

Tomato paste sachet production line ȧȧȧ 50 to 200 g sachets from aseptic bulk

Target application: tomato paste sachet production line

Reference configuration: Packing section downstream of bulk paste, 1,000ȧȧȧ3,000 kg/h finished product

The sachet is the dominant retail format for tomato paste in Africa and the Middle East: low unit price, no returnable glass, minimal cold chain. MCF supplies the complete sachet line downstream of aseptic bulk ȧȧȧ standardization to the target ȧȧȧBrix, pasteurization and multi-lane vertical form-fill-seal ȧȧȧ with the filling accuracy and seal integrity that determine shelf life in hot climates.

SCOPE OF SUPPLY

- Aseptic drum / IBC emptying and buffer storage
- Standardization to 22ȧȧȧ28 ȧȧȧBrix with inline refractometer control
- Recipe dosing (salt, starch, acidity correction) and deaeration
- Tubular pasteurizer 92ȧȧȧ98 ȧȧȧC with validated holding section
- Multi-lane vertical form-fill-seal machines for 50, 70, 100, 200 g sachets
- Laminate handling, date coding, seal-integrity inspection and checkweighing
- Cooling tunnel, carton or shrink secondary packing
- Automatic CIP and SCADA per-batch traceability

TYPICAL OUTPUTS

Sachets 50 / 70 / 100 / 200 g ȧȧȧ Standardized paste 22ȧȧȧ28 ȧȧȧBrix ȧȧȧ Pizza sauce and seasoned paste variants ȧȧȧ
Secondary packing in cartons, trays or shrink film

DIMENSIONS AND BUILDING ENVELOPE

Packing hall footprint	350ȧȧȧ650 mȧȧȧ depending on format mix and number of lanes
Clear height	5ȧȧȧ6 m under beam, 4.5 m minimum over the filler and tunnel
Filling island	90ȧȧȧ160 mȧȧȧ including buffer tank, filler, closing and vacuum control
Thermal treatment	80ȧȧȧ130 mȧȧȧ for pasteurization tunnel or retort area with cooling zone
End of line	120ȧȧȧ220 mȧȧȧ for coding, labelling, case packing, shrink wrapping and palletizing
Packaging material store	200ȧȧȧ450 mȧȧȧ for empty cans, jars, laminate reels, caps and cartons

LAYOUT ȧȧȧ FUNCTIONAL ZONES IN FLOW ORDER

1 ȧȧȧ Product buffer	Pasteurized product buffer tank with level and temperature control
2 ȧȧȧ Container feed	Depalletiser, rinser or air cleaner, format changeover parts
3 ȧȧȧ Filling	Volumetric or mass-flow filling heads sized on the format range
4 ȧȧȧ Closing	Seamer with steam-vacuum control, capper or sealing jaws with seal integrity check
5 ȧȧȧ Thermal treatment	Pasteurization tunnel or retort with validated F-value recipe
6 ȧȧȧ Inspection	Checkweigher, metal detection, seal and fill-level inspection with rejection
7 ȧȧȧ End of line	Coding, labelling, case packing, palletizing and pallet wrapping

UTILITIES AND CONSUMPTION

Installed power	180İÇİ½320 kW for the packing section
Steam	0.8İÇİ½1.8 t/h at 6İÇİ½8 bar for filling temperature and tunnel
Water	5İÇİ½10 mİÇİ½/h process and tunnel cooling water, with recirculation
Compressed air	250İÇİ½450 NmİÇİ½/h at 7 bar, oil-free on product contact points
Format changeover	20İÇİ½45 minutes between formats, 45İÇİ½90 minutes with recipe change and CIP
Manning	4İÇİ½7 operators per shift on the packing section

CAPEX, OUTPUT AND PAYBACK

Sachet line İÇİ½ capacity, CAPEX, payback

Sachet lines are sized in kg/h of finished paste and then in number of lanes. The grid below is the screening range MCF uses before quotation.

500 kg/h finished product	Turnkey CAPEX: İÇİ½0.6 İÇİ½ 0.9 million Annual output: 1 500 İÇİ½ 2 200 t/year packed EBITDA: 12 İÇİ½ 18% of revenue Payback: 3 İÇİ½ 4.5 years Commissioning: 7 İÇİ½ 9 months contract-to-commissioning
1 000 kg/h finished product	Turnkey CAPEX: İÇİ½0.9 İÇİ½ 1.4 million Annual output: 3 000 İÇİ½ 4 400 t/year packed EBITDA: 14 İÇİ½ 19% of revenue Payback: 3 İÇİ½ 4 years Commissioning: 8 İÇİ½ 10 months contract-to-commissioning
2 000 kg/h finished product	Turnkey CAPEX: İÇİ½1.5 İÇİ½ 2.3 million Annual output: 6 000 İÇİ½ 8 800 t/year packed EBITDA: 15 İÇİ½ 20% of revenue Payback: 3 İÇİ½ 4 years Commissioning: 9 İÇİ½ 12 months contract-to-commissioning
3 000 kg/h finished product (reference)	Turnkey CAPEX: İÇİ½2.2 İÇİ½ 3.2 million Annual output: 9 000 İÇİ½ 13 000 t/year packed EBITDA: 16 İÇİ½ 21% of revenue Payback: 2.5 İÇİ½ 4 years Commissioning: 10 İÇİ½ 13 months contract-to-commissioning
5 000 kg/h finished product	Turnkey CAPEX: İÇİ½3.4 İÇİ½ 4.8 million Annual output: 15 000 İÇİ½ 22 000 t/year packed EBITDA: 17 İÇİ½ 23% of revenue Payback: 2.5 İÇİ½ 3.5 years Commissioning: 12 İÇİ½ 15 months contract-to-commissioning

Assumptions behind the figures

- 250İÇİ½300 working days per year, 16İÇİ½20 productive hours per day: the feedstock is stored aseptic concentrate, not seasonal fresh tomato.
- Inbound bulk paste at 36İÇİ½38 İÇİ½Brix in 220 L bag-in-drum or 1 000 L IBC, standardized in line to 22İÇİ½28 İÇİ½Brix.
- Finished product filled in tinplate cans, 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.
- Sachet configuration: multi-lane vertical form-fill-seal, 60İÇİ½120 sachets/min per lane, PET/ALU/PE laminate with 12İÇİ½24 month target shelf life.

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 İÇİ½Brix, 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.

TECHNICAL FAQ

What capacities are available?

From 500 to 5 000 kg/h of finished paste. Each VFFS machine handles roughly 60İ½120 sachets/min per lane, so capacity is reached by adding lanes and machines in parallel.

How is shelf life guaranteed in hot climates?

Validated pasteurization (92İ½98 İ½C with holding time), controlled filling temperature, low residual oxygen through deaeration and 100% seal-integrity inspection. Shelf life is confirmed during commissioning with accelerated storage tests.

Which laminate is used?

Typically PET/ALU/PE or PET/PE multilayer with aluminium barrier for 12İ½24 month shelf life; MCF validates the sealing parameters on the customer's actual laminate before shipment.

Can the same line also fill cans?

Yes İ½ the standardization and pasteurization sections are common; the line can split after pasteurization into a sachet branch and a can-seaming branch. See the tomato paste canning line.

Utilities and layout?

Indicatively 120İ½450 kW depending on capacity, 500İ½3 000 kg/h steam, treated process water for dilution, cooling water and compressed air; 300İ½900 mİ½ process area plus laminate and finished-goods storage.

NEXT STEPS

- Full technical page: <https://mcftechnology.group/en/tomato-paste-sachet-production-line>
- 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 (3İ½10 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.