VELP SCIENTIFICA

LABSOLUTIONS

OXITEST

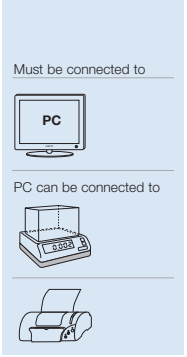
Oxidation Test Reactor

The Innovative Solution
for Oxidative Stability Studies
Directly on the Whole Sample

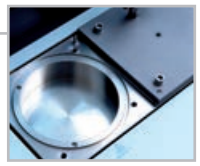
Chemical reactions occurring between atmospheric oxygen and sensitive components of raw materials or finished products are some of the most important causes of product degradation. Fat oxidation is recognised as one of the main factors affecting sample shelf-life, even for low fat products, causing product rancidity by the formation of off-flavours due to aliphatic aldehydes or other volatile compounds. Therefore, the oxidation stability is one of the most important characteristics to be evaluated during product development and control.

OXITEST Oxidation Test Reactor

The OXITEST is the perfect response for accelerated oxidation stability tests, both on raw materials and finished products, without the need for any preliminary fat separation.
It can test the oxidation stability on various sample types, being the optimal solution especially designed for R&D, Product Development and Quality Control labs in food, cosmetic and petrochemical industries.



Titanium sample holders offer excellent chemical resistance and temperature homogeneity.



Two separate titanium chambers in order to test the same sample in duplicate or different samples at the same time.

PC control for representative results
OXITEST is controlled via PC; tests are performed **directly on the whole sample** without the need for preliminary fat separation.

AOCS Official Method Cd 12c-16

The OXITEST speeds up the oxidation process because of the **two accelerating factors,** temperature and oxygen pressure, usually set at 90 °C and 6 bars, according to the most common applications. The instrument measures the absolute pressure change inside the two chambers, monitoring the oxygen uptake by reactive components in the sample and automatically generates an **IP value**.

Features and Benefits

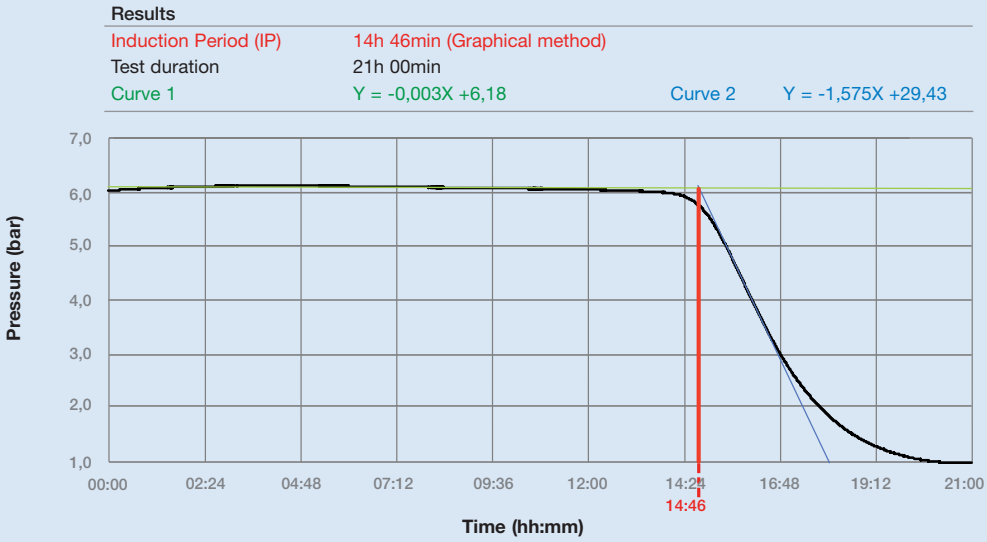
- Suitable for oxidation stability in foods, oils and fats
- Analysis on the whole sample, without preliminary fat separation
- Accelerated test, obtained in a relatively short period of time
- PC-controlled, programmable for unattended operation
- User friendly interface
- Oxidation stability without the need of expensive and environmental hazardous reagents
- Linear correlation between OXITEST and peroxide tests
- Based on ASTM D942 method

In order to obtain a visible oxidation flex, the sample tested should contain at least 4-5% of fat. When product degradation is mainly due to the loss of the aromatic components and the oxidation flex is not visible, information on the product oxidation can be achieved by combining OXITEST with the gas-chromatographic technique.

Up to **4 OXITEST units can be connected to the same PC**, remaining completely independent of each other to increase the productivity and flexibility.

Validation procedure on OXITEST for the EVALUATION OF FOOD OXIDATIVE STABILITY by using EURACHEM GUIDELINES.

OXISoft™ SOFTWARE



What is an IP?
The test allows the sample oxidation curve to be obtained, characterized by an **Induction Period (IP)**.

The Induction Period is the time required to reach the starting point of oxidation, corresponding to either a level of detectable rancidity or a sudden change in the rate of oxidation.

The longer the Induction Period, the higher the stability against oxidation over time.

The operator can create **test reports** for a single test or compare different analyses for a better interpretation of the data.

OXISoft™ is available in different languages and comes with a pre-installed library of methods related to a wide range of sample types.
The operator can use and modify them, or create his own methods. Many parameters can be investigated, including:

- **REPEATABILITY TEST**: a series of tests run on the same sample or standard to verify its IP period, to calculate accuracy and repeatability of the data.

- **FRESHNESS TEST**: to verify the quality of different lots, for example of the same raw material, and compare them. This is a valuable information if we think that the product freshness is related to the cost of raw materials.

- **FORMULAS COMPARISON**: what is required to identify the most stable formula of a finished product, under the same conditions.
By comparing the results, OXISoft™ will be able to automatically distinguish the best formula, easily recognizable by the higher IP, for R&D applications on food products.

- **PACKAGING COMPARISON**: particularly useful for testing which packaging maintains the product in the freshest condition.

- **IP DURING AGEING**: same samples are tested at different times to fix the linear equation and the decreasing of the Induction period with the going by of the time.

- **ESTIMATED SHELF LIFE TEST**: it is possible to have a prediction of oxidation stability during the shelf life. By following a dedicated procedure and testing the same product at different temperatures, in the case of a linear equation, the operator can extrapolate and estimate the oxidation stability of the sample even at room temperature.

...before the analysis
The samples are weighed in titanium sample holders and placed into the two independent titanium chambers, where temperature and oxygen pressure are automatically adjusted to by the software according to the entered data.

...during the analysis
In the main window the user can continuously check the instrument status, pressure and the temperature on the right side of the page.
Up to 4 OXITEST can be managed by the same software at the same time, for the maximum productivity.
The real time graph constantly shows the progress of the analysis.

...after the analysis
Once the analysis is completed, the operator will find all the test information in the main window, with graph, info about the method and results. All analysis data are stored into databases and can be exported in .xls, .txt and .csv format to PC or LIMS.
The operator can also create test reports for a single test or report a comparison between multiple analyses for a better interpretation of the data.
All the results and reports can be output to a printer or saved for GLP compliance.
Results can be output to a printer.

Fields of Application and Samples
OXITEST works directly on the whole sample without the need for preliminary fat separation, ensuring representative results on solid, semi-solid and liquid samples, raw and finished products:
Food and Feed - fresh and processed meat, nuts, chips, dessert, dried fruit, feed products, pasta sauce, mayonnaise, dressings and edible oils.
Petrochemicals - biofuels and biodiesel.
Cosmetics - creams, lotions, balm and oils.

Food, feed and beverage industry

Environmental industry

Pharmaceutical and chemical industry

INSTRUMENT	POWER SUPPLY	CODE No
OXITEST	230 V / 50-60 Hz	F30900248

OPTIONAL ACCESSORIES	CODE No
OXITEST IQ/OQ Manual	A00000242

SUPPLIED WITH

10002948 OXITEST OXISoft™ Software

10003134 USB cable

10001985* Sample holder

10001984* Spacer

* OXITEST is supplied with 6 space holders and 4 spacers.

OXITEST

Number of oxidation chambers:	2
Capacity single chamber:	up to 100 ml
Interface:	USB
Power:	900 W
Power supply:	230 V / 50-60 Hz
Weight:	16.5 Kg (36.3 lb)
Dimension (WxHxD):	365x190x485 mm (14.6x7.6x19.4 in)
PERFORMANCE	
Temperature range:	from room temp. to 110°C
Pressure range:	0 -8 bar
SAFETY	
Overpressure:	safety valve
Out-range temperature:	visual alarm
Damaged probe:	visual alarm

Constant Commitment to Knowledge Development

Your authorized agent:

Rev.00 10 2017

VELP Scientifica srl
Via Stazione 16
20865 Usmate (MB) Italy
Tel. +39 039 628811
Fax +39 039 6288120
velpitalia@velp.com
www.velp.com

VELP Scientific, Inc.
155 Keyland Court, Bohemia
NY 11716 - U.S.
Tel. +1 631 573 6002
Fax +1 631 573 6003
velpusa@velp.com
www.velp.com