

NIGERIAN CASSAVA STARCH

FOOD GRADE & INDUSTRIAL GRADE

Commercial & Technical Product Dossier

1. Product Overview

Nigerian cassava starch is a fine, white starch powder produced from cassava and supplied for food-processing and industrial applications. Cassava starch is classified in Nigerian standards as food grade or industrial grade; industrial starch may be supplied in an application-specific form.

This dossier presents the analytical results shown on the supplied Certificate of Analysis (COA) for two samples identified as Food Grade 1 and Food Grade 2 in the certificate, together with the commercial positioning of food-grade and industrial-grade material.

2. Food Grade Cassava Starch

Food-grade cassava starch is intended for controlled food-processing applications where whiteness, fine particle size, moisture, pH, ash, fibre, microbiological quality and contaminant levels are important. The supplied COA describes the material as a fine, smooth, white starch powder.

Typical applications include:

- Thickening and stabilising in food formulations
- Custard, sauces, soups and processed foods
- Bakery, confectionery and noodle/pasta formulations
- Binding and texture modification
- Selected gluten-free and starch-based formulations, subject to the buyer's formulation and regulatory requirements

3. Industrial Grade Cassava Starch

Industrial-grade cassava starch is designed for technical and manufacturing applications in which functional performance is more important than food-grade positioning. It can be supplied against the technical specification agreed in each purchase contract.

Contract-specific viscosity: For industrial buyers, viscosity can be adapted to the requirement of each purchase contract and end-use process. This allows the starch specification to be developed around the buyer's required viscosity/pasting behaviour, rather than offering one fixed industrial specification.

Potential industrial applications include:

- Paper and cardboard manufacturing — sizing, coating and binding functions
- Textile manufacturing — textile sizing and finishing processes
- Pharmaceutical manufacturing — selected excipient and processing applications, subject to the buyer's pharmacopeial and regulatory specification
- Adhesives and glue manufacturing
- Corrugated packaging and paper-converting applications
- Other technical uses requiring controlled starch functionality

For each industrial contract, the buyer should specify the required viscosity/pasting profile, moisture, fineness, ash, pH and any other application-specific parameters. A pre-shipment sample and agreed COA can then be used as the quality reference for recurring deliveries.

4. Certificate of Analysis — Analytical Results

The following values are transcribed from the supplied COA. They should be treated as sample-specific analytical results, not as universal specifications for every future production lot.

Parameter	Food Grade 1	Food Grade 2	NIS reference shown on COA
Appearance / Texture	Fine, smooth starch powder	Fine, smooth starch powder	Fine, smooth starch powder
Colour	White	White	White
Conductivity, $\mu\text{S}/\text{cm}$	89	132	1000
Total Dissolved Solid (mg/L)	102	109	—
Moisture content (%)	7.768	9.584	13 max
pH (10% slurry at 25°C)	6.01	5.71	5–7
Total acidity (as lactic acid %)	0.267	0.308	1
Sulphated ash (%)	0.418	0.429	0.6
Fines (%)	96.90	96.10	Equal or $\geq 95\%$
Crude fibre (%)	0.257	0.462	0.5
Crude protein (%)	0.357	0.402	0.6
Ash (%)	0.16	0.19	<0.3%
Crude fat (%)	0.058	0.049	—
Carbohydrate (%)	91.233	88.976	Min 70
Energy (kcal/100 kg)	366.882	357.953	—
Hydrocyanic acid (mg/kg)	1.054	1.216	10
Iron (mg/kg)	8	13	22
Arsenic (mg/kg)	ND	ND	0.1
Lead (mg/kg)	0.1	0.1	0.1
Copper (mg/kg)	0.105	0.089	4.3

5. Microbiological Analysis

Parameter	Food Grade	Industrial Grade	NIS reference shown on COA
Salmonella/Shigella (cfu/ml)	0	0	0
Aerobic Mesophilic Count (cfu/ml)	1.00×10^3	1.00×10^3	100000
Coliform Count (cfu/ml)	0	0	100
E. coli (cfu/ml)	0	0	0
Yeasts & Molds Count (cfu/ml)	0	0	1000

6. Key Quality Observations from the Supplied COA

- Both samples are described as fine, smooth, white starch powder.
- Moisture is reported at 7.768% for Food Grade 1 and 9.584% for Food Grade 2.
- pH is reported at 6.01 and 5.71 respectively.
- Fines are reported at 96.90% and 96.10%, indicating a high proportion of fine particles.
- Hydrocyanic acid is reported at 1.054 mg/kg and 1.216 mg/kg, below the 10 mg/kg reference shown on the COA.
- Arsenic is reported as ND (Not Detected) in both samples.
- Salmonella/Shigella, coliforms, E. coli, and yeasts & moulds are reported as 0 in both food and industrial samples.

7. Commercial Supply Proposal

The product can be offered to international buyers as Nigerian-origin cassava starch with a technical specification agreed before contract signature. For food-grade purchases, the agreed specification should define food-use parameters and microbiological requirements. For industrial purchases, the contract should define the intended application and the functional parameters required by the buyer.

Recommended contract specification procedure:

1. Buyer identifies application and target performance.
2. Seller confirms available production specification and provides a representative COA.
3. Buyer reviews and approves the technical specification and sample.
4. Contract records the agreed quality parameters and tolerances.
5. For industrial grade, viscosity/pasting behaviour is adjusted to the agreed application requirement where technically feasible.
6. Each shipment is accompanied by a batch-specific Certificate of Analysis.

8. Important Technical & Regulatory Note

ISO 22000 is a food-safety management-system standard; it should not be interpreted as a product specification by itself. Final acceptance should always be based on the buyer's destination-country regulations, agreed product specification, batch COA and any required independent inspection or testing.

9. Buyer Specification Checklist

- Application / end use
- Food grade or industrial grade
- Required viscosity or pasting profile
- Moisture limit
- Fineness / particle-size requirement
- pH range
- Ash and fibre limits
- Microbiological limits
- Contaminant limits
- Packaging format and bag size
- Monthly / annual quantity
- Delivery term and destination
- Inspection and testing procedure
- Required export and regulatory documents

CERTIFICATE OF ANALYSIS

I hereby certify the above samples while in the condition as received by me was analyzed and examined by me or under my direction and the following data to be true specification of the obtained results of the test and assay.

S/N	Parameter	Food Grade 1	Food Grade 2	NIS Standard (NIS344:2004 and ISO 22000:2018)
1	Appearance / Texture	Fine, smooth starch powder	Fine, smooth starch powder	Fine, smooth starch powder
2	Colour	White	White	White
3	Conductivity, $\mu\text{S}/\text{cm}$	89	132	1000
4	Total Dissolved Solids (mg/L)	102	109	—
5	Moisture content (%)	7.768	9.584	13 max
6	pH (10% slurry at 25°C)	6.01	5.71	5-7
7	Total acidity (as lactic acid %)	0.267	0.308	1
8	Sulphated ash (%)	0.418	0.429	0.6
9	Fines (%)	96.90	96.10	Equal or >95%
10	Crude fibre (%)	0.257	0.462	0.5
11	Crude protein (%)	0.357	0.402	0.6
12	Ash, %	0.16	0.19	<0.3%
13	Crude fat (%)	0.058	0.049	—
14	Carbohydrate (%)	91.233	88.976	Min 70
15	Energy (kcal/100kg)	366.882	357.953	—
16	Hydrocyanic acid (mg/kg)	1.054	1.216	10
17	Iron (mg/kg)	8	13	22
18	Arsenic (mg/kg)	ND	ND	0.1
19	Lead (mg/kg)	0.1	0.1	0.1
20	Copper (mg/kg)	0.105	0.089	4.3

S/N	Microbial Analysis	Food Grade	Industrial Grade	NIS Standard (NIS344:2004 and ISO 22000:2018)
1	Salmonella/Shigella (cfu/ml)	0	0	0
2	Aerobic Mesophilic Count (cfu/ml)	1.00×10^3	1.00×10^3	100000
3	Coliform Count (cfu/ml)	0	0	100
4	E. coli (cfu/ml)	0	0	0
5	Yeasts & Molds Count (cfu/ml)	0	0	1000

Key: ND= Not detected

Comments: The test carried out gave satisfactory results in accordance with specifications in NIS for Cassava starch NIS344:2004 and ISO 22000:20183231

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