



KP-Series Economy Salt Spray Test Chamber
Professional Corrosion Simulation System for NSS, AASS, and CASS Testing

1. Executive Summary

The **KP-Series Economy Salt Spray Test Chamber** is a high-precision corrosion testing instrument engineered to provide a controlled artificial marine environment. Designed for laboratories that require rigorous adherence to international standards—such as **ASTM B117** and **ISO 9227**—this system offers an optimized balance of industrial-grade durability and cost-effective operation. It is the definitive solution for evaluating the protective integrity of coatings, electroplating, and metallic surface treatments.

2. Advanced Engineering & Material Science

The structural and functional integrity of the chamber is built upon high-performance materials and specialized heating technologies:

- **PP Hard Plastic Construction:** The entire chamber is fabricated from **8mm imported Polypropylene (PP)**, a material selected for its superior resistance to acids, alkalis, and sustained high-temperature exposure without the risk of corrosion or deformation.

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- **Thermal Radiation Heating:** Unlike conventional contact heating, this system utilizes thermal radiation to ensure a rapid response time and exceptional temperature uniformity of $\pm 1^{\circ}\text{C}$ throughout the internal environment.
- **Precision Atomization Technology:** The core spray mechanism features a precision-ground glass nozzle paired with a conical dispersion tower. This design facilitates a standardized sedimentation rate of **1.0 – 2.0 ml / 80cm² / hour**, effectively eliminating "dead zones" within the test area.
- **Integrated Saturated Barrel:** To maintain consistent humidity levels, the saturated drum operates at specific temperatures (**47°C for NSS; 63°C for CASS**) to ensure the salt fog remains stable and non-clogging.

3. Comprehensive Technical Specifications

Environmental Control Matrix

Parameter	Technical Specification	Operational Benefit
Test Methodologies	NSS (Neutral), AASS (Acidic), CASS (Copper-Accelerated)	Versatility across all major industrial corrosion protocols.
Chamber Temperature	35°C $\pm 1^{\circ}\text{C}$ (NSS/AASS) / 50°C $\pm 1^{\circ}\text{C}$ (CASS)	Maintains strict thermal stability for repeatable results.
Saturated Drum Temp	47°C $\pm 1^{\circ}\text{C}$ (NSS) / 63°C $\pm 1^{\circ}\text{C}$ (CASS)	Pre-heats and humidifies compressed air to prevent nozzle clogging.
Brine Solution Temp	35°C $\pm 1^{\circ}\text{C}$ / 50°C $\pm 1^{\circ}\text{C}$	Ensures chemical reactivity remains consistent with standard requirements.
Atomization Rate	1.0 – 2.0 ml / 80cm ² / hour	Guaranteed compliance with ASTM B117 sedimentation criteria.

System Hardware & Automation

- **Control Interface:** Features a **7-inch LCD Touchscreen** with a bilingual (English/Chinese) interface, supporting programmable test cycles and USB data export for digital record-keeping.
- **Fluid Management:** A fully automatic dual-level water replenishment system supports long-duration testing (500+ hours) without manual intervention.
- **Power Efficiency:** Configured for **AC 220V, Single-Phase** power, allowing for seamless integration into standard laboratory electrical grids.

4. Standards Compliance & Regulatory Assurance

The KP-Series is manufactured in strict accordance with the following international metrological

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standards:

- **ASTM B117:** The global benchmark for operating salt spray (fog) apparatus.
- **ISO 9227:** International standard for corrosion tests in artificial atmospheres.
- **IEC 60529:** Evaluation of salt mist ingress protection levels for electrical enclosures.
- **GB/T 10125:** The national equivalent standard for localized compliance requirements.

5. Industrial Applications & Strategic Value

- **Automotive Quality Assurance:** Evaluating the endurance of body panels, fasteners, and exhaust systems against road salt and moisture.
- **Surface Engineering:** Verification of anti-rust oils, anodizing films, and complex electroplating layers (Zinc, Nickel, Chrome).
- **Electronics & Hardware:** Testing the resilience of outdoor connectors and industrial enclosures against saline environments.
- **Third-Party Certification:** Providing traceable data for lab audits and market approval (CE/ISO).

6. Global Support & Safety Protocols

- **Safety Interlocks:** Includes over-temperature protection, water shortage alarms, electrical leakage safeguards, and short-circuit protection for unattended 24/7 operation.
- **Traceable Calibration:** Every unit undergoes rigorous factory calibration in KingPo's Dongguan facility and is delivered with a traceable calibration report.
- **Warranty & Service:** Backed by a one-year comprehensive warranty and lifetime technical engineering support.

Metrological Maintenance Tip: To ensure long-term accuracy, KingPo recommends a monthly verification of the salt solution pH (6.5–7.2 for NSS) and a weekly check of the fog collection volume to maintain audit-ready status.