Leak Detectors

Using liquids to detect gas leaks in a gas chromatography system can lead to unforeseen problems. Small amounts of liquid can seep into fittings, or through the septum, and damage the column. Electronic leak detectors are a much better alternative than liquid detectors, and can easily and quickly pinpoint gas leaks that are too small to detect with a soap solution. Liquid leak detectors are still available, and can be found in our catalog and on our website.

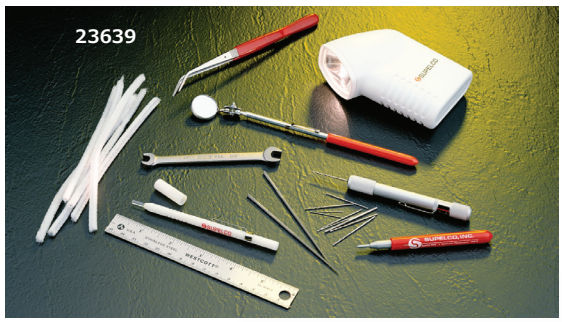
GOW-MAC® Gas Leak Detectors

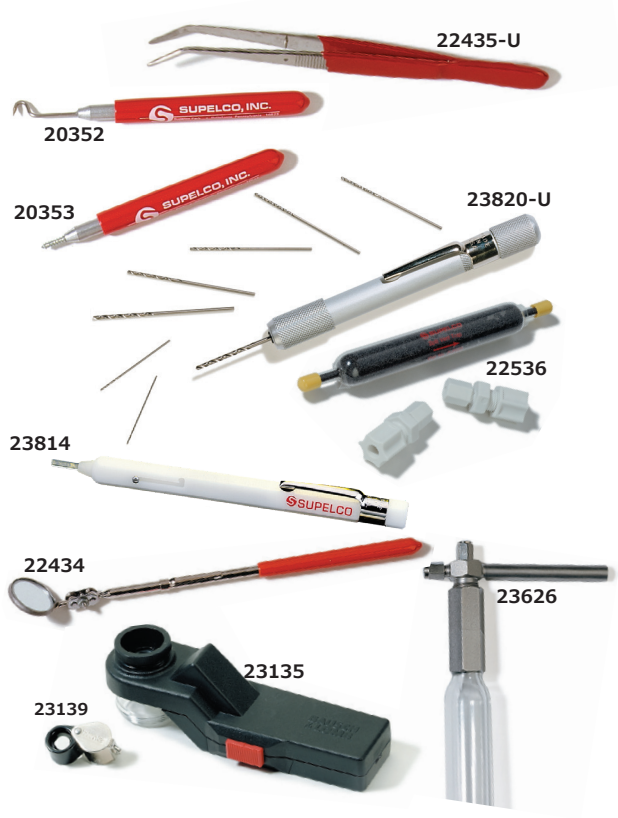
- Easy to operate
- Allow leaks to be found quickly without risk of contaminating the system
- Provides maximum usable sensitivity with high signal to noise ratio amplification
- Operates on the same principle as a thermal conductivity detector
- Will respond to any gas mixture that has a thermal conductivity value different from that of air
- Include internal, rechargeable batteries and charger

Description	Cat. No.
Model 21-070, miniature, 115 V	22807
Model 21-072, miniature, 230 V	22808
Carrying case for 22807 or 22808	22809

Hand Tools

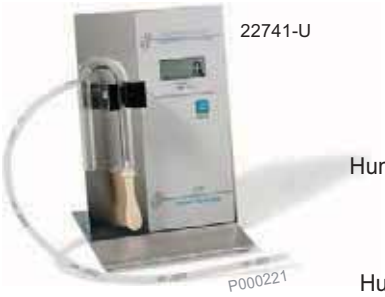
We offer a variety of hand tools that are specifically designed to assist the chromatographer in the installation and maintenance associated with gas chromatography.





Description	Cat. No.
Capillary Starter Kit	**23639**
Hook Septum Puller	**20352**
Screw Septum Puller	**20353**
Stainless Steel Forceps	**22435-U**
Pin Vise Drill Kit	**23820-U**
Capillary Cleaving Tool, retractable blade	**23814**
Coddington Magnifier, 20X	**23139**
Lenscope Illuminated Magnifier, 10X	**23135**
Mirror with Rotating Head	**22434**
Split Vent Trap Kit	**22536**

Gas Delivery
Flow Measurement, Leak Detectors



Humonics Optiflow Flowmeters

- Four flow ranges available; accurate to within ±2 or ±3% of any reading
- Portable – includes standard 9-volt battery
- Automatic power-off for extended battery life
- Field replaceable tubes
- Compatible with electronic pressure control

SPECIFICATIONS
Optiflow 420 Digital Flowmeter Flow Range: 0.5-50mL/min Accuracy: ±3% of any reading Display: mL/min or linear velocity
Optiflow 570 Digital Flowmeter Flow Range: 0.5-700mL/min Accuracy: ±2% of any reading Display: mL/min or split ratio
Optiflow 650 Digital Flowmeter Flow Range: 5-5000mL/min Accuracy: ±2% of any reading Display: mL/min or split ratio

These high-precision instruments combine the simplicity and versatility of a bubble meter with the speed and accuracy of a microprocessor, providing you with a reliable means of measuring gas flow. Optiflow Digital Flowmeters automate the performance-proven bubble flowmeter "positive displacement" technique that works independent of the type, mass, or mixture of gases. They retain the key advantages of the bubble meter – simplicity and reliability – while improving accuracy and reproducibility, and providing certified performance.

The versatile units can be used with all gases. And they feature an easy-to-read, accurate digital display, eliminating the need for tedious bubble watching, timing, and flow rate/time conversions. The bubble is visible for your observation.

Optiflow Digital Flowmeters help you comply with the quality protocols of the American Society for Quality Control, ISO 9000, and Good Laboratory Practice. Each unit is individually calibrated to the registered standards of the National Institute of Standards and Technology and comes with a certificate of calibration. A recalibration service is available.

DESCRIPTION	CAT. NO.	PRICE
Optiflow 420 Digital Flow Meter	22806	
Replacement Flow Tube	22779-U	
Optiflow 570 Digital Flow Meter	22741-U	
Replacement Flow Tube	22777	
Optiflow 650 Digital Flow Meter	22912	
Replacement Flow Tube	22778	

Humonics Liquid Flowmeters

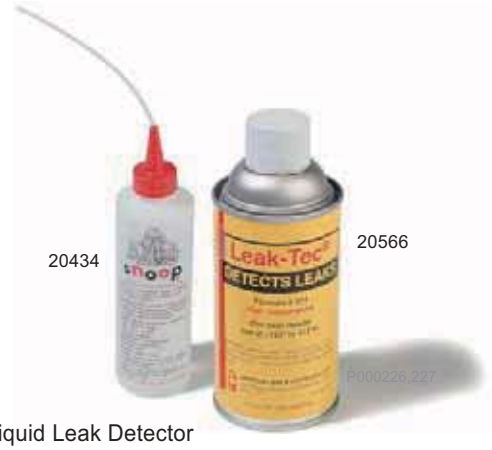
- Easy set-up operation
- NIST traceable

Humonics digital liquid flowmeters replace the tedious and time-consuming glass burette and stopwatch traditionally used to measure flow rates – a microcomputer and infrared optics are used to track a rising volume of liquid within a tube of precision-bore glass. Absolute accuracy is established by comparing the performance of the instrument to an NIST-registered burette.

MODEL	FLOW RANGE (mL/min)	RESOLUTION	CALIBRATION POINTS
1000	0.100 - 1.999	0.001	1.5, 3, 5mL/min
	2.00 - 9.99	0.001	
	10.0 - 30.0	0.1	

DESCRIPTION	CAT. NO.	PRICE
Model 1000 Liquid Flowmeter, 110VAC	55090-U	
Model 1000 Liquid Flowmeter, 220VAC [1]	55093	

[1] CE approved



Snoop Liquid Leak Detector

Also useful in bubble meters.

DESCRIPTION	CAT. NO.	PRICE
Snoop, 8 oz./475mL bottle	20434	
Snoop, 1 gallon/3.8L bottle	20640-U	

Leak-Tec Leak Detector

Will not bubble on a heated part unless there is a leak. Use at temperatures up to 210°C.

DESCRIPTION	CAT. NO.	PRICE
Leak-Tec Leak Detector, 283g pressurized can	20566	

NOTE: We do not recommend using liquid leak detectors with capillary GC systems.

GOW-MAC Gas Leak Detectors

Help you find leaks quickly – without risk of contaminating your GC system. Using liquids to detect gas leaks can be poor economy, especially in a capillary GC system. Even a small amount of liquid leak detector that seeps into a fitting, or through the septum, can damage your column or create baseline noise. GOW-MAC gas leak detectors easily and quickly pinpoint gas leaks too small to detect with soap solution.

GOW-MAC gas leak detectors operate on the same principle as a thermal conductivity detector – they respond to any gas mixture that has a thermal conductivity value different from that of air. With an intrinsically high signal-to-noise ratio, amplification provides maximum usable sensitivity: helium leaks of 1.0×10^{-5} cc/sec and refrigerant leaks of 1.0×10^{-4} cc/sec are easily detected.

Easy to Operate - GOW-MAC gas leak detectors can be operated with little or no training. Turn on, adjust the zero and probe for leaks. The probe is designed to reach difficult and confined locations. A HIGH/LOW switch permits you to control sensitivity for very small leaks.

Deluxe and miniature models are available. Both models include rechargeable batteries and two sensitivity ranges.

Deluxe Detector: Model 21-250 -The Deluxe Model is a sturdy addition to your lab. Free your hands to work the probe and still have easy reference to the control panel by shifting the carrying handle to a stand position. An audible tone alerts you when the probe passes over a gas leak.

Miniature Detector: Model 21-050

The Mini Model is the smallest detector of its kind, offering all of the accuracy of the larger GOW-MAC model in a convenient, lightweight instrument. Visual LED bar graph shows you when the probe passes over a leak.

Both models have a 1-year warranty from GOW-MAC.

DESCRIPTION	CAT. NO.	PRICE
GOW-MAC Gas Leak Detectors		
Deluxe Model 21-250 [1]	22409	
Mini Detector: Model 21-050		
with 110VAC/60Hz recharger	22807	
with 220VAC/50Hz recharger [2]	22808	
Carrying Case for Mini Detector	22809	

[1] Does not have a CE mark.

[2] CE approved.

NOTE: These GOW-MAC gas leak detectors are not intended for determining leaks of combustible gases. They are intended for nonspecific applications, to determine low level leaks of gases with thermal conductivity different from that of air. We recommend a combustible gas detector for monitoring combustible gases in possibly hazardous situations.

P000330

SPECIFICATIONS: DELUXE DETECTOR

Output: Audio. Frequency changes with concentration; adjustable threshold and speaker volume.
Range: High: x1; Low: x100
Dimensions: 10 3/4 x 8 1/4 x 3 5/8" (27 x 21 x 9cm) (excluding handle)
Weight: 9lb/4.1kg (shipping wt. : 12lb/5.4kg)
Power: Rechargeable lead/acid gel battery, 8V, selectable 110/220VAC, 50/60 Hz

SPECIFICATIONS: MINIATURE DETECTOR

Output: Visual LED bar graph alerts you to leaks
Range: High: x1; Low: x100
Dimensions: 3 1/4 x 1 13/16 x 5 1/4" (8 x 4.5 x 13cm)
Weight: 465g without charger
Line Voltage: Rechargeable Ni-Cd battery, 7.2V/800mAmp/hr; recharger included: 110VAC/60Hz or 220VAC/50Hz

SENSITIVITY OF GOW-MAC LEAK DETECTORS

Gas	cc/sec	feet^3/year
Argon	1.0×10^{-4}	0.110
CO_2	1.1×10^{-4}	0.123
Fluorocarbons	1.1×10^{-4}	0.123
Helium	1.0×10^{-5}	0.012
H_2/He (40:60)	1.0×10^{-5}	0.012
Refrigerants	1.0×10^{-4}	0.123