

SOURCING & SELECTION GUIDE

Stainless Steel Vacuum Drinkware

How to specify, source and verify insulated bottles, mugs and tumblers
— written by the factory, for buyers.

Est. 2005

Jinhua, Zhejiang

80,000 m²

Manufacturing campus

1.5 M pcs

Monthly capacity

19 models

In the 2026 range

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01 What This Guide Covers

Ten sections, roughly 20 minutes to read. Each one ends with the decision you should be able to make afterwards.

This guide is written for buyers, product managers and sourcing teams who are specifying stainless steel vacuum drinkware — whether it is your first private-label programme or an addition to an existing housewares line. It is deliberately technical. Specification mistakes in this category are expensive to unwind: they surface as returns, as a coating that fails in the dishwasher, or as a vacuum that stops insulating after three months in the field.

Everything in here comes from our own production experience. Where a number is a range, it is a range because the answer genuinely depends on your market and retailer requirements — not because we are being vague.

#	Section	What you will be able to decide
01	What This Guide Covers	How to use it, and who it is for
02	The Product Landscape	Bottle, mug, tumbler, travel pot — which one for which channel
03	Materials & Construction	304 vs 316, single vs double wall, what changes the price
04	Lid Systems	Six lid types, their use cases and failure modes
05	Capacity & Dimension Planning	The 2026 model range with real dimensions
06	Finishes & Decoration	Powder coat, sublimation, laser, plating
07	Thermal Performance	What the claims mean, and how to test them yourself
08	Compliance by Market	FDA, LFGB, Prop 65, EU food-contact rules
09	Packaging for Retail	Gift boxes, display cartons, barcodes
10	The 14-Point Pre-Shipment Checklist	What to sign off before the container closes

How to get the most out of this

Read sections 03 and 04 before you brief a supplier. Those two decide 70% of your unit cost and almost all of your after-sales risk. Sections 08 and 10 are the ones to share with your compliance and QC teams.

02 The Product Landscape

Five product families cover nearly every retail and promotional scenario. Picking the wrong one is the most common early mistake.

Family	Typical capacity	Best channel	Why it wins
Sports bottle	20–32 oz (590–950 ml)	Outdoor, fitness, promotional	Carry loop or wide mouth, one-hand use, light, low unit cost
Car mug	16–20 oz (470–590 ml)	Automotive, commute, gift	Fits standard cup holders — non-negotiable in the US market
Handle mug	30–40 oz (890–1,180 ml)	Outdoor, home, DTC brands	Large volume, ergonomic handle, the current best-seller shape
Office cup	18–24 oz (530–710 ml)	Corporate gifting, office, café	Desk-stable base, sober finishes, engraving friendly
Travel pot / kettle	Large (1 L+)	Home, travel, family	Separation of cold and hot, sharing portions, press-out spout

The cup-holder rule

If your programme is aimed at the United States, check the base diameter against a standard car cup holder (typically 70–85 mm) before you approve tooling. A handle mug at 40 oz will not fit, and re-tooling after launch is the single most expensive correction in this category.

03 Materials & Construction

Two decisions here drive most of your cost and almost all of your warranty risk.

Steel grade

Grade	What it is	When to specify it
304 (18/8)	Food-grade austenitic stainless steel. Corrosion resistant, no metallic taste, the industry default.	Almost all drinkware. It is our standard across the vacuum range.
316 (18/10)	Adds molybdenum. Noticeably more resistant to chlorides and acidic drinks.	Premium positioning, marine or heavy-coffee markets, or where a competitor's spec sheet is already at 316.
201	Lower nickel. Cheaper. Reduced corrosion resistance.	Typically only where a retailer has mandated it. We will tell you when a spec is 201 and what the trade-off is.

Wall construction

Construction	How it works	Trade-off
Single wall	One steel shell. No vacuum.	Lightest and cheapest. Condensation on the outside; hot contents are hot to hold. Suitable for cold-only promotional items.
Double wall vacuum	Two shells with the air removed between them; no conduction path.	The standard for anything claiming insulation. Adds weight and cost, delivers the thermal performance customers actually judge you on.
Triple wall	Adds a reflective or copper layer inside the vacuum gap.	Best-in-class retention. Worth it when your marketing claim depends on the number — otherwise it is margin you are giving away.

Check the wall thickness, not just the grade

Two suppliers can both state “304 double-wall vacuum” and deliver materially different durability. Outer-wall gauge, weld quality and the tolerance on the vacuum seam are where a lightweight bottle becomes a dent-prone one. Ask for the gauge in mm, and hold the golden sample.

04 Lid Systems

The lid is the most-used and most-complained-about component. Choose it for the failure mode you can tolerate, not just the look.

Lid type	Best for	What to watch
Screw lid	Everyday bottles, travel pots	Simple and reliable. Thread wear after heavy use; check the seal ring is replaceable.
Flip / press lid	One-hand use, car mugs	Convenience is the selling point. Hinge fatigue and gasket perishing are the common warranty claims — specify a replaceable gasket.
Slide-lock lid	Car mugs, commuting	Good seal, easy to open. The slide track collects residue; design for cleaning access.
Straw lid	Kids, cold drinks, large tumblers	Popular and high-margin. The straw and its gasket are the parts that fail first — stock spares if you sell DTC.
Carry-loop lid	Sports, outdoor	Integrates a handle; fewer loose parts. Test the loop under load, not by hand.
Dual / multi-mode lid	Travel pots, family use	Two drinking modes in one cap. Most complex to seal; sample heavily before approval.

Specify replaceable gaskets — it is cheap insurance

Silicone seals age. When they do, a customer does not see a worn gasket, they see “this bottle leaks and it is rubbish”. Choosing a lid whose gasket can be swapped — and selling or supplying spares — converts a warranty claim into a positive service moment. It costs very little at tooling stage.

05 Capacity & Dimension Planning

The FUCHARM 2026 range, with the dimensions you need to plan retail space, packaging and freight.

All models below are 304 stainless steel; most are double-wall vacuum and the FKL cola-shape bottle is single-wall. Capacities are nominal; full dimensions, weights and packing data are confirmed on the golden sample and included in the technical datasheet.

Model	Family	Capacity	MOQ
FYD-600-2B	Sports bottle	20 oz / 600 ml	1,000 pcs
FZD-1000-1	Sports bottle	27 oz / 800 ml	1,000 pcs
FYD-480-3	Sports bottle	16 oz / 480 ml	1,000 pcs
FKL-420-1	Sports bottle	14 oz / 420 ml	1,000 pcs
FQC-1200-1	Car tumbler	40 oz / 1200 ml	1,000 pcs
FCZ-960-1	Car tumbler	32 oz / 880 ml	1,000 pcs
FKF-480-3	Car tumbler	16 oz / 480 ml	1,000 pcs
HT-900-1200	Car tumbler	900/1200 ml	1,000 pcs
FCZ-1200-1	Handle mug	40 oz / 1200 ml	1,000 pcs
FET-900-2	Handle mug	30 oz / 900 ml	1,000 pcs
MJ-1200	Handle mug	40 oz / 1200 ml	1,000 pcs
FZB-650-1	Handle mug	22 oz / 650 ml	1,000 pcs
FZB-600-1	Handle mug	20 oz / 600 ml	1,000 pcs
FJB-180-1	Office & everyday	6 oz / 180 ml	1,000 pcs
FJB-120-1	Office & everyday	4 oz / 120 ml	1,000 pcs
FZD-350-1	Office & everyday	12 oz / 350 ml	1,000 pcs
FZD-500-1	Office & everyday	17 oz / 500 ml	1,000 pcs
FSH-1200-1	Travel pot	40 oz / 1200 ml	1,000 pcs
FSH-2500-1	Vacuum kettle	84 oz / 2500 ml	1,000 pcs

All models run on existing platform moulds — there is no tooling fee or tooling lead time on catalogue orders. Request the technical datasheet for the models you are shortlisting and we will send dimensions, packing and compliance data.

19	Models in the 2026 range
1,000 pcs	Standard MOQ per SKU
~7 days	Sample lead time
0	Tooling fee on ODM models

06 Finishes & Decoration

The finish is what the customer sees first and what determines how the bottle looks after a year of use.

Finish	How it is applied	Durability	Best for
Powder coating	Electrostatic spray, oven cured	Highest — resists chipping and fading	Daily-use bottles, matte or gloss, any Pantone colour
Robot spray painting	Multi-layer liquid paint on robotic lines	High; soft-touch options available	Gradient and two-tone looks for premium retail
Electroplating	Chrome, gold or PVD vacuum plating	High, if salt-spray tested	Gift and premium programmes; high-shine finishes
Laser engraving	Laser through coating to bare steel	Permanent — does not wear	Corporate and promotional logos, permanent marking
Sublimation / heat transfer	Full-colour artwork transferred to the body	Good; the print layer is the sensitive part	Photorealistic prints, licensed artwork, seasonal editions
Water transfer	Hydro-dip pattern wrapped over the body	Moderate	Wood grain, marble, camouflage — decorative lines

Match the finish to the wash instruction

A powder coat and a sublimation print do not survive a commercial dishwasher equally well. If your retail listing says “dishwasher safe”, the finish choice is not a design decision any more — it is a warranty decision. Tell your supplier the wash claim you intend to print, before the finish is locked.

07 Thermal Performance

“Keeps cold 24 hours” means nothing until you know the starting temperature, the fill level, the ambient temperature and the number of times the lid was opened.

What a credible claim looks like

A test result is only comparable if the conditions travel with it. When you assess a supplier's thermal data — or run your own — record all five of these:

- **Starting temperature** — for cold retention, near 0–4 °C; for hot, above 95 °C.
- **Fill level** — a vessel tested two-thirds full will outperform the same vessel filled to the brim.
- **Ambient temperature** — a 22 °C room and a 35 °C warehouse give different answers.
- **Duration and checkpoint** — retention at 6 h, 12 h and 24 h, not a single end figure.
- **Lid state** — sealed throughout, versus opened periodically, as a real user would.

Run the 30-minute test in your own office

You do not need a laboratory to catch an underperforming sample. Fill the sample and a benchmark product identically with hot water, seal both, and log the temperature at 30, 60 and 120 minutes with an inexpensive probe thermometer. A material gap in retention appears within the first hour. Anything that looks close after two hours will be indistinguishable in the field.

1 h	First checkpoint
6 h	Working-day checkpoint
12 h	Overnight checkpoint
24 h	Retail-claim checkpoint

FUCHARM measures and records thermal retention per batch, and the results are available to your compliance team on request as part of the technical datasheet pack. Where a specific market makes a numeric claim on the packaging, we test to that claim rather than to a generic figure.

08 Compliance by Market

Food-contact law is not harmonised. The same bottle needs different paperwork depending on where it lands.

Market	Framework	What is normally required
United States	FDA 21 CFR, food-contact	Food-contact compliance for stainless steel and plastic components. State-level rules may add requirements.
United States — California	Prop 65	Warning or reformulation obligations where listed substances may be present in coatings, plastics or print.
European Union	EU 1935/2004, EU 10/2011	Framework regulation plus material-specific migration testing for plastics; declaration of compliance.
Germany	LFGB	Widely requested by European retailers as evidence beyond the EU minimum.
Global / multi-market	ASTM	Test methods often cited in retailer specification sheets.
Social & ethical	amfori BSCI, Sedex	Social accountability audit, increasingly required before vendor onboarding.
Quality & environment	ISO 9001, 14001, 45001	Management system certificates; commonly part of supplier assessment.
Brand-owner specific	FAMA, brand audits	Merchandise authorisation and factory audits set by the brand itself.

Ask for the report that matches your model and your market

A compliance certificate is not a blanket approval. Food-contact testing is done against a specific material, a specific component and a specific market framework. When a supplier sends you “FDA certified”, ask which model, which components, and which test standard. A serious factory has the answer without delay.

FUCHARM holds amfori BSCI / Sedex social accountability audit status, ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 management system certification, FAMA factory and merchandise authorisations and NBCUniversal factory audit certification. Food-contact testing to FDA, LFGB and ASTM is available per model and per market.

09 Packaging for Retail

Packaging is where a good bottle becomes a good product. It is also where a late change costs the most, because it runs on its own lead time.

Element	Standard	Upgrade options
Unit protection	Individual polybag or EPE sleeve	Printed sleeve, fabric pouch, gift-boxed unit
Multi-pack	Plain carton with divider inserts	Die-cut inserts, divider grids, colour-printed inner carton
Outer carton	Five-layer export-grade corrugated, taped and strapped	Printed carton markings to your SKU and barcode standard
Retail box	Not included by default	Full-colour gift box, windowed box, book-style magnetic closure
Point of sale	Not included by default	Display cartons, counter units, shelf-ready tray
Documentation	Care and use insert	Multi-language instruction inserts, hangtags, compliance leaflets

Decide the retail box before the tooling, not after

Printing and box tooling run on their own schedule and their own approval cycle. Programmes that lock the bottle design first and the packaging last almost always slip their launch date. Bring the artwork brief to the first meeting.

Container loading — planning figures

Capacity	Carton packing	1 × 20'GP	1 × 40'HQ
350 ml sports bottle	24 pcs / carton	≈ 16,000–18,000 pcs	≈ 40,000–44,000 pcs
500 ml vacuum bottle	24 pcs / carton	≈ 13,000–15,000 pcs	≈ 32,000–36,000 pcs
600 ml tumbler / car mug	20 pcs / carton	≈ 11,000–13,000 pcs	≈ 27,000–30,000 pcs
750 ml handle mug	16 pcs / carton	≈ 9,000–10,500 pcs	≈ 21,000–24,000 pcs

Planning estimates only. Actual loading depends on carton dimensions, retail packaging thickness and whether inner or display cartons are used. A confirmed loading plan is issued before booking.

10 The 14-Point Pre-Shipment Checklist

Sign these off against the golden sample and the pre-shipment inspection report before the container is loaded. This is the same list our own QC team works to.

#	Checkpoint	What to verify
1	Unit weight and dimensions	Within agreed tolerance against the golden sample
2	Capacity, brim-full and nominal	Verified by measurement, not by the spec sheet
3	Wall gauge where specified	Including outer-wall gauge, if it was contracted
4	Vacuum retention	Thermal test data recorded against the batch
5	Weld and seam integrity	Visual and pressure check; no weeping at the seam
6	Coating adhesion	Cross-hatch or tape test; no lifting at the edges
7	Colour match	Against Pantone or the approved physical standard, under daylight
8	Logo position and size	Measured, not eyeballed; check two units, not one
9	Lid function	Open and close 30 times; check the seal seats every time
10	Gasket material and fit	Correct silicone compound; replaceable if specified
11	Leak test	Filled, inverted and shaken — product as the customer will use it
12	Carton markings	SKU, barcode, carton number, country of origin
13	Packing and quantity	Count per carton against the packing list
14	Documentation pack	Invoice, packing list, test reports, certificates of origin

Third-party inspection is welcome at any stage

You are not required to take our word for any of the above. SGS, BV, TUV and Intertek inspectors are welcomed on site — at the pilot run, during mass production, or at pre-shipment. Our inspection records and retained samples are available to your inspector.

11 Working With FUCHARM

What we are, what we make, and how a programme runs from first enquiry to loaded container.

Zhejiang Fucharm Houseware Industry Co., Ltd. is an integrated manufacturer of stainless steel vacuum insulated vessels. Our brand began in 2005; the company was formally registered in 2011 and is headquartered in Jinhua, Zhejiang — China's houseware industry cluster. Design, research and development, manufacturing, marketing, service and brand operation all sit inside one company, which is what keeps cost, quality and your delivery date under our own control.

80,000 m²

1.5 M / month

15 M / year

500+

Manufacturing campus

Vacuum bottle capacity

Annual production capacity

Staff and technicians

Programme timeline

Stage	Typical duration	What happens
Brief & feedback	48 hours	Send drawings, photos or a sample. Engineers review manufacturability and quote.
3D render & confirm	3–5 days	Renderings with your Pantone colours, finish and logo placement for sign-off.
Sample	~ 7 days	Physical golden sample — logo, finish, lid and packaging concept, by express.
Tooling & pilot	15–25 days*	New moulds developed in-house; pilot run validates tolerances.
Mass production	25–35 days	Full run with inline QC reports, final inspection and export documentation.

*Tooling applies to fully custom OEM moulds only. Catalog ODM models from the 2026 FQC, FCZ and FKF tumbler platforms skip this step entirely, saving two to four weeks.

Send us your specification and we will return the gaps

If you already have a spec sheet, send it. We will tell you what is missing, what is ambiguous, and where a decision is still open — before a quotation, not after. Contact chr@fucharm.com or +86 579 8262 0918.

Ready to specify your programme?

Send us your drawing, a reference product or just a market brief. You will have engineering feedback within 48 hours and a quotation within 24 hours of that.

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Factory tours	On-site visits and live video walkthroughs available — book through the website

Further documents available on request

- Master specification sheet — all 19 models, Excel and PDF
- Thermal performance test report with retention curves
- Food-contact compliance pack — FDA, LFGB and ASTM reports
- Customization capability matrix — finishes, lids, packaging and MOQ per option
- Certificates: ISO 9001, ISO 14001, ISO 45001, FAMA authorisations
- amfori BSCI audit report summary (full report under NDA)

This guide is issued for general sourcing guidance. Product specifications, lead times, MOQs and compliance documentation are confirmed per order on the proforma invoice and technical datasheet, which take precedence over the indicative figures published here.

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