

14500 Cylindrical Battery Case With Safety Cap And Gasket For Cell Assembly And Research

Item Number: FZ11



Introduction

Engineered for precision lithium cell manufacturing, this 14500 cylindrical battery case features premium Japanese SPCC steel, advanced nickel plating, integrated safety vent cap, and virgin PP gasket to ensure hermetic sealing, low internal resistance, and superior cycle reliability.

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Application	Description	Key Benefit
Lithium-Ion Battery R&D	Precision prototyping of custom active cathode/anode formulations in academic and industrial laboratories.	Standardized 14500 form factor ensures reproducible test metrics and reliable cycle-life comparisons.
High-Drain Portable Electronics	Fabrication of compact 14500 cylindrical cells for high-performance flashlights, handheld devices, and telemetry tools.	Low internal resistance minimizes ohmic heating under elevated discharge rates.
Medical Device Power Systems	Encapsulation of reliable power sources for wireless diagnostic tools, portable monitors, and surgical equipment.	Strict dimensional accuracy and defect-free hermetic sealing maximize field safety and shelf life.
Smart Metering & IoT Sensors	Manufacturing of long-life primary and secondary cells designed for remote environmental sensing and industrial telemetry.	Superior salt-spray corrosion resistance guarantees multi-year outdoor durability without casing degradation.
Custom Multi-Cell Battery Packs	Automated module assembly where high-yield ultrasonic or spot welding is required to connect series-parallel strings.	Reliable spot-welding tensile strength (≥ 5 kg) prevents weld disconnection under severe vibration.
Sodium-Ion & Alternative Chemistries	Experimental containment of novel organic liquid electrolytes and solid-electrolyte interphase (SEI) stabilization studies.	Chemically stable nickel-plated surface prevents catalytic metal dissolution and electrolyte contamination.

Specification Parameter	Technical Standard & Performance Value (FZ11)
Product Item Number	FZ11
Compatible Cell Form Factor	14500 Cylindrical (14 mm diameter class)
Can Substrate Material	Japanese SPCC Cold-Rolled Steel
Can Wall Thickness	0.30 mm
Top Cap Construction	Upper Cap: SPCC Steel (Double-Bright Finish) / Lower Disc: Pure Aluminum
Can Nickel Plating Thickness	$\geq 2.5 \mu\text{m}$
Top Cap Nickel Plating Thickness	4.0 - 6.0 μm
Sealing Gasket Material	100% Virgin Polypropylene (PP, additive-free, zero recycled resin)
Gasket Color	White
Internal Resistance (Cap Assembly)	$\leq 0.6 \text{ m}\Omega$
Anti-Explosion Venting Pressure	$2.7 \pm 0.3 \text{ MPa}$
Spot Welding Performance	Zero sparking, zero pseudo/cold welding, Joint Tensile Strength $\geq 5.0 \text{ kg}$
Post-Grooving & Crimping Integrity	No nickel peeling, flaking, or micro-cracking along grooved bead or crimp perimeter

Specification Parameter	Technical Standard & Performance Value (FZ11)
Salt Spray Corrosion Resistance	Reference Electroplated Steel Salt Spray Standard (Rust spots $\leq$ 1, individual rust area $\leq$ 1.0 mm ²)
Surface Quality	Burr-free can orifice, smooth interior/exterior walls, flat bottom, zero drawing marks/pits
Environmental Compliance	RoHS / POSH compliant