

# MIKROLAB FRISENETTE

OXIPRES® - Oxidation Stability Tester

Version 3.3.0



**AOCS**  
APPROVED  
Standard procedure  
**Cd 2d-2023**





## Shelf-life tests in no time

Accelerated shelf-life tests by analyzing the oxidation stability in pure fats and oils or foods and feeds containing fats and oils - without prior sample preparation.

### Key features:

- No sample preparation or extraction necessary
- Accelerated results - fast documentation
- Low maintenance costs
- Extremely robust equipment
- Very simple and user friendly
- Well proven technology over 30 years experience
- Used by leading food companies worldwide
- Lots of accessories

MEETS ALL  
DEMANDS  
FOR TESTING!





## Procedures & applications

The OXIPRES® test method comply to the new  
**AOCS standard procedure Cd 2d-2023**  
*"Accelerated Oxidation Test for the Determination of  
the Oxidation Stability of Foods, Feeds, Fats, and Oils"*

It also meets all demands in the ASTM D525  
method for testing the stability of fats and oils.



### Usable for the following matrices:

- Encapsulated products
- Roasted peanuts
- Lubricating oil
- Potato chips
- Mayonnaise
- Milk powder
- Margarine
- Fish flour
- Cosmetics
- Clean oil
- Cookies
- Pet food



Over the years the OXIPRES® has been known as a very robust and easy to use instrument.  
The OXIPRES® uses a well-proven technique and the instrument is used today all over the world.

The instrument was originally developed in collaboration with Dupont (now IFF Nutrition Biosciences)  
that, among other big companies, are using it on a daily basis to test their products Oxidation stability.  
Since 1990, more than 300 units are sold to more than 100 companies worldwide.

## Technology

The OXIPRES® subjects the whole sample, without prior preparation, to a high oxidative-stress environment (high temperature and oxygen over-pressure) in order to evaluate, in a short period of time, the resistance to oxidation.

The oxygen uptake of the reactive components present in food-feed samples is monitored by the OXIPRES® to evaluate the oxidative stability under accelerated oxidation conditions. Experiments indicate that results from the vessel method can be correlated to organoleptic tests.

The OXIPRES® consists of a control unit, a block heater and 2 pressure vessels (bombs). The control unit houses a temperature control and the electronic system for measuring the pressure. The block heater unit has 2 positions for the pressure vessels and can be heated up to 180°C. The pressure vessel has a glass insert (the glass reaction vessel) with a volume of maximum 125 ml.

The pressure in the pressure vessel is measured electronically and the signals can be transferred to a PC using the PARALOG™ software. With the software the induction period can be determined graphically. With the PARALOG™ software it is easy to collect data from the OXIPRES®, it shows the instruments and positions, it shows curves and has automatic (or manual) IP detection.

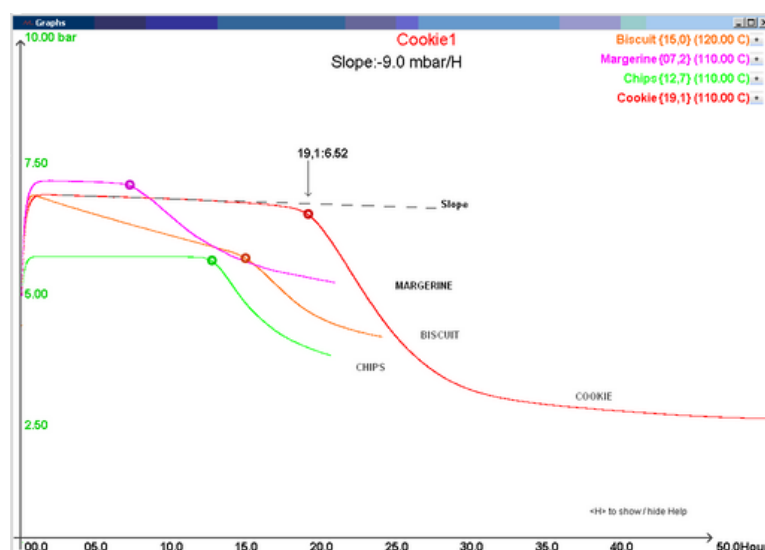
### Evaluation of the results:

As a result of the consumption of oxygen the pressure in the bombs will drop. (At the beginning the pressure will rise due to the heating). The signals from the pressure transducers are shown on the displays. The signals are recorded as a function of time. The samples are characterized by the induction period.

### The induction period (IP) can be found as follows:

Draw the tangents T1 and T2 to the curve. The time from START to the intersection is the IP. The START is when the pressure vessel is placed in the block heater.

The induction period will then be the time elapsed between placing the pressure vessel in the block heater and the break-point at a given temperature (e.g. 80°C).





## Specifications

Up to 9 OXIPRES® instruments can be handled by the software, which means that up to 18 pressure vessels can be run simultaneously. With multiple instruments you will also be able to run samples at individual temperatures. The OXIPRES® also has an optional volatile-trap function for further GC-MS analysis.



**The procedure for the OXIPRES® is very simple:**

- Turn on the block heater
- Weight the sample in the glass reaction vessel
- Place the glass reaction vessel in the pressure vessel
- Flush with oxygen and apply pressure
- Place the bomb in the heater block
- Start the test



### SPECIFICATIONS:

- Voltage: 230/115 V AC (switchable)
- Power consumption: (1 block heater) 4 A (8 A)
- Space: Approx. 600 mm table length (excl. PC)
- Sample volume: max. 125 ml. (The sample should normally contain 3-5 g fat).
- Working pressure: Max. 10 bar (1 MPa)
- Recommended pressure: 5 bar
- Working temperature: ambient-180 °C
- Recommended temperature: 90 °C
- Signal output: 0 - 2,5 (5) V FS
- Footprint (2/4/6 pos.): 30 x 35 cm / 30 x 70 cm / 30 x 105 cm

The OXIPRES® is sold complete with a 2 position heater block unit, control box unit, 2 pressure vessels and some accessories. A lot of accessories are available for the OXIPRES®, see the next pages.

Contact Mikrolab - Frisenette A/S for more information about ordering an OXIPRES®



## Accessories

Available for the OXIPRES®



**Calibration kit** for calibrating pressure and temperature.

The kit contains: 1 pressure gauge, 1 multimeter, 1 set of resistors, 1 set of test leads, 1 trimmer, 1 mini screwdriver.

**Ordering:**

ML3047327 Calibration kit

**Filling station** with safety valve and table mounting bracket for easier filling of the pressure vessels. The filling station is connected to the oxygen supply with the enclosed filling tube (ML 3047375). The filling tubes for the pressure vessels are connected to the pressure vessels and filling station with quick connect fittings. The filling station is available with 2 or 6 positions.

**Ordering:**

ML3047371 6-position filling station

ML3047374 Filling tube (station to vessel)

ML3047375 Filling tube (supply to station)



**Charcoal trap** and **coupling** for pressure vessel for catching (trapping) the odours when the pressure vessel is vented.

**Ordering:**

ML3047347 Coupling for odour trap

ML3047348 Odour trap



## Accessories

Available for the OXIPRES®



**Top Holder** for mounting on top of the oxipress. A practical device to hold the pressure vessels. Very easy to install.

**Ordering:**

ML3047335 Top holder

**Holding rack with spanner** for easier tightening of the pressure vessel. The spanner can only be used for pressure vessels with holes. Pressure vessels without holes can be modified (ask for price). The holding rack has holder for spanner, odour trap and suction lifter.

**Ordering:**

ML3047376 Holding rack with spanner



**Aluminium rack** for 6 glass reaction vessels.

**Ordering:**

ML3047386 Rack for reaction vessels

Mikrolab - Frisenette A/S is a supplier of laboratory equipment, everything from basic laboratory equipment to consumables, laboratory accessories, solvents, standards and chemicals.

Mikrolab adds value to the products we deliver using our expertise and experience. We understand the challenges and tasks our customers have in everyday life. Everyone in the sales department is laboratory trained or has a higher technical education. We are a company where the customer is in focus, and all employees have customer service as the highest priority.

Contact us and we will find a solution together.

## – Your laboratory, our technology



@Mikrolab - Frisenette A/S



@Mikrolab - Frisenette A/S

**MIKROLAB**  
**FRISENETTE**

Mikrolab - Frisenette A/S  
Jens Juuls Vej 20  
DK-8260 Viby J

Mail: [ml@mikrolab.dk](mailto:ml@mikrolab.dk)  
Tlf: +45 86 29 61 11

[mikrolab.dk](http://mikrolab.dk) 

