

Beverage bottling line İÇİ½ aseptic filling machine & filling equipment

Target application: beverage bottling line

Reference configuration: 12,000 bph bottling line for water, soft drinks and juice

MCF Technology designs turnkey beverage bottling lines for water, soft drinks, beer, wine, spirits and fruit juices. Every project bundles the process (syrup room, carbonation, pasteurization) with the packaging line and end-of-line.

SCOPE OF SUPPLY

- Syrup room, sugar dissolution and carbonation skid
- RinserİÇİ½fillerİÇİ½capper monobloc
- Industrial pasteurizer or tunnel pasteurizer
- Labelling (self-adhesive, roll-fed, sleeve)
- Packer, palletizer and stretch-hood wrapper
- SCADA supervision, OEE and traceability

TYPICAL OUTPUTS

Water İÇİ½ Soft drinks İÇİ½ Beer İÇİ½ Wine İÇİ½ Spirits İÇİ½ Juice

TECHNICAL DATA

Speed	3,000İÇİ½48,000 bph (PET) İÇİ½ up to 60,000 cans/h
Container	PET 0.2İÇİ½3 L İÇİ½ Glass İÇİ½ Aluminium can
Filling technology	Isobaric İÇİ½ Gravity İÇİ½ Flowmeter İÇİ½ Aseptic
CO2 pickup	<= 0.02 %
OEE target	>= 90 % on a single-format bottling line

PROCESS FLOW

1. PET preform feed, heating and stretch-blow moulding (or glass depalletising).
2. Rinsing with treated / sterile water.
3. Isobaric, gravity or flowmeter filling depending on product.
4. Capping (screw, crown, aluminium) with torque control.
5. Inline inspection: fill level, cap, label, seal.
6. Labelling, coding, tray or shrink packing.
7. Palletising, stretch wrapping and warehouse handoff.

ENGINEERING HIGHLIGHTS

- Complete beverage bottling line for water, CSD, iced tea, juice and functional drinks İÇİ½ PET, glass or can.
- RinserİÇİ½fillerİÇİ½capper monobloc reduces footprint by 30 % vs. modular food processing equipment.
- Hot-fill or cold-fill; optional aseptic filling machine block for sensitive beverages.
- Servo-driven filling valves and CIP-in-place hygienic design (EHEDG guidelines).
- Integrated blowmoulder, labeller, shrink-wrap and palletiser as a single-vendor bottling line scope.

DIMENSIONS AND BUILDING ENVELOPE

Line footprint	700İÇİ½1,100 mİÇİ½ for a 12,000 bph line including end of line
Line length	45İÇİ½70 m overall, U or S layout depending on the building shape
Clear height	6İÇİ½7 m under beam, 8 m where an airveyor and blow moulder are installed
Syrup room	120İÇİ½200 mİÇİ½ for sugar dissolving, syrup preparation and blending / carbonation
Packaging store	400İÇİ½900 mİÇİ½ for preforms or bottles, closures, labels and cartons

LAYOUT İÇİ½ FUNCTIONAL ZONES IN FLOW ORDER

1 İÇİ½ Container supply	Blow moulder or depalletiser, airveyor and rinser
2 İÇİ½ Product preparation	Water treatment, sugar dissolving, syrup room, blender and carbonator
3 İÇİ½ Filling	Rotary filler / capper monoblock with fill-level and torque control
4 İÇİ½ Thermal treatment	Tunnel pasteurizer or hot filling loop depending on the recipe
5 İÇİ½ Labelling & coding	Wrap-around or sleeve labelling, batch and date coding, inspection
6 İÇİ½ End of line	Shrink wrapper, case packer, palletizer and pallet wrapping
7 İÇİ½ Utilities & CIP	Steam, chilled water, CO2, compressed air 7 and 40 bar, CIP skid

UTILITIES AND CONSUMPTION

Installed power	550İÇİ½900 kW for a 12,000 bph PET line with blow moulder
Steam	1.5İÇİ½3 t/h at 8 bar, tunnel and CIP
Compressed air	1,800İÇİ½2,800 NmİÇİ½/h at 40 bar for blowing, 400 NmİÇİ½/h at 7 bar for controls
Water	18İÇİ½30 mİÇİ½/h treated process water plus rinser and CIP demand
CO2	60İÇİ½140 kg/h for carbonated recipes
Manning	6İÇİ½10 operators per shift across the line

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

Which beverages can be filled on the same line?

Water and soft drinks are commonly filled on the same PET line with a switchable syrup room. Beer and spirits usually require dedicated equipment because of CO2, glass handling and alcohol regulations.

PET, glass or can İÇİ½ which is best?

PET is the lowest-cost per litre for still and lightly carbonated drinks. Glass is preferred for premium and beer. Can is chosen for beer and energy drinks. MCF supplies all three formats.

Is the line hot-fill or aseptic?

Hot-fill (85İÇİ½92 İÇİ½C) for teas, sports drinks and some juices; aseptic (< 30 İÇİ½C) for premium juices, plant-based drinks and

low-acid products. MCF sizes both.

What is the maximum speed?

Up to 36 000 bph on high-speed PET water lines and 60 000 cph on industrial can lines.

Does the plant include end-of-line packaging?

Yes ĩŁ½ shrink wrapper, tray packer, palletizer and stretch-hood wrapper are supplied within the same turnkey scope.

NEXT STEPS

- Full technical page: <https://mcftechnology.group/en/beverage-bottling-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 (3ĩŁ½10 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.