturing, oil extraction, milling, and health-oriented applications.

This product is intended for business-to-business (B2B) use and complies with relevant food safety regulations. It is naturally gluten-free, non-GMO, and suitable for dry storage. The product is supplied in bulk packaging with batch-wise quality control and COA support.

Application & End-Use Suitability:

This product is suitable for multiple industrial and food-grade applications:

- **Popping / Puffing Industry** – for snack manufacturers and breakfast cereals
- **Flaking & Milling** – for gluten-free flour and bakery applications
- **Oil Extraction** – suitable for cold-pressed amaranth oil production
- **Health Food & Functional Products** – protein-rich formulations, granola, energy bars
- **Infant & Nutritional Food** – due to high protein and micronutrient content
- **Retail Packing / Private Label** – suitable for consumer packaging

All processing steps follow ISO 22000:2018, HACCP principles, and EU food safety regulations including packaging contact compliance (EC 1935/2004, EC 10/2011).



1. Physical & Chemical Parameters

	Parameter	Result
1.1	Purity	99.99% (Sortex Cleaned)
1.2	Moisture	≤ 10.0%
1.3	Foreign Matter	≤ 0.2%
1.4	Oil Content	6-8%
1.5	Ash Content	Max. 3%
1.6	Stones, Metal, Glass, and Plastic	Absent
1.7	Color	Pale yellow to creamy white
1.8	Odor	Characteristic, free from musty or rancid smell
1.9	Taste	Neutral
1.10	Gluten Free	Naturally gluten-free
1.11	Vegan	Suitable for vegan and vegetarian diets

2. Microbiological Parameters

	Parameter	Result
2.1	Total Plate Count	< 100,000 CFU/g
2.2	Yeast & Mold	< 1,000 CFU/g
2.3	Salmonella spp.	Absent in 25g
2.4	Escherichia coli	Absent in 1g
2.5	Coliforms	< 100 CFU/g
2.6	Aflatoxin (B1, B2, G1, G2)	< 4 ppb
2.7	Ochratoxin A	As per EC 1881/2006

3. Chemical & Nutritional Parameters

	Parameter	Result
3.1	Protein	13–15g
3.2	Energy	370 kcal per 100g
3.3	Fat	6–8g
3.4	Carbohydrate	60–65g
3.5	Dietary Fibre	7–9g

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4. Contaminants & Residues

	Parameter	Result
4.1	Pesticide Residue	Within EU MRL limits (EC 396/2005) – Tested via Intertek Lab
4.2	Heavy Metals	Within EU limits (Pb < 0.20 ppm, Cd < 0.10 ppm, As < 0.10 ppm, Hg < 0.05 ppm)
4.3	Allergens	Free from 14 major allergens as listed in Annex II of EU Regulation (EU) No. 1169/2011.
4.4	Aflatoxin (B1+B2+G1+G2)	Within EU Limits
4.5	Ochratoxin A	Within EU limits

5. Testing Laboratory (Intertek – ISO/IEC 17025 Accredited)

All analyses are performed by **Intertek**

- ISO/IEC 17025 accredited
- Methods: GC-MS, LC-MS/MS, ICP-MS, HPLC-FLD, ISO microbiological methods

6. Processing Conditions & Controls

	Parameter	Result
5.1	Heat Treatment	None applied; processed under ambient temperature (< 40°C)
5.2	Metal Detection Sensitivity	Fe 1.5 mm / Non-Fe 2.0 mm / SS 2.5 mm
5.3	Sieves Used	1 mm and 2 mm mesh during cleaning and grading
5.4	Foreign Matter Prevention	Destoner, gravity separator, color sorter, metal detector

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Amaranth Seeds**7. Particle Size / Granulation:**

- Whole grain
- Typical grain diameter: **1.0–2.2 mm**
- Custom sieving available on request

8. Commercial Terms**Minimum Order Quantity (MOQ):**

- Standard Order: 1 FCL (Full Container Load)
- Trial Order: Available (subject to discussion)

Packaging & Loading:

- Approx. 19–22 MT per 20' FCL (depending on packing format)
- Customized loading available based on buyer requirement

Lead Time:

- 7–10 working days from order confirmation (for standard quantities)

Port of Loading:

- Mundra / Nhava Sheva (India)

9. Packaging Details

All packaging (Kraft Paper Bag/ PP woven Bag/ FIBC Bags) is suitable for direct food contact and export compliant. Custom labeling and palletization available as per buyer's requirement

10. Traceability

Full lot-based traceability is maintained from farm sourcing to final export. Each batch is traceable to farmer group, harvest season, and processing lot.

11. Storage & Shelf Life

Storage: Cool, dry place, away from sunlight and pests

Shelf Life: 12 months from date of packing (can extend up to 18 months under ideal storage)

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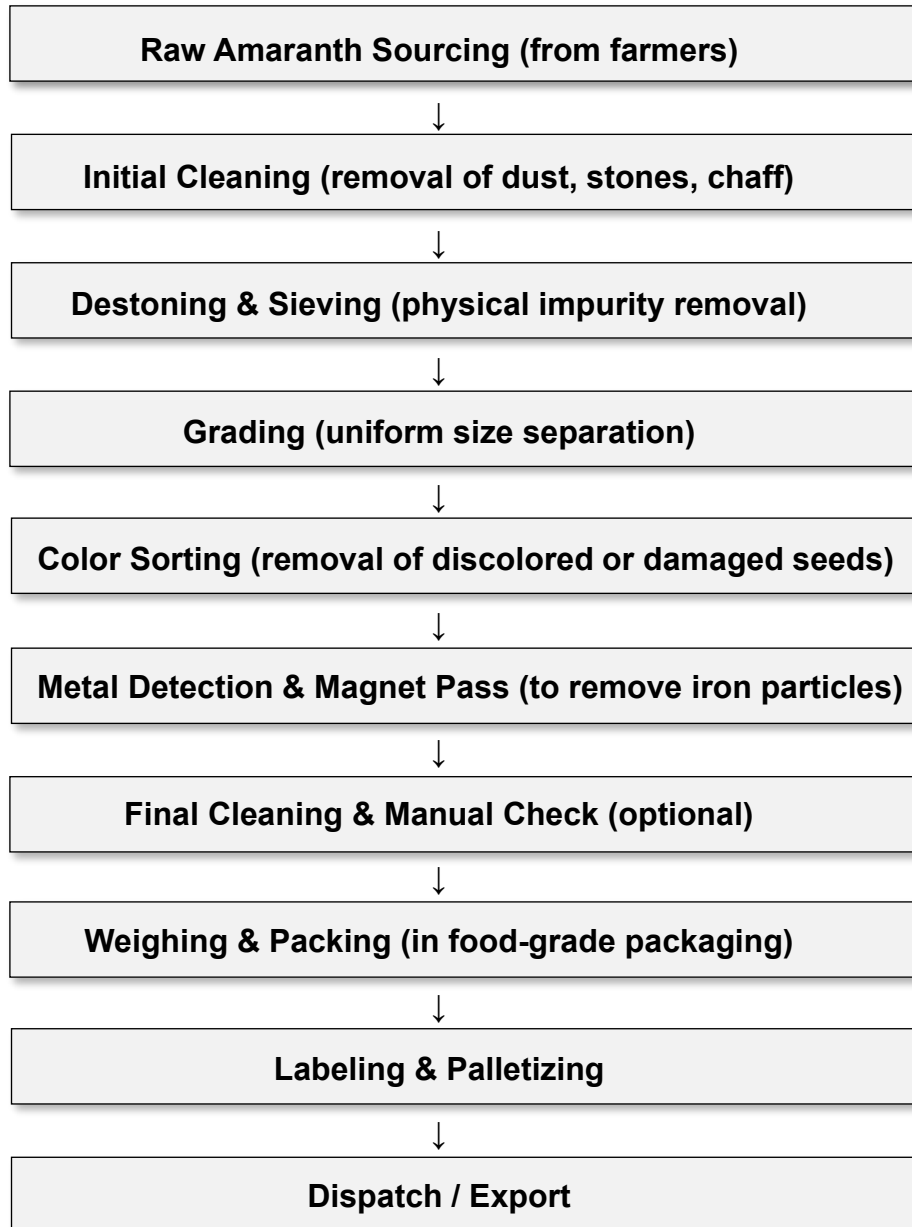
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PROCESS FLOW CHART (AMARANTH)



All processing steps follow ISO 22000:2018, HACCP principles, and EU food safety regulations including packaging contact compliance (EC 1935/2004, EC 10/2011).

Amaranth Seeds



1. Raw Material Procurement

Amaranth seeds are procured directly from approved farmer groups. Each incoming lot is documented and inspected for visible contamination and traceability.

2. Pre-Cleaning

Seeds are passed through a sieve separator to remove large impurities such as straw, leaves, pods, and other coarse materials.

3. Destoning and Air Classification

A destoner separates heavy particles like stones and glass, while air blowers remove lightweight impurities such as husk and dust.

4. Magnet Detection

Seeds pass through **high-intensity magnets** ($\geq 10,000$ Gauss) to eliminate ferrous metal fragments before further processing.

5. Fine Cleaning and Sieving

Precision sieving removes remaining fine particles and aligns the seed size for uniformity.

6. Grading

Seeds are graded by size to enhance purity and visual consistency for food and oil-use applications.

7. Color Sorting (Optical Sorting)

A digital color sorter removes discolored, burnt, or defective seeds using camera-based technology.

8. Metal Detection

A final **metal detector** (multi-frequency) screens for both ferrous and non-ferrous particles prior to packaging.

9. Final Manual Sorting (if required)

Manual visual inspection is conducted for high-purity lots or upon customer request.

10. Packaging

Seeds are packed in **food-grade, export-compliant bags** (25 kg paper bags or FIBC with inner liners), labeled with product name, batch number, and shelf life.

11. Palletization and Storage

Bags are stacked on sanitized pallets and stored in a clean, ventilated, pest-monitored warehouse under dry conditions.

12. Dispatch

Each batch is tested for quality and safety parameters. A **Certificate of Analysis (COA)** is provided along with export documents before shipment.