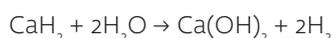


HYDROTRACER

Moisture Analyzer

Tinius Olsen introduces a moisture analyzer that will appeal to all manufacturers with moisture concerns. This new tester is less expensive, just as swift to generate a result, and as accurate as comparable heat and weigh or microwave technique-based testers. The patented method of the HydroTracer determines the absolute water content where the mass of the water is measured within the reactor.

Operation is just as simple. The sample is weighed and filled into the HydroTracer's sample tray, which is then placed in the tester's heating chamber. The heater warms the sample to a temperature chosen by the operator, and water within the sample evaporates. The heating chamber is connected with the cooled upper reactor chamber of the HydroTracer – this is where the calcium hydride reagent is placed. The volatile water rises to the upper reactor chamber and when the humid air flows over the reagent, the gaseous water reacts with calcium hydride according the following equation:



The cooled, dry air returns to the lower heating chamber and the process continues. The circulation of air through the HydroTracer is supported by natural convection, which is promoted by the unique design of the HydroTracer; even hygroscopic materials are completely dried with the analyzer. The final concentration of hydrogen in the reactor is proportional to the water content of the sample before the measurement. The whole operation process is controlled by PC-based software and the results calculated for the operator.

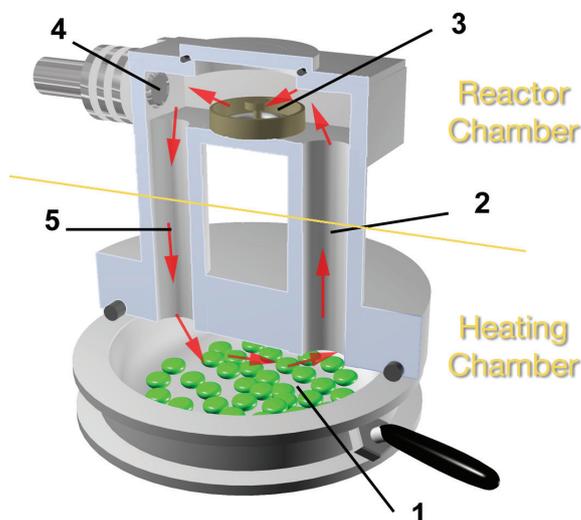
The ambient air also contributes water to the reactor atmosphere; to achieve accurate results the ambient



air humidity and density needs to be determined and 'removed from the equation'. Integrated sensors in the reactor do this. The concentration of hydrogen is measured by thermal conductivity sensors.

Chemical reactions and the reagent

Calcium hydride reacts with water to form calcium hydroxide (also called hydrated lime, or agricultural hydrate), which is a weak base and quite harmless; it also does not require any special disposal techniques. The small amount of reagent needed for the test means that the amount of hydrogen produced is small and subsequently does not pose any operational concerns.



HydroTracer principle of operation

1. Sample in removable heating tray
2. Hot humid gas rises into the reactor chamber
3. Reagent absorbs water vapour and releases hydrogen gas
4. Sensors measure the concentration of hydrogen gas
5. Cooled, dry gas descends and can absorb more water vapour

Specifications

TECHNICAL DATA

Test time	10-45 minutes
Sample weight	0.01-50g
Measuring range	0.2-25mg absolute 0.0005-5% relative
Test temperatures	50-210°C (adjustable in 1°C steps)
Reagent	CaH ₂ granules or pad (not supplied)
Ambient conditions	-10-40°C/90% rH (not condensing)
Accuracy	Measuring error < ± 2%
Resolution	± 1 ppm (0.0001%) ± 0.1-0.9mg (depends on measuring range)
Power supply	100-240VAC/1000W
Weight	6.4kg
Dimensions	290 x 180 x 260mm (HxWxD)
Interface	USB
System requirements	PC with minimum Windows® 7 SP1 or later

COMMON APPLICATIONS

- Plastics – ABS, PA 6, PA 6.6, PA 12, PAA, PAI, PBT, PC, PE, PE Talcum, PEI, PETa, PETc, PMMA, POM, PP, PS, PS expanded, PVC, TPE
- Anorganic salts
- Calcium carbonate
- Caprolactam
- Sand
- Carbon black