

Spectrochem Instruments Pvt. Ltd.

Hydride Generator

Special points of interest:

- ATMEL AVR ATM162 RISC controller based
- Twin high precision peristaltic pumps
- Individual pump speed control
- R.P.M range 10 to 100 in steps of 10
- Glass gas liquid separator
- Purge gas control with Rota meter
- Special Quartz cell with custom burner mount
- Special Mercury cell with Quartz windows



Applications:

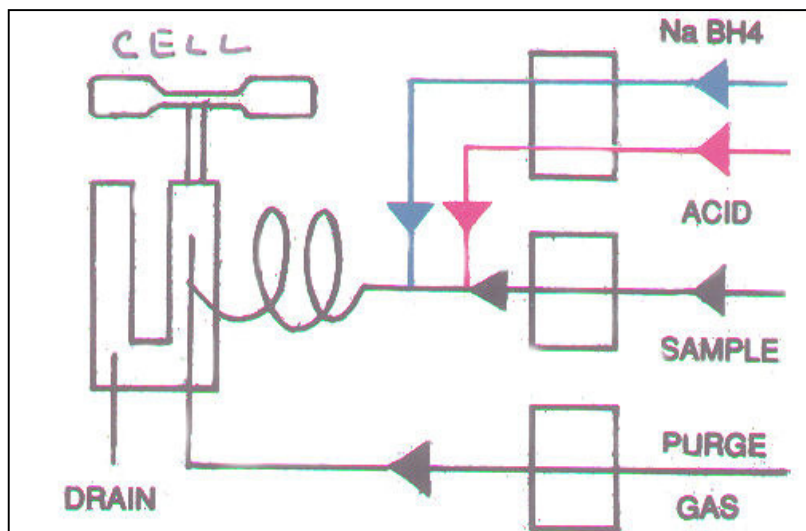
- Drinking water
- Pollution monitoring
- Food Industry
- Forensic Science
- Pharmaceuticals
- Aqua culture
- Battery Industry
- Cosmetic Industry
- Electronic Industry
- Wine & breweries
- Metallurgy
- Refineries
- Power generation

Product Summary:

A revolutionary vapor generation accessory offers an extremely sensitive procedure for analysis of ...

As, Bi, Sb, Se, Te, Sn & Hg with flame like precision at parts per billion (ppb) level.

The Flow Diagram & Principle:

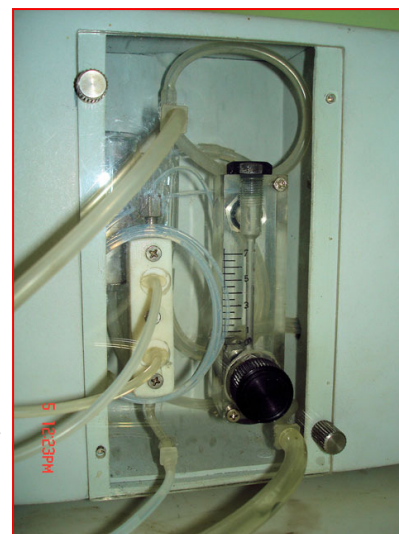


Our unique Glass gas liquid separator

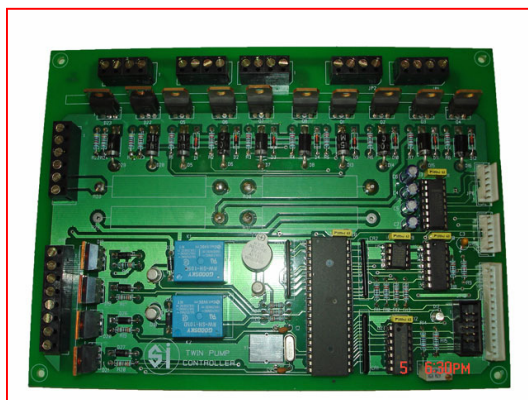
Two peristaltic pumps, one with twin channels & the other a single channel is employed for liquid handling. Pump-1 having twin channels, pumps the reagents. Acid & Borohydride solutions. The single channel second pump (pump-2) is employed for sending sample into the liquid stream.

One end of pump tubing is connected to the respective reservoirs, (reagents & sample beaker). The other end of the pump tubing is connected to a manifold leading to a one meter fine bore Teflon reaction column. The other end of the column is connected to a glass gas liquid separator.

The acidified sample reacts with Borohydride while passing through the column and the elemental Hydride gas generated along with the fluid stream reaches the gas liquid separator. The hydride gas is purged out with an inert gas (Nitrogen/ Argon) into the flame cell mounted on the burner of the AAS while the waste fluids go t are drained off.



Side panel Liquid handling system



ATMEL ATMEGA162 based pump control

The microcontroller precisely controls the r.p.m of twin stepper motors. Up to 10 methods are provided for the user to store settings for running analysis. The system supports both standalone operation as well as PC interface. RS232 serial port is provided for host connectivity. The system also features a pressure sensor wired as an interlock. The pressure sensor constantly monitors the input line pressure for the carrier gas. If adequate pressure is not present, the interlock automatically shuts off the pump motors. The system displays an error message indicating the absence of the carrier gas. Up on restoring pressure, pumps automatically start at set speed.

System Specifications:

PUMPS	Embedded microcontroller based Precision Stepper Motor driven (1.8 Deg)
NO OF ROLLERS	Eight (MoS ₂ Filled Nylon Rollers)
NO OF CHANNELS	2 (Two on each pump)
SUPPLY VOLTAGE	220 V, 50Hz Single phase a c
PUMP TUBING (SILICONE TUBING)	(a) 0.05ml-1.0 ml (b) 0.5 ml-3.0 ml (c) 1.0 ml-9.0 ml
PUMP HEAD & PRIMING	Snap fit cassette's made of Derlin with adjustable pressure ratchet. Auto priming when pressure ratchet properly adjusted.
TUBE LIFE	100 Hours.
DUTY CYCLE	Continuous for 100 hours.
MOTION CONTROL	Embedded microcontroller ATM162 based precision stepper motor control.
RPM	10-90 in steps of 10, switch selectable through front panel push button keyboard & 16 X 2 backlit alpha numeric display or commanded through RS232 by host system.
PUMPING ACCURACY	± 0.5% of the calibrated flow
MIXING UNIT	The all new all Teflon four port mixer unit with integrated one meter long Teflon FEP tubing prevents any contamination due to corrosion.
GAS CONTROLS	In-line pressure regulator, integrated pressure sensor wired as an interlock, Rota meter & purge gas solenoid.
GAS LIQUID SEPERATOR	A unique gas liquid separator made of glass, efficient in separation of hydride gas from the waste liquid that is effectively drained from the system. A nitrogen jet in case of AAS or argon jet to drive the gas into the burner/ICP Plasma.
USER INTERFACE	Back lit Alpha numeric LCD with four push button user interface or RS232 Serial commands from Host.

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Instrumentation Through Innovation

At Spectrochem Instruments Pvt. Ltd. We design, develop & manufacture cutting edge embedded microcontroller based instruments & devices. We have behind us more than 17 years experience in diverse fields. Our product lines include....

- 1) *Analytical Instrumentation.*
- 2) *Medical & biotechnology Instrumentation.*
- 3) *Lab, Industrial & process automation.*
- 4) *Environmental, weather & pollution monitoring.*
- 5) *Home automation & security systems.*

Our company 's in-house R & D effort is recognized by DSIR. We have dedicated & highly motivated team of engineers to carry out high technology projects.

Installation Requirements:

Power Supply : 220V, 1 Amp single phase a.c.

Gas : Nitrogen or argon gas cylinder fitted with a two stage regulator and a control valve.

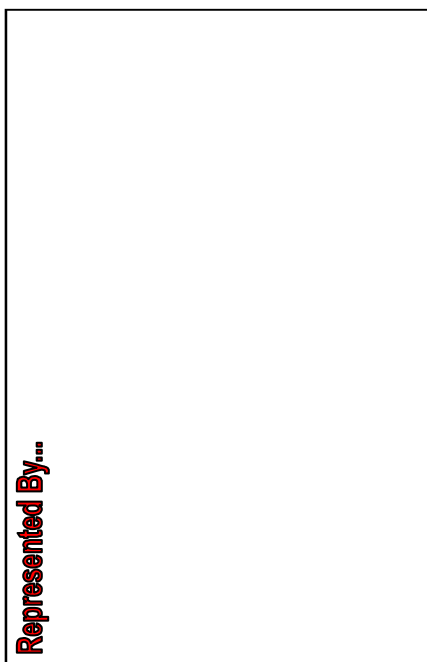
Space : The system occupies only 1 ft by 1ft space in front of the main equipment.

Chemicals : Borohydride pellets and acids of Supra pure grade, Sodium Hydroxide, double distilled water and the usual glass apparatus for standardization and calibration.

AAS Make: Burner dimensions & burner top footprint sketch, burner chamber width.

Our VGA is compatible with any make of AAS. Till date we have supplied more than 180 units throughout India and installed on all leading AAS brands.

VARIAN
Instrumentation Laboratories IL
PERKIN ELMER
GBC
Phi Unicam
Thermo
Zena Analytical
Buck Scientific
ECIL
ELICO
CHEMITO



Represented By...