EXERGY
HEAT TRANSFER SOLUTIONS

HEAT EXCHANGERS FOR SEMICONDUCTOR MANUFACTURING

PRECISION, PURITY & PROCESS EFFICIENCY

HIGH-PERFORMANCE HEAT EXCHANGERS FOR SEMICONDUCTOR FABRICATION

Semiconductor manufacturing depends on precise temperature control to protect product quality, reduce tool downtime, and maintain process consistency. Temperature fluctuations of even a fraction of a degree can cause wafer defects, disrupt etch profiles, or degrade photoresist resolution. Exergy heat exchangers are engineered for low-flow, high-purity, and process-critical applications, providing stable thermal performance in compact, cleanroom-optimized designs.

Exergy heat exchangers are designed from the inside out for outstanding performance in demanding environments. Our solutions deliver:

- **Cleanroom-optimized designs** *with compact footprints for easy integration into space-restricted fab environments.*
- **Stable thermal performance** *to maintain precise process control and protect tool reliability..*
- **Proven efficiency** *to support reliable yields and streamlined fab operations in the most demanding environments.*

With decades of expertise and a global installed base, Exergy provides the semiconductor industry with the **thermal management reliability** needed to keep fabs running efficiently and consistently.

ENGINEERED TO ELEVATE SEMICONDUCTOR YIELDS & MINIMIZE OPERATIONAL COSTS

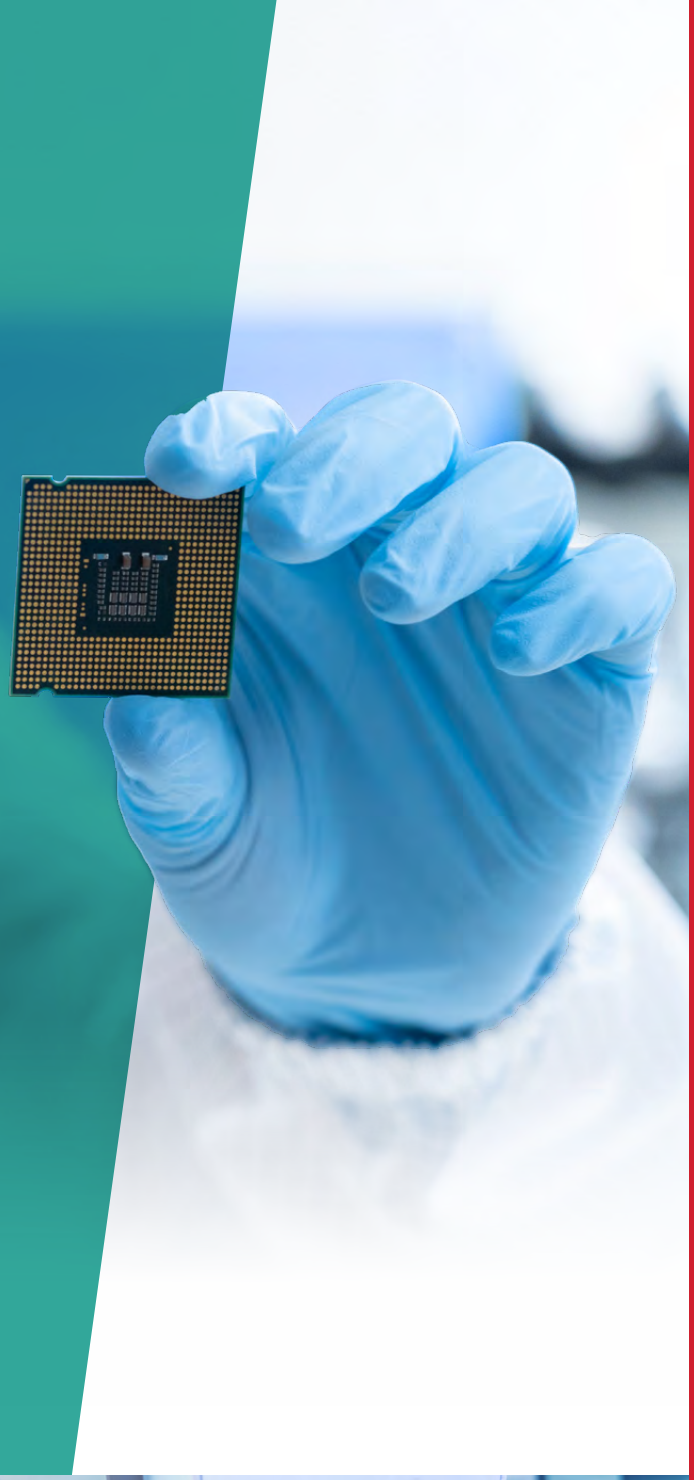
Exergy's compact, zero-maintenance heat exchangers are trusted by semiconductor fabs worldwide to reduce waste, protect product integrity, and ensure consistent uptime.

- **Process Precision:** *Maintain critical thermal control across applications like photolithography, etch and deposition, CMP slurry processing, and ultra-pure water loops.*
- **Compact, Efficient Design:** *Maximize fab floor utilization with heat exchangers that deliver performance in the smallest available footprint.*
- **Proven Reliability in Fab Operations:** *Exergy heat exchangers are engineered for long service life with zero maintenance, ensuring consistent uptime and reduced total cost of ownership in semiconductor manufacturing.*
- **Built for High-Purity Environments:** *Manufactured with a wide range of materials to minimize particle shedding, increase corrosion resistance, and meet ISO Class controlled environment requirements.*

SHELL & TUBE HEAT EXCHANGER	TUBE-IN-TUBE HEAT EXCHANGER
Up To 5,000,000 BTU/Hr (1465 kW)	Up To 100,000 BTU/Hr (29 kW)
Up To 250 GPM (946 LPM)	Up To 10 GPM (38 LPM)
Up To 1500 PSI (104 bar)	Up To 4500 PSI (310 bar)

>100,000
INSTALLATIONS WORLDWIDE

95%
RETURN CUSTOMER RATE



Exergy is the trusted partner of top semiconductor innovators around the globe. Our precision-engineered technologies deliver unmatched reliability and efficiency in the most demanding cleanroom environments—driving your productivity, protecting your processes, and powering your sustainability vision.

- **Photolithography:** *Stabilizes photoresist and developer temperatures to prevent pattern distortion.*
- **Etch and Deposition (CVD, ALD, PVD):** *Regulates process chamber and gas delivery temperatures for consistent reaction rates.*
- **CMP Slurry Processing:** *Controls slurry temperature to prevent agglomeration and ensure uniform planarization.*
- **Ultra-Pure Water Loops:** *Maintains target water temperature to reduce thermal shock and particle release at the wafer.*
- **Chemical Recirculation Loops:** *Keeps aggressive chemicals at optimal temperatures for etching and rinsing steps.*
- **Gas Delivery / Purification Systems:** *Cools or conditions process gases to ensure safe, controlled delivery to reaction chambers. Available with CVD surface treatment to reduce the potential for ion leaching.*

PROCESS DURABILITY—ENHANCED

Process fluids in semiconductor lines can be aggressive. That's why Exergy offers corrosion-resistant CVD coatings enhancing protection without sacrificing purity. This adds another layer of reliability to an already robust platform. **Surface treatments are also available to minimize ion leaching concerns, ensuring compatibility with the most sensitive semiconductor processes.**

Available in 316L stainless steel, Hastelloy®, Inconel®, and other specialty alloys for aggressive chemistries and temperature differentials.

WHY EXERGY?

- **Proven in Controlled Environment Conditions:** *Thousands of global installations across critical cleanroom and wafer-processing environments.*
- **Tailored to Your Process:** *Custom designs available to meet your tool, loop, and purity requirements.*
- **Designed for Speed, Space & Stability:** *Engineered to reduce risk, accelerate process stabilization, and support fab expansions or retrofits.*

READY TO OPTIMIZE YOUR THERMAL CONTROL STRATEGY?

Let's talk about your specific fab environment, media requirements, and performance targets. Whether you're scaling a new line or retrofitting an existing system, Exergy can help drive measurable improvements in yield, uptime, and efficiency.

CONTACT US TODAY

Speak with a semiconductor thermal specialist and explore customized solutions.

EXERGY, LLC
320 Endo Boulevard
Garden City, NY 11530

Tel (516) 832-9300
Fax (516) 832-9304

www.exergyllc.com

EXERGY
HEAT TRANSFER SOLUTIONS