

# HEATER JACKETS & PROCESS TRAPS

## TEMPERATURE MANAGEMENT OF VACUUM SYSTEMS



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Our specially designed heater jackets provide increased thermal uniformity, ensuring effluents remain gaseous, thereby eliminating downstream problems that can create safety issues. The heater jackets are designed for use on stainless steel tubing and components. These cleanroom-compatible, CE compliant jackets are made with a unique sewn design for proper fit and easy installation and maintain a safe, “warm to touch” temperature on the outside of the jacket.

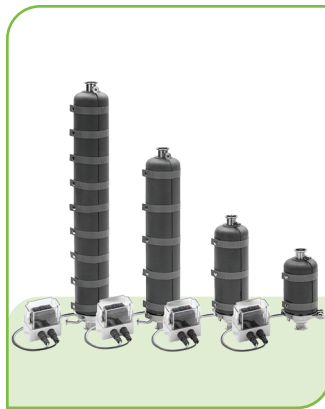
MKS’ highly efficient and compact process traps keep byproducts trapped inside, reducing damage to pumps, gauging, or anything else that can be damaged or clogged by hardened debris. Each trap is optimized for a specific manufacturing process, ensuring all byproducts are properly managed. When used in conjunction with an Effluent Management Subsystem, the results can include safer cleaning and byproduct disposal, increased uptime, longer pump life and higher yields.



### SERIES 49UL

#### Thermal Management System

- Polyimide and PTFE-woven jacket material
- High operating temperature
- Intuitive digital communications link to one or an entire heater network
- Local LED status display
- Tablet based software application and hardware kit



### SERIES 48

#### Filter Housing Heaters

- 95°C set point
- Available in 100-240 VAC
- User-adjustable temperature set points for advanced process control
- Heater jacket, controller and cables are certified to NEMA 4X requirements



### SERIES 48

#### Heaters for Single-Use Filters

- 50°C set point
- Available in 120-240 VAC
- Increased thermal uniformity
- User-adjustable temperature set points
- User-friendly communication and display options



### VACUUM FITTING HEATER JACKETS

- Polyimide and Teflon® woven jacket material
- Available in 120 or 240 VAC
- Constructed with fully squared ends and form fit shape

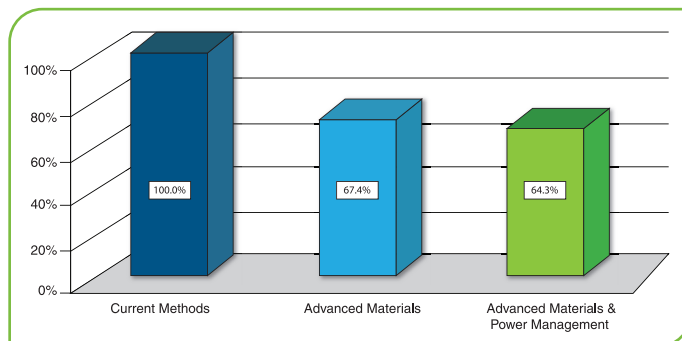
### Advanced Digital Communications

MKS' S49UL Thermal Management System features an automatic self-addressing function for configuration of the controller network. Upon connection, the Tablet App or LTA+ Controller automatically identifies networked controllers and sets individual device addresses, configuring the communication network. The user interface system allows access to system settings and functions via Modbus RTU communications over serial RS485. Commands can be sent to individual heater controllers or broadcast to the entire heater network.

### Significant Energy Savings

The advanced, thermally efficient Polyimide and PTFE materials used in the S49UL system's heater jacket construction provide superior insulation and over 35% energy savings compared to

other common heater products. The system also offers a Standby Mode which can be used during preventative maintenance cycles, allowing for a reduction in energy consumption while minimizing heat-up and restart time.



#### METAL ETCH PROCESS TRAP

- 10 - 100 Torr process pressure
- 100 mTorr foreline pressure
- 200-500 sccm gas flow rate
- Stainless Steel, Viton® exposed to process
- Compact, lightweight design



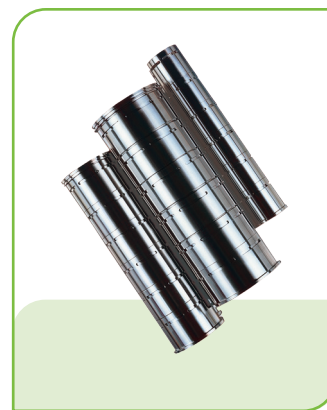
#### TEOS PROCESS TRAP

- Viton, Kalrez seals
- 6" and 8" angle and inline
- NW50, NW80, and NW100
- KF and MF flanges
- Compact, lightweight design



#### VAPOR SUBLIMATION PROCESS TRAP

- Viton, Silicone seals
- 6" and 8" capacity
- >99% efficiency
- NW50, NW80, and NW100
- >6gal/hr (400ml/min) cooling water flow rate
- Compact, lightweight design



#### NITROGEN BARRIERS

- Viton, Kalrez, Chemraz O-ring
- Stainless Steel type 304
- 10" maximum length
- NW80

## WHY MKS?

### CRITICAL TECHNOLOGIES

World-class technology and development capabilities for leading-edge processes



### PROVEN PARTNER

Recognized leader delivering innovative, reliable solutions for our customers' most complex problems



### OPERATIONAL EXCELLENCE

Consistent execution across all aspects of our business



### COMPREHENSIVE PORTFOLIO

Extensive offering of products and services for the markets we serve



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**MKS INSTRUMENTS** enables technologies that transform our world. We deliver foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications.

We apply our broad science and engineering capabilities to create instruments, subsystems, systems, process control solutions and specialty chemicals technology that improve process performance, optimize productivity and enable unique innovations for many of the world's leading technology and industrial companies.

Our solutions are critical to addressing the challenges of miniaturization and complexity in advanced device manufacturing by enabling increased power, speed and feature enhancement for optimized connectivity. Our solutions are also critical to addressing ever-increasing performance requirements across a wide array of specialty industrial applications.

Additional information can be found at [www.MKS.com](http://www.MKS.com).

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