Hitachi Nano Accessories Product Group

Hitachi High-Tech

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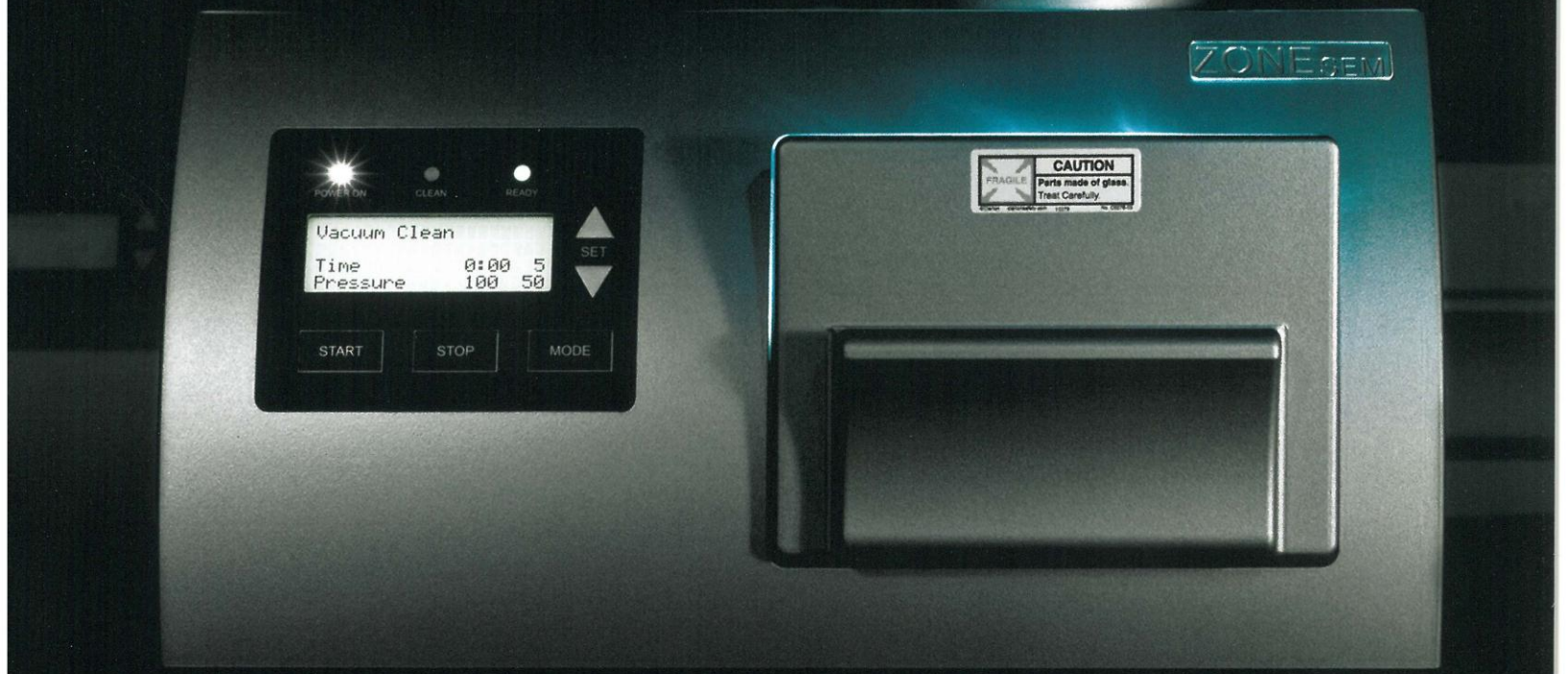
Desktop Sample Cleaner and Desiccator



HITACHI

The Next Generation for Pre-Analysis Sample Cleaning

Offering an easy-to-use cleaner that ensu

See the true surface of your specimens after removing the surface hydrocarbons with the ZONE surface cleaning system!

Sample surfaces are inevitably coated with hydrocarbon contamination due to sample preparation or from storage. The ZONE cleaning system gently removes contaminations to reveal the true surface of your specimens.

MAIN FEATURES AND USE

*Zone***SEM**

- Sample holder stage designed for Hitachi Type I & Type II carriers
- Adjustable height and optional holders available
- Effective cleaning of surfaces up to 70mm in diameter

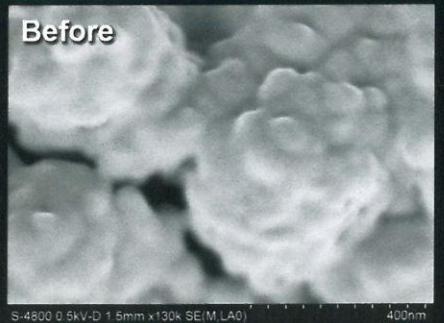
*Zone***TEM**

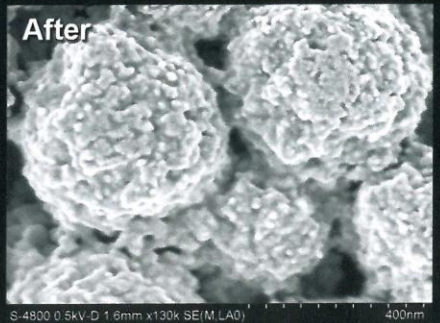
- Optimized cleaning of TEM grid specimens
- Simultaneously clean and store up to three TEM holders
- Optimized for Hitachi specimen holders for TEM, STEM, FIB, and in-lens SEM systems
- Serves as an excellent desiccator to prevent holder out-gassing

Common Features

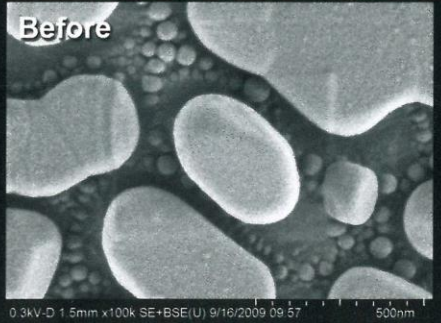
- Utilizes a non-destructive cleaning technology
- Optimized to quickly remove surface hydrocarbons from samples under vacuum with adjustable operating pressure
- Vacuum storage of cleaned samples
- Dry oil-free diaphragm pumps for safe contamination free storage
- Optional holders for other EM manufacturers available

APPLICATION GALLERY





SEM Sample: *Mesoporous Titanium Oxide*



SEM Sample: *PVD Tin-Gold particles*

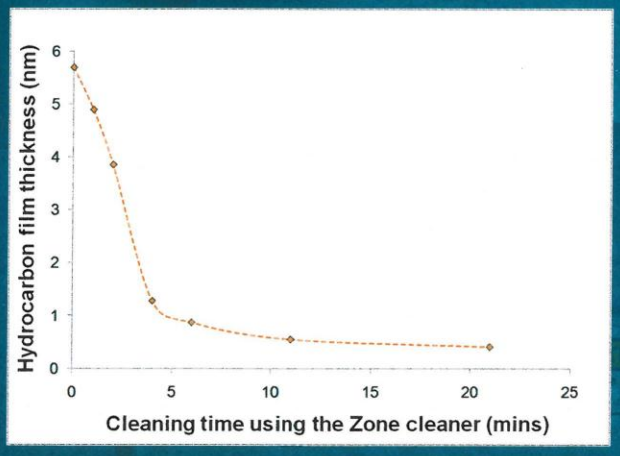
es the best possible data from your samples

Designed for high throughput and flexible setups

- Simultaneously clean single or multiple samples
- User friendly computerized interface
- Easy access for sample insertion and removal
- Typical cleaning time is 5 to 15 minutes

CLEANING PROCESS

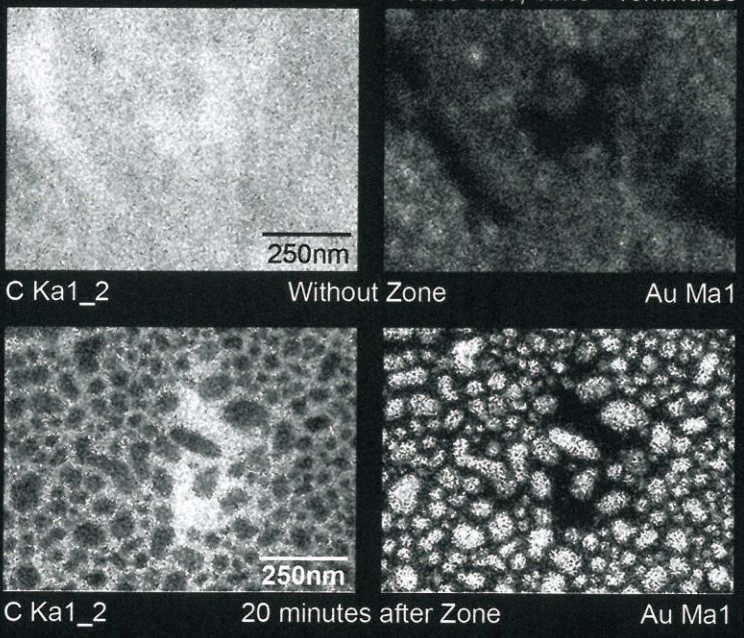
The ZONE cleaning system uses a customized UV source to effectively remove hydrocarbons. The UV source directly attacks and breaks up hydrocarbon bonds. At the same time oxygen ions react strongly with the broken hydrocarbon bonds to create species such as H_2O, CO and CO_2 which are easily pumped away by the vacuum system.



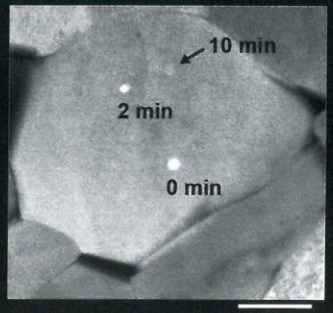
XPS measurements of hydrocarbon removal rate on the surface of a-napthyl-phenyl-diamine (α-NPD) film for OLED device application.

Specimen and XPS characterization courtesy of Prof. Lu, Materials Eng. University of Toronto

Vacc=5kV, Time ~10minutes



The gold on carbon sample shown here demonstrates the difference in EDX mapping quality when the sample is free from residual hydrocarbon left on the surface, resulting in improved analytical performance.



Electron beam induced deposition (EBID) is the deposition of hydrocarbon from electron beam that leads to sample contamination. For example, an electron beam (spot mode) is placed onto the sample surface for 1 minute. This created a white spot (0 min) which is the result of hydrocarbon contamination. After successive cleaning using the Zone cleaner (2 and 10 minutes), the size of the contamination mark reduced noticeably, indicating a significant decrease of hydrocarbon in the sample surrounding.

TEM Sample: *Lithium battery materials*

Specifications

Item	Description
Cleaning System	Microprocessor Controlled
Cleaning Modes	Vacuum Clean Vacuum Clean/ Storage
Cleaning Times	0 to 30 minutes, in 1 minute steps
Vacuum System	Dry Pumping System
Vacuum Level	Ultimate Vacuum within 120 seconds
Vacuum Setting	Scalable from 1 to 100, in steps of 1

Installation Requirements

Item	Description
Room Temp.	15 to 30° C
Humidity	70%RH or less
Input Power	Single Phase AC100 to 240V (Minimum: AC 90V, Maximum: 250V)
Input Frequency	50/ 60 Hz (± 3 Hz)
Current Draw	0.6 Amps (Max)

Dimensions and Weight

Item	Description (H x W x D)
Footprint	360mm x 390mm x 480mm
Main Unit	360mm x 390mm x 378mm
Power Cord	2.5 meters or 8 feet long
Weight	17 kg

Certifications

Item	Description
Product Safety	IEC 61010-1:2009
Full EMC Testing	IEC 61326-1/ EN61000 FCC15B CISPR11:2009/ EN 55022:2007
Certification Mark	cTUVus (CB schemed)

Notice: For proper operation and safety when using this cleaner, always follow the directions in the User Manual. Specifications in this product sheet are subject to change with and without notice, as Hitachi High-Technologies Canada continues to develop the latest technologies and products for our customers.

For further information, please contact your nearest Hitachi Sales Representative.

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