

## ***CHEMGUARD 500™***

### ***Automated Chemical Refill System with Solvent Purge***

#### ***INTRODUCTION***

The ChemGuard 500 is a chemical refill system with solvent purge for low volatility chemicals such as TDMAT, TDEAT, TAETO, TBTDET, and Cupra Select. The CG 500 takes advantage of proven technology from the widely installed ChemGuard Automated Chemical delivery System. Completely modular components allow for customization, ease of maintenance and future expansion. ChemGuard 500 maintains chemical purity, provides comprehensive safety features and interlocks, and maximizes process uptime by supplying continuous chemical to the process tool. The ChemGuard Chemical Refill System offers a significantly quicker and cleaner process than the blow-down and vacuum method.

#### ***FEATURES***

##### **New Features**

- Low volatility chemicals are removed in five quick purge cycles, no visible or microscopic residue remains in plumbing
- Quick change out of Bulk and Process
- Automatic Solvent Purge cleans all internal plumbing required to change out all containers and clean the internal plumbing panel
- Solvent available for cleaning house lines
- Manual solvent Purge will clean external plumbing and remove low volatile and highly reactive chemicals prior to opening and exposing house lines to atmosphere

##### **Standard Features**

- Significant footprint reduction (50%)
- Cabinet exhaust reduction (75%)
- Semi S2-93, S8-95, CE and UFC compliant
- Reduced scrubbed exhaust requirement
- Universal bulk chemical container accommodation (from 4 to 40 liters)
- Easy integration of various chemicals
- Ultrasonic empty sensor allows 100% utilization of chemical from bulk container
- Modular designed components for easy customization and maintenance
- Innovative cabinet plumbing and container connections reduce cycle purge and container change-out time
- Monitors chemical vapor pressure in container lines guaranteeing complete chemical removal for safe and contamination-free container changes
- Automatic leak check detects even minute leaks safeguarding against chemical exposure
- System can be programmed with specific parameters to meet customized fab requirements and process applications
- 110% spill containment
- Life safety alarms can be individually selected for communication to a fabwide monitoring system and action taken by cabinet.



ChemGuard 500  
Automated Chemical Refill System

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## **CHEMGUARD 500™**

### **RELATED EQUIPMENT**

- ARC - Automatic Refill Controller
- ChemGuard™ -BCD - Bulk Chemical Delivery System
- ATCS - ABSOLUTE™ Temperature Control System
- VMDOT™ - Vacuum Mass Flow Control Unit

### **APPLICATIONS**

The ChemGuard Automated Chemical Delivery System with Solvent Purge is a stainless steel system compatible with chemicals used in Chemical Vapor Deposition processes. ChemGuard 500 can be easily configured through both software and hardware for the different requirements of various low volatility chemicals and delivery systems.

### **INTERFACES AVAILABLE**

The ChemGuard 500 Automated Refill System utilizes a Direct Digital Control interface to communicate with process tools supplied by nearly every major manufacturer.

#### **Inputs and Outputs**

##### **Life Safety**

##### **Inputs/Outputs:**

- Fire detection
- Spill detection
- Flammable vapor detection
- Exhaust flow low sensor
- Vacuum liquid detect
- Hazardous environment controller purge low sensor
- Door open sensor
- Pneumatic pressure low sensor

##### **Direct Digital Control (DDC) Interface**

##### **Digital Inputs (0-30v DC or contacts):**

- Vacuum interlock process reservoir
- Vacuum pump interlock bulk reservoir
- Fill bulk container
- Fill process container
- Back fill chemical from tool to process container
- Tool chemical shut down (lines 1, 2, 3, 4)

##### **Digital Outputs (0-30v DC or contacts):**

- Major alarm
- Minor alarm
- Filling process container
- Request chemical from fabwide system
- Bulk container low
- Bulk container empty
- Process container low
- Process container overflow
- Bulk change
- Process full
- Vacuum request-bulk and process reservoir card

##### **Analog Outputs (0 to 5v DC):**

- Bulk container level
- Process pressure out
- Process container level
- Bulk pressure

(one set of Inputs/Outputs per Reservoir)

## CHEM GUARD 500™

### ORDERING INFORMATION

Contact your Schumacher sales representative for more information.

### APPLICATION SUPPORT

Schumacher maintains an active research program aimed at continuously improving the processes, chemicals, and delivery systems we sell. Our technical staff stands ready to work with you to meet your application, process, and safety needs. For more information please call 1-800-545-9242 in the U.S.A., or 760-931-9555.

### SPECIFICATIONS

Height	2184.4 mm (86.00") - plus utility connection
Width	457.2 mm (18.00")
Depth	533.4 mm (21.00") - back panel to EMO button
Depth (w/ heater option)	609.6 mm (24.00") - back panel to front of heater
Weight	160 kgs (350 lbs.) - aprox.
Weight Scale Capacity	136.1 kg (300 lbs.)
Weight Scale Accuracy	± 140 grams
Weight Scale Repeatability	± 40 grams
Chemical Outlet Line	6.35 mm (1/4" in.) 316 L stainless Male VCR - 2 outlet manifold options available
Delivery Line Length	100 feet (30.5 meters ) maximum
Pressure Transducer Accuracy	0.5% of full scale output ements

### UTILITY REQUIREMENTS

Power Requirements	
• No Degasser Option	90 to 250 VAC 50/60 Hz-100 watts
• With Degasser Option	100 to 115 VAC 60 Hz - 160 watts
Push Gas Inlet	620.5 - 758.4kPa (90-110 psig) 6.35 mm (1/4 in.) Male VCR connection Helium, Nitrogen, or Argon. 1 ppm moisture and oxygen
Pneumatic Gas	517 - 620.5 kPa (75-90 psig) 6.35 mm (1/4 in.) Swagelok Nitrogen of CDA
Purge Gas	0 - 15 psig 6.35 mm (1/4 in.) Male VCR connection Nitrogen or other Inert Gas
Process Vacuum	12.7 mm (1/2 inch) Male VCR connection < 50 Mtorr for leak check and vacuum purge cycles
Process Vent	To scrubbed house exhaust 6.35 mm (1/4 in.) Swagelok connection
Cabinet Exhaust	4" diameter circular duct 850 liters/min (30 CFM) minimum required

*For More Information*

If you would like additional information or technical assistance in preparing specific formulations, write or call Air Products and Chemicals, Inc. at the following location.

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