

Tomato paste plant in Nigeria ½ sachet packing and local concentrate production

Target application: tomato paste plant nigeria

Reference configuration: 3,000 kg/h finished product from aseptic bulk paste (500½5,000 kg/h configurable)

Nigeria is the largest tomato paste market in West Africa and almost all of it is sachet. Two project types work: a rework and sachet packing plant fed with imported aseptic bulk, which starts producing within a year and runs 250½300 days, or a campaign plant in Kano, Kaduna, Katsina or Jigawa fed by contracted growers, which needs a reliable inbound tonnage before evaporation makes sense. MCF configures both, with the power and water assumptions Nigerian sites actually have.

SCOPE OF SUPPLY

- Rework section: aseptic bulk emptying, standardization 22½28 ½Brix, pasteurization, sachet and can filling
- Campaign section (optional): reception, washing, sorting, hot break, extraction, multi-effect evaporation
- Electrical design 415 V / 50 Hz with full generator backup, AVR and load shedding
- Water treatment for borehole water, wash-water recovery and effluent pre-treatment
- Steam generation on gas, LPG or diesel depending on site supply
- Multi-lane sachet lines (50½100 g) plus can formats for food service
- NAFDAC product registration support and SON / SONCAP documentation
- Installation, commissioning, operator training and spare-parts planning for remote sites

TYPICAL OUTPUTS

Sachets 50 / 70 / 100 g ½ the dominant retail format ½ Cans 400 g ½ 4.5 kg for food service ½ Standardized paste 22½28 ½Brix ½ Local concentrate 28½30 ½Brix (campaign configuration)

DIMENSIONS AND BUILDING ENVELOPE

Process and filling footprint	700½900 m½ at 3,000 kg/h (250½350 m½ at 500 kg/h, 1,100½1,300 m½ at 5,000 kg/h)
Clear height	6½7 m under beam over mixing and thermal section, 4.5 m over filling
Drum unloading station	60½110 m½, two alternating stations above 3,000 kg/h
Mixing bay	2 ½ 6,000 L tanks, 120½180 m½ including gravimetric dosing platform
Thermal section	90½140 m½ for pasteurizer, hold cell, buffer tank and CIP interface
Filling and packing	260½380 m½ including seamer, pasteurization tunnel, coding and case packing
Bulk and finished storage	500½900 m½ for inbound drums / IBCs and finished pallets

LAYOUT ½ FUNCTIONAL ZONES IN FLOW ORDER

1 ½ Bulk intake	Drum, IBC and bag-in-box reception, sampling and traceability scanning
2 ½ Unloading	Heated drum emptying stations, filtering, transfer pumps
3 ½ Mixing & recipe	Mixing tanks with agitator, gravimetric dosing of water, salt, sugar and spices
4 ½ Standardisation	Continuous mass-flow loop with inline refractometer, ½ 0.2 ½Brix at steady state
5 ½ Thermal treatment	Tubular or scraped-surface pasteurizer 92½98 ½C with validated holding section
6 ½ Filling & closing	Cans, glass jars, sachets or doypacks with seaming / capping and vacuum control

7 ½ Pasteurization tunnel	Tunnel or retort, cooling section and dryer before labelling
8 ½ End of line	Coding, labelling, case packing, palletizing and finished-goods staging
9 ½ Utilities & CIP	Steam skid, chilled water, compressed air, water treatment, CIP skid

UTILITIES AND CONSUMPTION

Installed power	350½450 kW at 3,000 kg/h (90½140 kW at 500 kg/h, 550½700 kW at 5,000 kg/h)
Steam	1.5½2.5 t/h saturated at 6½8 bar at 3,000 kg/h
Process and cooling water	8½12 m½/h at 3,000 kg/h, treated and softened before dilution
Compressed air	300½500 Nm½/h at 7 bar
Effluent	3½7 m½/h to treatment, mainly CIP and tunnel blowdown
Manning	6½9 operators per shift including QC and end-of-line
Operating calendar	250½300 days/year, 16½20 productive hours/day ½ not a seasonal campaign

CAPEX, OUTPUT AND PAYBACK

Nigerian project ½ investment profile

Rework and sachet packing is the lower-risk entry; the same grid also frames the step up to a campaign plant with evaporation.

500 kg/h finished product	Turnkey CAPEX: ½0.6 ½ 0.9 million Annual output: 1 500 ½ 2 200 t/year packed EBITDA: 12 ½ 18% of revenue Payback: 3 ½ 4.5 years Commissioning: 7 ½ 9 months contract-to-commissioning
1 000 kg/h finished product	Turnkey CAPEX: ½0.9 ½ 1.4 million Annual output: 3 000 ½ 4 400 t/year packed EBITDA: 14 ½ 19% of revenue Payback: 3 ½ 4 years Commissioning: 8 ½ 10 months contract-to-commissioning
2 000 kg/h finished product	Turnkey CAPEX: ½1.5 ½ 2.3 million Annual output: 6 000 ½ 8 800 t/year packed EBITDA: 15 ½ 20% of revenue Payback: 3 ½ 4 years Commissioning: 9 ½ 12 months contract-to-commissioning
3 000 kg/h finished product (reference)	Turnkey CAPEX: ½2.2 ½ 3.2 million Annual output: 9 000 ½ 13 000 t/year packed EBITDA: 16 ½ 21% of revenue Payback: 2.5 ½ 4 years Commissioning: 10 ½ 13 months contract-to-commissioning
5 000 kg/h finished product	Turnkey CAPEX: ½3.4 ½ 4.8 million Annual output: 15 000 ½ 22 000 t/year packed EBITDA: 17 ½ 23% of revenue Payback: 2.5 ½ 3.5 years Commissioning: 12 ½ 15 months contract-to-commissioning

Assumptions behind the figures

- 250½300 working days per year, 16½20 productive hours per day: the feedstock is stored aseptic concentrate, not seasonal fresh tomato.
- Inbound bulk paste at 36½38 ½Brix in 220 L bag-in-drum or 1 000 L IBC, standardized in line to 22½28 ½Brix.
- Finished product filled in tins, glass jars or sachets, with pasteurization and end-of-line packing included.
- CAPEX is turnkey scope: emptying station, mixing, standardization, pasteurizer, filler, closing, CIP, automation, installation, commissioning and training; civil works, land and bulk paste stock excluded.
- EBITDA and payback assume retail or food-service pricing of the packed product and no financing cost inside the operating margin.
- Nigerian project: 415 V / 50 Hz with full generator backup, borehole water treatment, gas / LPG / diesel steam generation,

sachet formats 50½100 g.

- Import duties, SONCAP conformity, inland transport and civil works are excluded from the CAPEX range.

Indicative engineering ranges used by MCF Technology for budget screening of rework projects, not a quotation and not the audited result of a specific plant. Final figures are fixed in the feasibility study, once inbound ½Brix, packaging formats, utilities cost and working hours are confirmed.

INSTALLATION, SITE CONDITIONS AND SCOPE BOUNDARIES

- Scope of supply: process equipment, automation, mechanical and electrical erection, commissioning, FAT/SAT, HACCP validation and operator training.
- Excluded from the ranges: land, civil works, building steelwork, external utility generation and import duties.
- Installation, commissioning and after-sales service are delivered worldwide by MCF crews, with remote diagnostics on the SCADA.
- Nigeria: 415 V / 50 Hz with full generator backup, borehole water treatment, gas / LPG / diesel steam generation, sachet formats 50½100 g, NAFDAC and SONCAP documentation.

TECHNICAL FAQ

Rework or full campaign plant for Nigeria?

A rework and sachet line is the lower-risk entry: it does not depend on harvest volatility, runs 250½300 days a year and costs ½0.6½3.2 million depending on capacity. Evaporation is justified only with contracted inbound tonnage and post-harvest logistics able to feed the reception daily.

How is unreliable grid power handled?

The electrical design assumes generator-based operation with automatic transfer, voltage regulation and staged restart of the thermal section; energy cost per tonne is then calculated on the actual fuel or gas tariff.

What about water quality?

Borehole water is treated (filtration, softening, disinfection) before dilution use; wash and cooling water is recovered in loops and effluent is pre-treated before discharge.

Which certifications are required?

NAFDAC registration for the finished product and SON/SONCAP conformity for imported equipment; machines are CE-marked with EHEDG hygienic design and AISI 304L/316L food-contact surfaces.

What is the indicative CAPEX?

Rework and sachet packing: ½0.6½0.9 million at 500 kg/h, ½2.2½3.2 million at 3 000 kg/h. Full campaign plant: from ½4.5½6.5 million at 30 t/h fresh tomato. Turnkey process scope, civil works and land excluded.

NEXT STEPS

- Full technical page: <https://mcftechnology.group/en/tomato-paste-plant-nigeria>
- Configure the line and request the feasibility study: <https://mcftechnology.group/en/configurator>
- Run the ROI simulator: <https://mcftechnology.group/en/roi-simulator>
- Build the bankable financial plan (3½10 years): <https://mcftechnology.group/en/financial-plan>
- Request a quotation: <https://mcftechnology.group/en/contact>

DISCLAIMER

All figures in this datasheet are indicative engineering ranges used by MCF Technology for budget screening and layout discussion of the reference configuration. They are not a quotation, not a performance guarantee and not the audited result of a specific plant. Final specification, dimensions, utilities and CAPEX are fixed in the feasibility study on your product, packaging formats, utilities cost and site conditions.