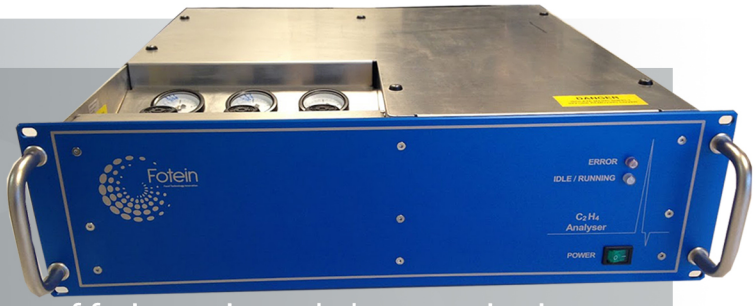
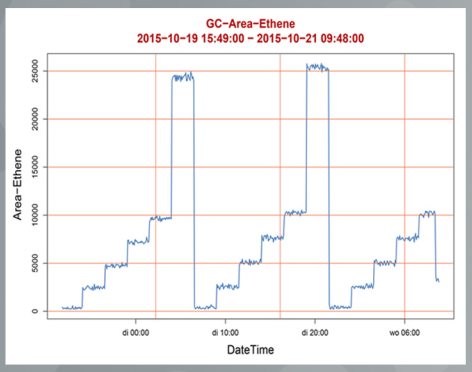
Ethylene monitoring for kiwi storage applications



Semi-continuous monitoring of ethylene in fruit stores

Riping of fruit, certainly kiwi, is triggered by the presence of ethylene (C_2H_4). Effects are already clear at minute concentrations, < 20 ppb. Long-term storage of fruit requires ethylene monitoring. Gas Chromatography (GC) is the only trustable technology to determin ethylene in the ppb-range.



Hydrocarbon measurements with gas chromatograph

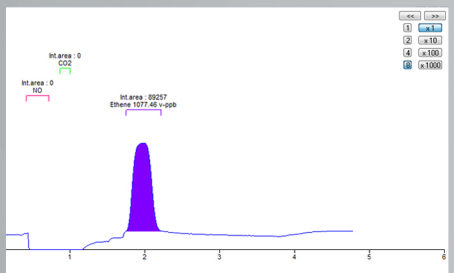
The measurement of ethylene in a gas sample from a kiwi store can be performed reliably with a gas chromatograph. A special column assures that the different components in the air will be seperated.

The Fotein GC ethylene meter is extremely specific: not many other organic molecules have a boiling point in the range of ethylene, and inorganic molecules with the same boiling point are normally not sensitive to the same detector.

Technology inside

The Fotein GC meter is a gas chromatograph with an automatic sampling loop. After injection, ethylene is separated from other compounds in the air on a special type of column.

The meter is equipped with a detector that is extremely sensitivite for ethylene, and not for other C_2 hydrocarbons.



Measurement of 0.5 ppm Ethene

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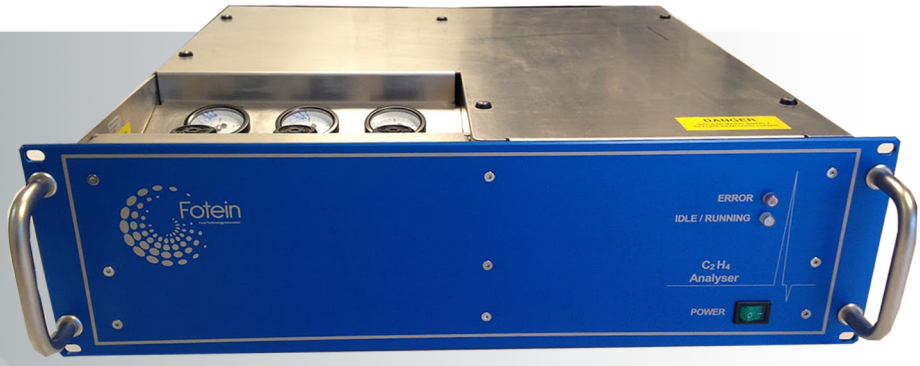

Specifications

Product code	C2H4GC1.0
Detector	10.6eV PID
Column	Stripper and analytical packed column with Hayesep D Cycle
Cycle time	Optimized for application, typically 4 minutes
Carrier gas	Nitrogen, quality 5.0, 4 bar, 20 ml/min
Range	0.005 - 100 ppmv ethylene
Dimensions	19" rack, 5 standard Height Units depth 39 cm net (W 48,3 D 43 H 22 cm) weight 19 Kg
Power demand	230 VAC (115 VAC available)
Conditions	Temperature 5 - 40 °C, humidity < 95% RH

Calibration and maintenance
Preventive maintenance is only required once a year. For good quality data it is recommended to have a regular (automatic) calibration or validation. The software has an automatic validation / calibration mode, and it is possible to use calibration gas of one concentration per component.
The expected lifetime of the analyser is 10 years. Warranty is 2 years.

Software:
The meter can be operated 'stand alone' or can be integrated in a Van Amerongen MyFruit control system, which will analyse and store data.

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