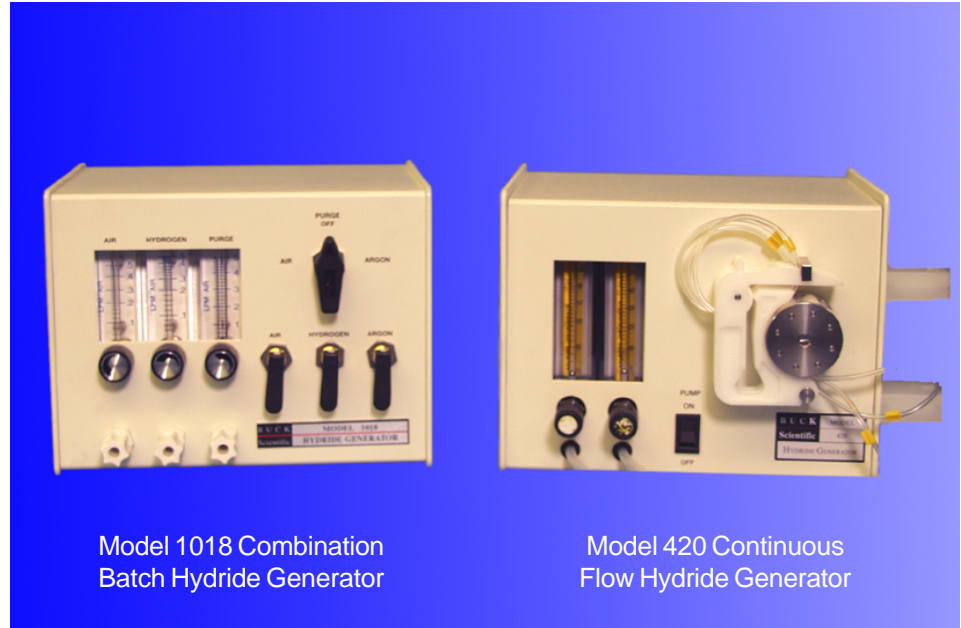


Buck Scientific Continuous Flow Hydride/Cold Vapor System

For parts-per-trillion level detectability

Overview

The Model-420 is an easily adaptable accessory for Flame AA Spectrophotometers that allows PPT detectability for As, Se, Sb, Sn, Te, Bi and Ge using standard hydride generation procedures. Using inert polymer components and a reliable pumping system, users can quickly switch between flame and hydride.



Model 1018 Combination
Batch Hydride Generator

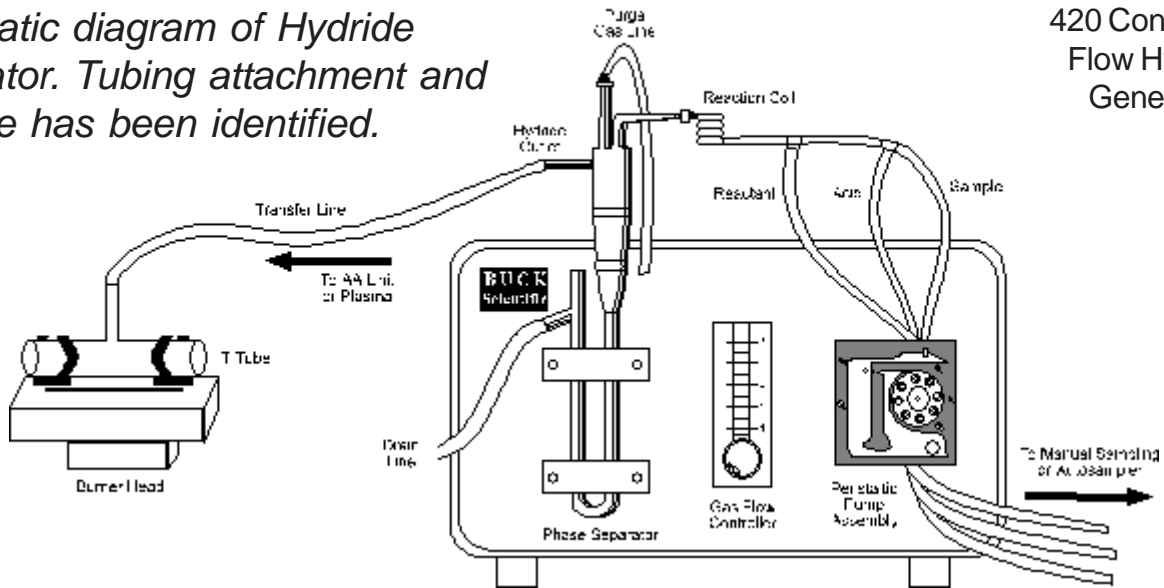
Model 420 Continuous
Flow Hydride Generator

Features

- Allows superior detection limits for hydride metals compared to graphite furnace AAS, typically in the 100-500 parts-per-trillion range.
- Can install easily and rapidly to existing flame set-up and run within 2 minutes.
- Does not require hydrogen gas
- Continuous flow pump design allows for simple interfacing of intelligent auto-sampler for high-throughput, unattended operation.
- 4 order of magnitude dynamic range using the Buck Model 210VGP AA system for the highest accuracy over a wide range of sample concentrations.....minimizing dilutions and errors.
- Inert tubing gives rapid equilibration time allowing typical throughputs of 50 samples per hour with reproducibilities of better than 2% at the 500 ppt level.
- Optimized procedures for *all* the hydride elements eliminates development time and simplifies operations for the chemist or lab technician.
- Low format footprint requires minimal bench space and unit can be put on a cart or side table.

Schematic diagram of Hydride Generator. Tubing attachment and purpose has been identified.

420 Continuous Flow Hydride Generator



Specifications

Mechanical design:

3-channel peristaltic pump system with 8.5ml/minute solution delivery.

Power requirements:

110-120VAC/60Hz for US and 208-240VAC/50Hz for INTL

Sample throughput:

~50 samples per hour using Buck Model-210 Flame AAS.

Gas requirements:

Argon @ ~15 PSIG delivery

Response time:

Equilibration is reached for Hydride Generation within 60 seconds.

Dimensions:

14"W x 12"D x 10"H

Weight:

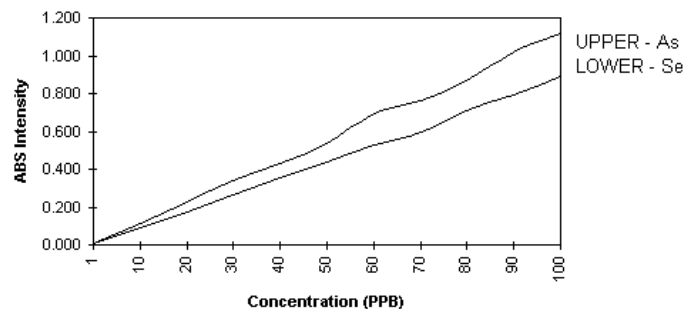
20 lbs.

Example of Detection Limits for the BUCK Model-420 Hydride System (based on data from optimized Model-210 AA)

Element	Wavelength (ABS)	Min. DL	Typical RSD at 10 PPB
Arsenic (As)	193.7nm	0.15 PPB	1.5%
Bismuth (Bi)	223.1nm	0.25 PPB	2.1%
Antimony (Sb)	206.8nm	0.20 PPB	1.8%
Selenium (Se)	196.0nm	0.35 PPB	2.6%
Tin (Sn)	286.3nm	1.0 PPB	8.5%
Tellurium (Te)	214.3nm	0.30 PPB	3.1%

Examples of Linearity for Arsenic and Selenium

Signal Response for As & Se



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