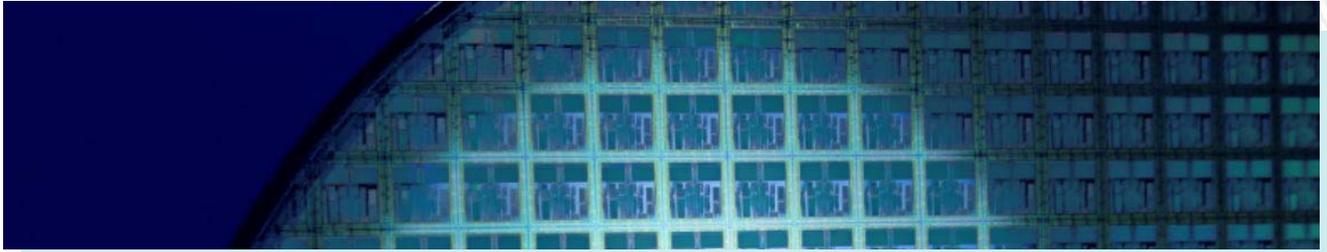


CHEMGUARD® GEN.III MODELS CG500



DUAL-TANK CHEMICAL REFILL SYSTEM WITH PATENTED,
AUTOMATIC SOLVENT PURGE



The CHEMGUARD® family of automated refill systems is based on a multi-generational history beginning with the first Schumacher semiconductor refill system in 1986. Years of experience goes into each design, ensuring delivery of ultra high-purity (UHP) liquids in a safe and cost-effective manner.

The 3rd Generation of the CHEMGUARD is here!

The CHEMGUARD Gen III, CG500 is a dual-reservoir (Dual Tank Liquid Refill) system with automated solvent purge for low volatility chemicals. Dual precursor tanks allow for 100% uptime to meet the needs of today's manufacturing fabs or in cutting edge R&D facilities.

CHEMGUARD has a reduced footprint of 457mm (18 in.) by 533 mm (21 in.), allowing for multiple cabinet placement adjacent to each other. This maximizes the use of your available floor space within the fab while reducing exhaust requirements for a lower cost of ownership. Each cabinet is fully automated and includes a microprocessor-based controller with color touch screen. The third generation controller design optimizes container change operations with automated monitoring to ensure removal of all chemical traces from pigtail connections. Standardized, modular design allows for customization, ease of maintenance and future expansion. Each CHEMGUARD model is backed with testing and years of experience to ensure reliable chemical delivery to the tool with no downtime.



CHEMGUARD Ready indicates that the CHEMGUARD family of delivery solutions has been developed in partnership with our world-class molecule development team. This ensures we provide you solutions that work for your application while protecting your processes and your people.

CHEMGUARD Automated Chemical Refill System features:

Modular design allows for easy customization and maintenance

Ergonomic **touch screen** display provides operator with real-time insight in cabinet operation

Process chemical and Solvent Canisters (both included)

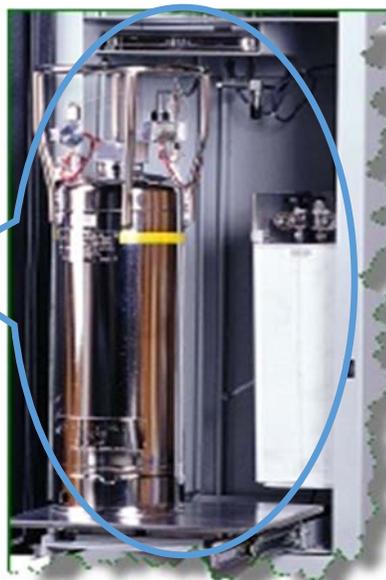
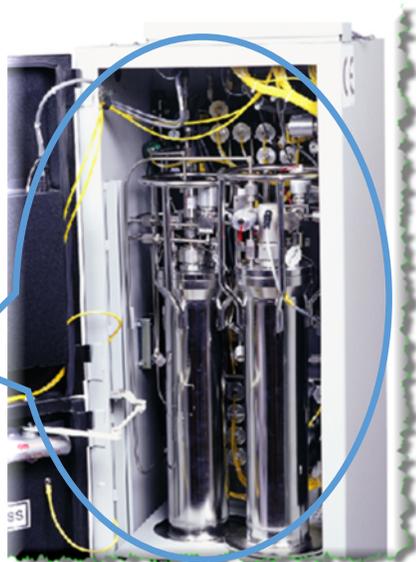
Patented ultrasonic technology allows **100% bulk chemical utilization** with no particle creation risk

Bulk chemical (not included) and **Solvent Recover Canister** (included)

Patented solvent purge technology allows clean purges while maintaining chemical purity

110% spill containment

Small footprint allows for reduced exhaust requirements and fab clearances



Hundreds of molecules are approved in the CHEMGUARD for high volume manufacturing applications. A small sample is listed by model below by model

CHEMGUARD 500 is specifically designed for very low vapor pressure precursors. The patented, automatic solvent purge ensures molecule purity on some of the lowest vapor pressure molecules used in semiconductor manufacturing.

A small sample of the molecules approved in a CG500 are:

- TDMAT
- TDEAT
- TAETO
- TBTDET
- TDEAH
- TEMAH, TEMAHf
- TEMAZ, TEMAZr
- TPOSL

Innovative cabinet plumbing and container connections **reduce cycle purge and container change**

Fabwide Experience: CHEMGUARD[®] to process tool

The CHEMGUARD family is more than just a standalone piece of equipment in your fab. It is designed to interface directly to most OEM process tools and can be supplemented with fabwide distribution systems designed for Ultra High Purity (UHP) liquids.



AVAILABLE OPTIONS/ACCESSORIES

Bulk Container Pigtails	Can be modified to fit most UHP vessels. VCR fittings are standard
Outlet Manifolds	Available with 2 Precursor outlets and 2 solvent outlets
Bulk Scale	Included
Fire Suppression	Independent CO ₂ Fire Suppression System with Battery Back-Up available
Fire Detection	Flammable vapor detector, and Temperature are available
Additional Spill Protection	Additional spill protection for larger vessels or where greater than 110% is desired
Process Container Sizes	Process canister sizes are available in 4 or 11 liters in most models

Not all options are available on all models. Please speak with your local representative for more information.

SPECIFICATIONS

3rd Party Certifications	SEMI, UL, NRTL (MET), CE
Height	2209.8 mm (87 inches) - plus utility connection
Width	457.2 mm (18 in.)
Depth	533.4mm (21 in.) - back panel to EMO button
Weight	160 kg (350 lbs.) - aprox.
Weight scale capacity	Full scale— 45.4 kg (300 lbs)
Weight scale accuracy	0.1% of full scale output
Weight scale repeatability	0.1% of full scale output
Chemical outlet line	6.35mm (1/4 in.) 316L stainless male VCR—2 outlet manifold (precursor)
Delivery distance limit	Relative to the delivery line size, typically 100 meters (300 ft.)
Digital inputs (0.30VDC or contacts)	Digital Outputs (Dry Contacts)
Pressure output range	± 2 psi of setting

SIGNALS AVAILABLE (SAMPLE ONLY)

Life safety shutdown	Life safety alarms
Vacuum pump interlock bulk reservoir	Shutdown (major) alarm
Fill bulk container	Fault (minor) alarm
Fill process container	Chemical on—flow to tool
Tool chemical shutdown (lines 1,2)	Bulk container empty
Vacuum request	Request chemical from fabwide system

LIFE SAFETY

Fire detection available	Pneumatic pressure low sensor
Door open sensor	Hazardous environment controller purge low sensor
Vacuum liquid detection	Exhaust flow low sensor
Spill detection	Process container overflow protection
Flammable vapor detection	

UTILITY REQUIREMENTS

Power requirements:	120-240 VAC 50/60 Hz 125W
Push gas inlet	552-689 kPa (80-100 psig) 6.35mm (1/4 in.) male VCR connection Ultra high-purity He or better recommended
Pneumatic gas	586—655 kPa (85-95 psig) 6.35mm (1/4 in.) push-to-connect fitting N ₂ or house air recommended
Purge gas	70-414 kPa (10-60 psig) 6.35mm (1/4 in.) male VCR connection Semi-grade N ₂ or better recommended
Process vent	To scrubbed house exhaust 6.35mm (1/4 in.) Swagelok connection
Cabinet exhaust	101.6mm (4 in.) diameter circular duct 850 liters/min (30 CFM) required
Process Vacuum	12.7 mm (1/2 in.) Male VCR connection, with levels determined by chemical VP: <15 mTorr (VP <500 mTorr at 20 °C) or <80 mTorr (VP >500 mTorr @ 20 °C)

RELATED EQUIPMENT

Ethernet—CHEM GUARD OPC server/network software
CGARC—Automatic Refill controller for remote fill



For more information, please contact us at:

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