2026 Engineering, Container Loading & *Procurement Specification Guide*

Technical reference for global spirits distilleries, wineries, fragrance maisons, and specialty beverage brands sourcing Extra Flint, Super Flint, Antique Green, Smoked Flint, and Cobalt Blue glass packaging directly from Yuncheng, Shandong.

150+	3,000+	48 Hours	15 Days	≤ 1.5%
EXPORT COUNTRIES	MOLDS IN ARCHIVE	3D SLA PROTOTYPE	CNC TRIAL MOLD	WRITTEN BREAKAGE CAP

01 Standard Bottle Capacity & mL–fl oz Reference

US Liquid Ounce Conversion (1 fl oz = 29.5735 mL)

NOMINAL VOLUME	US FL OZ	PRIMARY MARKET STANDARD	TYPICAL GLASS WEIGHT	COMMON APPLICATIONS
50 ml	1.7 fl oz	Global Miniature / Travel Retail	95 – 145 g	Airline minis, tasting flights, parfum travel sprays
100 ml	3.4 fl oz	EU / US Haute Parfumerie	210 – 310 g	Niche Eau de Parfum, extrait flacons (FEA 15)
200 ml	6.8 fl oz	Gift & Home Fragrance Format	280 – 380 g	Reed diffusers, collector spirits minis, cold-brew
375 ml	12.7 fl oz	Half-Bottle (US / EU)	420 – 540 g	Ice wine, Sauternes, craft eau-de-vie, dessert wine
500 ml	16.9 fl oz	EU Craft & Apothecary Standard	480 – 660 g	Botanical gin, bitters, olive oil, zero-proof spirits
700 ml	23.7 fl oz	EU / UK / APAC Spirits Standard	650 – 850 g	Single malt, vodka, gin, rum, cognac, decorated SKUs
750 ml	25.4 fl oz	US / Americas Spirits & Global Wine	550 – 960 g	Bourbon, tequila, Champagne/Rosé, Bordeaux reserve
1,000 ml	33.8 fl oz	Global Duty-Free / Back-Bar	720 – 980 g	Travel retail spirits, hospitality table water
1,750 ml	59.2 fl oz	US Magnum / Handle Spirits	1,050 – 1,380 g	Large-format whisky, reserve spirits, showcase editions

02 20GP & 40HQ Export Palletization & Carton Loading Guide

ISPM-15 Heat-Treated Pallets · ECT-32 Corrugated Dividers

BOTTLE FORMAT	PACKING CONFIGURATION	20GP CAPACITY (INDICATIVE)	40HQ CAPACITY (INDICATIVE)	PALLET SPEC & NOTES
700 / 750 ml Spirits Standard Column (~700g)	Bulk Export Pallet Layer pads + shrink wrap	**10,500 – 12,800 pcs** 10 pallets (1.0×1.2m)	**22,000 – 26,500 pcs** 20–21 pallets (max 24t)	Lowest landed freight cost per bottle; auto-depalletizer ready
700 / 750 ml Decanter Heavy Base (800–920g)	ECT-32 6-Pack / 12-Pack 5-ply carton + partitions	**8,200 – 9,800 pcs** ~800 cartons	**18,000 – 21,500 pcs** ~1,750 cartons	Recommended for sprayed, frosted, or electroplated finishes
750 ml Wine / Sparkling Bordeaux / Cuvée (580–760g)	Bulk Pallet (ISPM-15) 1.0×1.2m or Euro 0.8×1.2m	**12,000 – 14,500 pcs** 10–11 pallets	**24,500 – 29,000 pcs** 20–22 pallets	Gross weight governed (~24–26 MT payload cap on 40HQ)
500 ml Spirits / Beverage Craft Gin / Oil (480–580g)	Bulk Pallet or 12-Pack ECT-32 dividers	**15,000 – 18,500 pcs**	**32,000 – 38,000 pcs**	Custom printed retail master cartons available from 5,000 pcs
100 – 200 ml Fragrance Heavy-Base Flacon (260g)	Egg-Crate Partition Box Anti-scuff poly-bag option	**28,000 – 40,000 pcs**	**62,000 – 85,000 pcs**	Individually partitioned for zero surface abrasion in transit

> **Engineering Note on Container Optimization:** Exact container loadability depends on bottle diameter, height, and gross road-weight limits at destination port (e.g., 19.9 MT US tri-axle limit vs. 24–26 MT EU/LATAM ports). Request a free SKU-specific 3D pallet-load simulation with your RFQ.

03 International Neck Finish & Closure Engineering Tolerances

GPI / CETIE / FEA Compliant Tooling

NECK STANDARD	CRITICAL DIMENSIONS & TOLERANCE	MATCHED CLOSURE SYSTEMS	PRIMARY APPLICATIONS
Bar-Top Cork 18.5 / 19.5 / 21.5 mm	Bore ID: 18.5 ± 0.4 mm / 19.5 ± 0.4 mm Cork Shank Fit: Bore + 0.9 to 1.1 mm	Natural Oak / Walnut Wood T-Top, Brushed Aluminum / Brass T-Top, Crystal Glass Stopper, Synthetic Polymer Shank	Single malt whisky, XO cognac, botanical gin, tequila, premium rum decanters
GPI Continuous Thread 28-400 / 28-410 / 24-410	T-Dim: 27.28 ± 0.36 mm (GPI 28) E-Dim: 25.04 ± 0.36 mm · 1.0–1.5 Turns	Tamper-Evident Screw Caps, Wood-Top Screw Closures, Oil Pourer Inserts, Fine-Mist Sprayers	Craft spirits, cold-brew, artisanal olive oil, gourmet syrups, reed diffusers
ROPP / BVS Roll-On 28×18 / 30×60 mm	Rim OD: 29.75 ± 0.25 mm (30×60) Top-Load Sealing Pressure: ≥ 180 kgf	Pilfer-Proof Aluminum Roll-On Cap, BVS Stelvin Wine Screw Cap, Non-Refillable Pourer Fitment	High-speed automated wine bottling, mineral water, botanical tonics, spirits
CETIE / Champagne 29 mm Crown / Cork	Bore ID: 18.5 ± 0.5 mm (CETIE) Crown Rim OD: 29.30 ± 0.30 mm	Natural Flor Wine Cork, Champagne Cork + Wire Muselet Cage, 29 mm Crown Cap, Tin/PVC Capsule	Traditional-method Champagne, Prosecco, Crémant, Provence Rosé, Bordeaux reserve
FEA 15 Perfumery Cosmetic Crimp Pump	Outer Rim OD: 15.00 ± 0.20 mm Neck Height: 6.20 ± 0.25 mm	FEA 15 Crimp Mist Atomizer + Magnetic Zamac Overcap, Brushed Aluminum Collar, Surlyn Cap	Niche Eau de Parfum, Extrait de Parfum, luxury cologne & bespoke beauty flacons
Lug / Wide-Mouth 48 – 70 mm Twist-Off	4-Lug / 6-Lug Deep Twist Profile Vacuum Button Seal Flatness ≤ 0.15 mm	Plastisol-Lined Metal Lug Cap, Natural Bamboo/Wood Silicone-Ring Lid, Cork Stopper	Artisanal honey, truffle condiments, botanical apothecary vessels, luxury candles

Extra Flint & Super Flint

Ultra-low iron cosmetic-grade crystal glass (≥91% optical transmittance) for high-clarity spirits, rosé wines, and luxury perfumery.

Antique Green & Amber UV

Furnace-tinted UV-filtering glass protecting tannic wines, botanical oils, and light-sensitive elixirs; compatible with PCR cullet blends.

Smoked Flint & Cobalt Blue

Architectural furnace-colored and bespoke kiln-cured ceramic, acid-frosted, ombré, and vacuum-metallized decorative finishes.

04 6-Stage ASTM & ISO 2859-1 Quality Metrology Protocol

In-House Yuncheng QA Laboratory · Batch Inspection Certificates

TEST STANDARD	INSPECTION DISCIPLINE	ACCEPTANCE CRITERION / SPEC	OPERATIONAL RISK PREVENTED
ASTM C147	Internal Hydrostatic Pressure	Non-carb ≥ 0.6 MPa · Sparkling ≥ 1.6 MPa	Prevents bursting on carbonated & traditional-method bottling lines
ASTM C148	Polariscopic Annealing Stress	Real Temper Number ≤ Grade 3 across punt & wall	Eliminates residual internal tension causing spontaneous transit cracks
ASTM C149	Thermal Shock Resistance	ΔT ≥ 42°C hot-to-cold water bath pass	Safeguards hot-fill sauces, sterilization rinses, and ice-bucket chilling
ASTM D3359	Decoration Adhesion & Rub	4B–5B Cross-Hatch + 72h Ice-Bucket & 95% Ethanol Rub	Guarantees zero peeling of Pantone coatings, frost, decals, or hot foil
INLINE OPTICS	Cold-End Vision & Gauge Scan	100% check: bore ID, verticality (≤ 1.5 mm), wall min, stones/blisters	Prevents jam stops on 12,000+ BPH high-speed automated filling lines
ISO 2859-1	Pre-Shipment AQL Audit	**Critical: 0.0 · Major: 1.0 · Minor: 2.5**	Lot-level statistical sign-off with digital COA & caliper report per shipment

05 Verified International Compliance & Audit Registry

Traceable Factory Documentation Available Upon RFQ

CERTIFICATION / FILING	VERIFIED REGISTRY / REPORT ID	SCOPE & STANDARD	IMPORTER BENEFIT
ISO 9001	QMS CERTIFIED	Quality Management System across IS forming, mold shop & decoration	Repeatable dimensional tolerances & documented batch traceability
ISO 14001	EMS CERTIFIED	Environmental Management System for glass melting & coating lines	Supports corporate ESG vendor onboarding & PCR cullet reporting
German LUCID (VerpackG)	DE5875303602334	Zentrale Stelle Verpackungsregister (German Packaging Act EPR)	Verified legal packaging compliance for German & EU retail distribution
2022 SGS EU Food Contact	QDHL2202001293CW	EU Framework Reg. (EC) 1935/2004 · Lead & Cadmium Migration	Lab-verified zero heavy-metal leaching for EU spirits, wine & gourmet lines
SGS FDA Compliance	US FDA 21 CFR	US Food-Contact Glass & Leachable Heavy-Metal Safety Verification	Smooth US customs & TTB/FDA compliance clearance for North American brands
FJT MSDS Report	A001R1912160301	Material Safety Data Sheet for soda-lime glass packaging & coatings	Hassle-free international sea freight & express air sample clearance

06 3-Tier OEM/ODM Procurement & Mold Development Timeline

From Ready Stock to Exclusive NDA Private Tooling

TIER 01 · EXPRESS STOCK

Ready Stock Archive

MOQ: **2,000–3,000** Lead: **3–5 Days**

- Instant access to 3,000+ proprietary molds across spirits, wine, fragrance & beverage
- Zero tooling cost; ideal for pilot runs, seasonal SKUs & rapid restocking
- Matched stock bar-top corks, GPI/ROPP caps & export cartons

TIER 02 · BRAND ELEVATION

Semi-Custom & Atelier Decor

MOQ: **5,000–6,000** Lead: **15–25 Days**

- Pantone matte/gloss spray, acid etching, vertical ombré & hydro-transfer
- Kiln-fired ceramic silk screen, mirror foil stamping & vacuum metallization
- Optional bottom-plate or shoulder crest mold insert modification

TIER 03 · BESPOKE FLAGSHIP

Private NDA Custom Mold

MOQ: **6,000–15,000** Lead: **25–35 Days**

- **48-Hour 3D SLA Resin Prototype** for hand-feel & label-fit sign-off
- **15-Day 5-Axis CNC Trial Mold** & physical glass sample firing
- **100% Volume Mold-Fee Rebate** program + signed Mutual NDA exclusivity

07 Commercial Assurance & Global Export Footprint

Direct-from-Factory Pricing · FOB Qingdao / CIF / DDP

Written ≤ 1.5% Marine Breakage Coverage

Every export container ships on ISPM-15 fumigation-free pallets with double shrink-wrap, corner-board armor, and optional ECT-32 divider cartons. Any transit breakage verified above 1.5% is covered in writing via replacement or credit note.

Multi-Plant Shandong Base & Americas Liaison

Anchored by our Yuncheng, Shandong manufacturing hub (IS forming, CNC mold workshop, in-house decoration & QA lab) and Jinan international trade headquarters, backed by our Panama liaison desk serving 150+ countries worldwide.

Request Full 3,000+ Mold Catalog or *Free Engineering Samples*

Send your target volume, closure preference, and decoration brief to receive CAD drawings, 40HQ freight quotes, and physical samples within 24 business hours.

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