EcoGuard™

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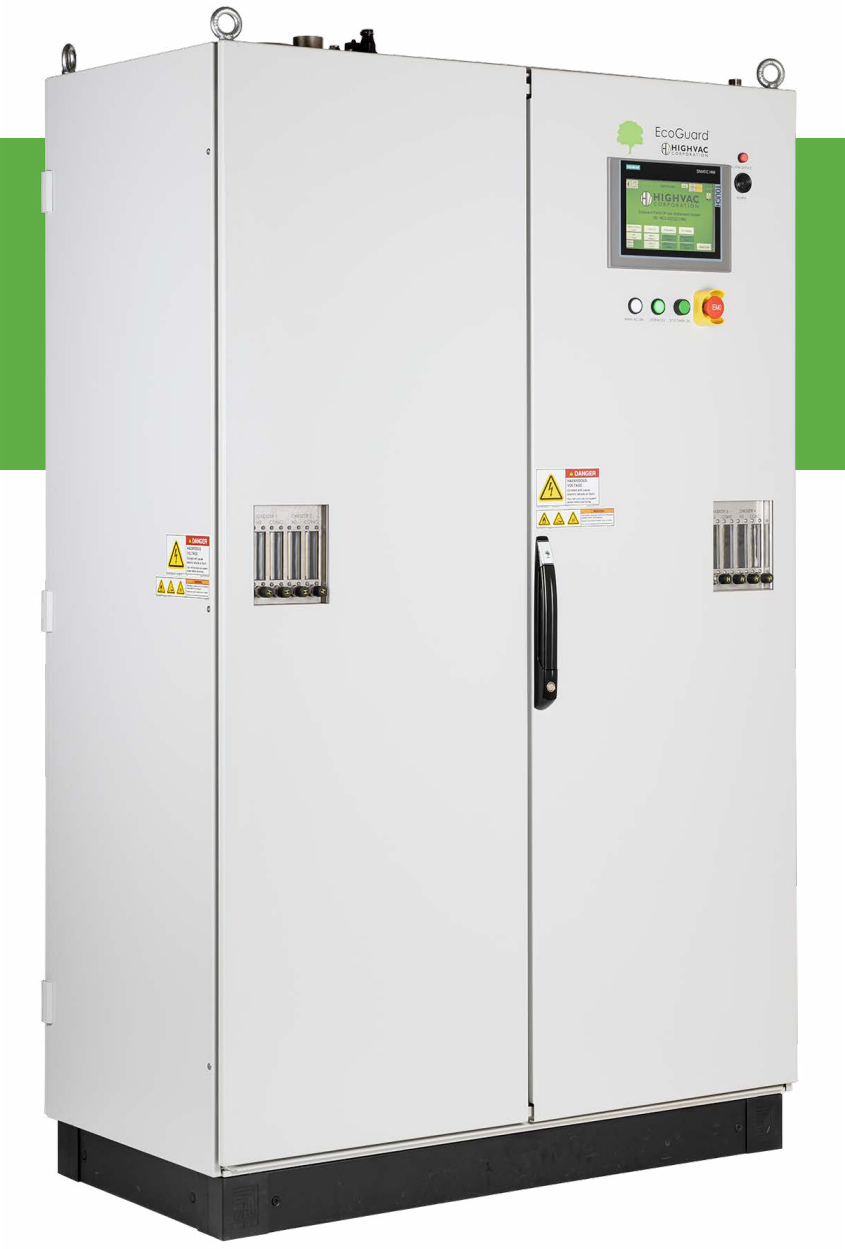


Hydrogen Fueled

Point of Use Abatement

Safe

Effective

Reliable

A sustainable future for Semiconductor Gas Abatement

HIGHVAC CORPORATION

Clean Hydrogen Fuel

EcoGuard™ abatement technology is a configurable burn/wet or wet/burn/wet PoU (Point of Use) abatement system. Our clean, hydrogen-fueled burner can assist in achieveing ESG carbon reduction goals. **EcoGuard**™ is a critical component on the path to net-zero emissions.

Beyond aiding in emissions control, the **EcoGuard**™ technology was designed to maximize uptime and simplify maintenance.

EcoGuard™ checks all the boxes in PoU abatement enabling an environmentally sustainable semiconductor future.

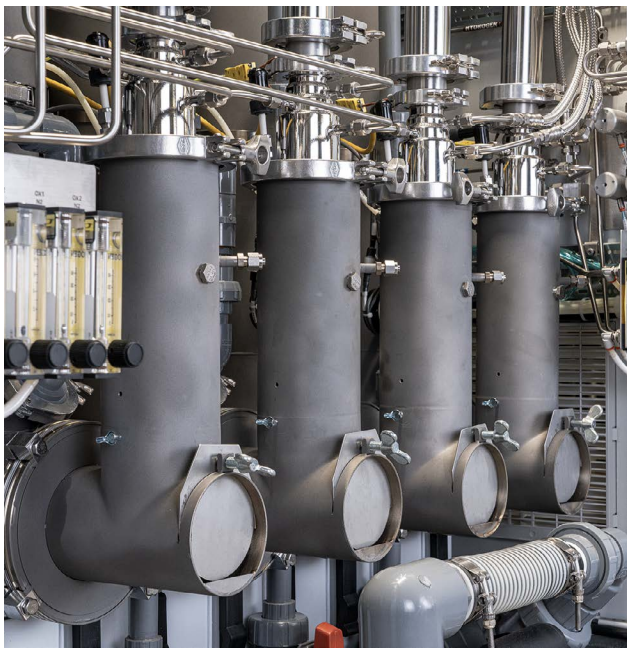
Epitaxial Abatement

- Safely abate up to 400 l/m H_2 per column
- Sustainable solution that eliminates clogging and reduces maintenance with minimal consumables
- Typical Uptime > 95%
- Stable H_2-fired burner eliminates Flame-outs
- High-Efficiency Water Scrubber for HCL
- Burn/Wet design for reduced pressure EPI
- Wet/Burn/Wet design for Atmospheric EPI
  - TCS >99% removal
  - HCL >99% removal
  - DCS >99% removal

CVD Abatement

- Precise control for effective DREs
- NF_3 > 99%
- F_2 > 99%
- C_2F_6 > 99%
- NH_3 DRE > 99%
- CF_4 > 90%
- Reduced NOx
- Hydrogen fuel reduces carbon emissions
- Separated Gas Streams prevent mixing of clean and dep gasses
- Burn/Wet or Wet/Burn/Wet System
- Selective low/mid/high-fire mode per process inlet/chamber

Separated Gas Streams



SGS

- Patented technology
- Complete separation of multiple chamber gas streams
- Multiple inlet configurations
- Two stage water scrubber
  - Fresh water final stage
- Siemens PLC
- Touch Panel HMI
- OPC UA capability for fab monitoring
- Reduced downtime
- Minimal Consumables
- Ease of maintenance

The **EcoGuard**™ SGS series utilizes separate inlets, burn chambers, and scrubber columns to ensure complete separation of gas streams from multiple chambers. The SGS technology eliminates the mixing of gases from deposition and clean cycles, which can create large amounts of ammonium compound byproducts. Independent gas streams allow for smart and precise control to meet requirements per chamber/process step.

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