



HeliTest

C H E M

THE NEW PORTABLE **EXPLOSION PROOF**
LEAK DETECTOR FOR ALL APPLICATIONS IN THE
CHEMICAL AND PETROCHEMICAL INDUSTRY



VARIAN

QUALITY SYSTEM
ISO9001
CERTIFIED

Varian offers HeliTest CHEM, the new EXPLOSION PROOF leak detector

■ GENERAL DESCRIPTION

HeliTest CHEM is a new concept instrument, representing the state of the art in portable leak detectors for the Chemical and Petrochemical Industry: it is compact, easy to use, reliable and offers very high sensitivity and selectivity.

The HeliTest CHEM works in the “sniffing mode”, and is able to locate and measure leaks on objects pressurized with helium. The amount of helium necessary to pressurize the test object may vary, depending on the sensitivity required for each application, but in most cases a small percentage is adequate. The HeliTest CHEM is often used for detecting leaks on underground objects, such as pipes or tanks, thanks to the high permeation rate of helium, which allows leak detection without any need for digging around the area under test.

■ WHY USE HELIUM AS A TRACER GAS

- **Inert**
Helium is a non-toxic gas which does not react chemically with any other element, making it safe to use.
- **Highly penetrating**
Due to its small molecule, helium easily passes through the smallest leaks.
- **Low natural background in air**
The helium concentration in air is only 5 ppm, which allows detection of even the smallest leaks with little background interference.

■ HELITEST CHEM SAFETY CERTIFICATIONS

The HeliTest CHEM is usable in potentially explosive areas, because it is designed and built in accordance to the rules for “electrical equipment for potentially explosive atmospheres”.

It is EXPLOSION PROOF certified according to the following rules:

IEC 79 - 0, EN 50.014 -1977 + A1..A5,
CEI 31-8 (General Requirements)
IEC 79 - 1, EN 50.018 -1977 + A1..A3,
CEI 31-1 (Flameproof Enclosure “d”)



■ HELITEST CHEM BENEFITS

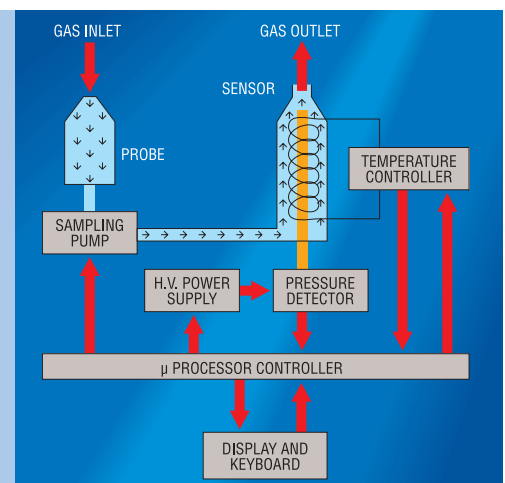
- **Sensitive and selective**
HeliTest CHEM detects leaks with high accuracy (2 ppm), and no false signals are generated due to the presence of different

gases as it often happens in common thermal conductivity leak detectors. The lowest detectable leak is 5×10^{-6} atm cc/sec of helium.

- **Battery operated**
HeliTest CHEM may be used anywhere, with no need to connect it to any power supply or portable generator. The 12 V battery is rechargeable and is an integral part of the unit.
- **Compact and portable**
HeliTest CHEM weighs only 12 kg (26.5 lbs) including the battery, and is the most compact explosion proof helium leak detector available today.
- **Easy to use**
No specific operator training is required, no tuning is needed. A signal shown on the front panel display indicates the presence of a leak .
- **Reliable, no need for maintenance**
Only battery recharging is required.
- **Autozero**
HeliTest CHEM can detect leaks even in high helium background environment by self-adjusting to the actual operating condition.
- **Fast response**
Allows fast and repetitive detection and location of leaks.
- **Automatic start-up**
When switched on, HeliTest CHEM automatically performs an autocheck cycle to ensure correct operation.

■ HELITEST CHEM PRINCIPLE OF OPERATION

The HeliTest CHEM operation is based on a new technology, called SIPD (Selective Ion Pump Detector), which provides high sensitivity and selectivity, and allows precise leak location with no uncertainty. This technology makes use of a special silica membrane, which, if heated, becomes permeable to helium, but not to other gases, because of the small size of the helium molecule. An ion pump will detect and display a signal proportional to the quantity of helium that has permeated through the membrane, and this signal will be displayed showing the helium leak rate. This system of operation is highly sensitive, due to the very low pressure in the ion pump (10^{-9} mbar), and very reliable, due to the absence of moving parts.



Where to use HeliTest CHEM

CHEMICAL PLANTS

Leak detection in chemical plants is very important to reduce pollution possibilities, to increase workers safety and to increase plant yield.

Due to the high inflammability of many of the gases used, a standard leak detector instrument is generally not recommended. Instead, HeliTest CHEM is an "EXPLOSION PROOF" certified leak detector, and can be safely used in this environment.

OIL-REFINERIES

The raw materials used in these plants and their by-products are often inflammable. The use of HeliTest CHEM, during programmed leak check maintenance intervals, is very helpful to safeguard workers and plants. The HeliTest CHEM portability and the battery operation feature make it the right choice also in the hardest working conditions.

OFF-SHORE PLATFORMS

Where everything is extreme, where workers and platform safety is top priority, HeliTest CHEM is the ideal solution.

Varian offers a truly unique, portable, battery operated and EXPLOSION PROOF leak detector.



HeliTest CHEM Specifications

Lowest detectable helium concentration:	2 ppm (parts per million)
Lowest detectable leak rate:	5 x 10 ⁻⁶ atm cc/sec
Response time:	2 seconds
Safety Certification:	EEx d IIC T5 IEC 79-0 EN 50.014-1977 + A1..A5 CEI 31-8 IEC 79-1 EN 50.018-1977 + A1..A3 CEI 31-1
Warm up time including self-check:	3 minutes (approx.)
Battery unit:	Sealed rechargeable battery
Operating conditions:	
Temperature:	-20° C to +40° C
Relative humidity:	90% maximum
Weight:	12 kg (26.5 lbs)
Size:	Diameter 255 mm (10") Height 255 mm (10")

HeliTest CHEM Ordering Information

Description	Part Number
HeliTest CHEM, explosion proof helium leak detector	969-3595
Including:	
- HeliTest CHEM basic module	
- 10 m (32') long probe	
- Battery charger, for use in safe areas	

ACCESSORIES

Description	Part Number
Capillary leak with refillable reservoir and pressure gauge (helium concentration range 20-200 ppm)	969-3540

SPARE PARTS

Description	Part Number
Probe filter	SR28-90000901
10 m (32') long probe	969-3525
Battery charger (for use in safe areas only)	SR03.649821-02

Varian Offices

AUSTRALIA – Varian Australia Pty Ltd. – 6/81 Frenchs Forest Road – Frenchs Forest NSW 2086 – Australia – Telephone: (61) 299758805 – Fax: (61) 294522600
BENELUX – Varian Vacuum Technologies – Rijksweg 269 H, – 3956 CP Leersum – The Netherlands – Telephone: (31) 343469910 – Fax: (31) 343469961
CANADA – Varian Canada Inc. – 6705 Millcreek Drive, Unit 5 – Mississauga, Ontario L5N 5R9 – Canada – Telephone: (905) 8198188 – Fax: (905) 8198348 – Toll free: 1 800 6632727
CHINA – Varian Technologies Asia, Ltd. – Rm. 2611 Concordia Plaza – 1 Science Museum Rd – Tsimshatsui East, Kowloon – Hong Kong – Telephone: (852) 26206173 – Fax: (852) 26206338
FRANCE & WALLONIE – Varian s.a. – 7, Avenue des Tropiques – Z.A. de Courtaboeuf B.P. 12 – F91941 Les Ulis Cedex - France – Telephone: (33) 1 69863884 – Fax: (33) 1 69282308
GERMANY, AUSTRIA – Varian Deutschland GmbH – Vacuum Technologies – Alsfelder Strasse 6 – Postfach 11 14 35 – 64289 Darmstadt - Germany – Telephone: (49) 6151703353 – Fax: (49) 6151703302
INDIA – Varian India Pvt. Ltd. – 101 Competent House – 7, Nangal Raya Business Centre – New Delhi 110 046 - India – Telephone: (91) 11 5548444 – Fax: (91) 11 5548445
ITALY – Varian S.p.A. – Vacuum Technologies Sales Office – Via Varian 54 – 10040 Leini (Torino) – Italy – Telephone: (39) 011 9979111 – Fax: (39) 011 9979316
JAPAN – Varian Technologies Japan – Sumitomo Shibaura Bldg. – 4-16-36 Shibaura Minato ku – Tokyo 108 – Japan – Telephone: (81) 352321211 – Fax: (81) 352321263
KOREA – Varian Technologies Korea, Ltd. – Head Office – Shinsa 2nd Bldg. 2F, 966-5 – Daechi-Dong, Kangnam-Seoul – Korea 135-280 – Telephone: (82) 234522452 – Fax: (82) 234522451
TAIWAN – Varian Technologies Asia, Ltd. – Taiwan Branch – 18F-13 No. 79, Sec. 1, Hsin Tai Wu Rd. – Hsi Chih, Taipei Hsien, Taiwan – Telephone: (886) 2 26989555 – Fax: (886) 2 26989678
U.K. & IRELAND – Varian Ltd. – 28 Manor Road – Walton on Thames – Surrey KT12 2QF – U.K. – Telephone: (44) 1932 898000 – Fax: (44) 1932 228769
USA, SOUTH & CENTRAL AMERICA – Varian Vacuum Technologies – 121 Hartwell Avenue – Lexington, MA 02421 – USA – Telephone: (781) 8617200 – Fax: (781) 8605437 – Toll free: 1 800 8827426
OTHER COUNTRIES – Varian S.p.A. – Vacuum Technologies Sales Office – Via Varian 54 – 10040 Leini (Torino) – Italy – Telephone: (39) 011 9979111 – Fax: (39) 011 9979316



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