Fluoralys Cosmetics

CHAUVIN ARNOUX
SPECTRALYS

# The Quality Criteria Analyzer for Cosmetic Products


NEW

## Creams, oils, herbal extracts, formulations...

*Liquids, emulsions, powders, solids.*

- **1 min** to measure all your products' quality criteria
- Quantify the oxidation rate of oils and formulas
- Qualify the quality of raw materials
- **Less than 1 day** to anticipate the aging speeds of your formulations

*Measure up*

# Spectralys, quality footprint in 1 flash!

Founded in 2008, **Spectralys** is developing mold-breaking technology based on the **natural fluorescence of agro-industrial products** for quality control throughout the manufacturing process, from the inputs to the outputs.

The analyses proposed by Spectralys are performed in real time in the laboratory or on the production site and do not require any prior preparation of the sample.

They help save considerable time and money compared with the traditional laboratory analysis methods which take much longer and are more difficult to set up. They also facilitate steering of the industrial manufacturing processes to optimize them, while also improving traceability and consistency of the raw materials and finished products.

In 2018, **Spectralys** joined the **Chauvin Arnoux Group** with the aim of industrializing its solutions on the agri-food markets (cereals, fried products, dairy products, oils, etc.), water (drinking water, recycled water, waste water and treated water, etc.) and cosmetics (vegetable raw materials, oils, formulas and creams),

## Technology

**Fluorescence technology,** which has been used for about thirty years in the biological and medical fields, has now been made available to the agri-food sector thanks to Spectralys.

This highly sensitive and accurate technology helps to reveal the impact of environmental factors (climate), genetic factors (variety), process parameters (temperature, pressure, oxidation) and aging (storage conditions, including packaging and modified atmosphere) on the physicochemical composition of the products. Instead of simple quality control, the challenge is to anticipate, understand and correct quality problems:

- **Impact of raw material variability on the technological quality,**
- **Anticipation of the effect of aging on the appearance of defects and non-conformity.**
- **• Adjustment of the process parameters to ensure consistency of the product and compliance with the regulations.**

This technology, protected by 9 patents, is integrated in our Cerealys, Amaltheys, Fluoralys, Aqualys and Fluoralys Cosmetics analyzers.

## Applications

- **Cereals:** inspection of the grain and anticipation of the flour's quality criteria.
- **Dairy products:** checking of the milk and whey inputs and the quality of the proteins and fats in the finished products; steering of the processes to ensure good consistency and conformity of the nutritional and regulatory quality of the products (protein score, protein denaturation, solubility, etc.).
- **Products cooked at high temperature** (cooking and roasting): checking of acrylamide levels to ensure compliance with the new regulations.
- **Water** : in-line testing and analysis of water quality (TOC and COD), identification of material losses (proteins, fats, sugars, etc.)
- **Cosmetic products:** checking of the products' oxidative status and anticipation of oxidative stress resistance (stability index in 5h)

## Advantages

- Product quality measurement in real time without prior preparation of the sample
- Saves time and money
- Inspection of the input and output products throughout the process
- Guaranteed compliance with your customers' specifications
- Total traceability
- Recycling of raw materials depending on their technological quality
- Anticipation of non-conformity during product aging
- Control of the processes to optimize the treatment products and save on washing water
- Control of recycling of process and rain water
- Identification of the origin of material losses in waste water

## Different methods of use

- 1/ Analysis of the spectral fingerprint alone to assess variability of the products: an alert indicates products outside the confidence interval and therefore requiring particular attention.
- 2/ Construction of a calibration enabling the extraction of the information which is correlated to the quality criterion to be measured. The quick alternative measurement method is slowly replacing measurement in the laboratory but remains subject to surveillance.
- 3/ Promotion of "gentle" processes which respect the product's nature by measuring naturality or authenticity.
- 4/ Very early measurement of the impact of aging on the product's stability and its oxidation risk.

# The analyzer for raw materials, oils, creams and water, designed for R&D laboratories

The **fluorescence** method does not require any preliminary preparation of the sample.
The calibrations are built to meet the analysis and quality control requirements.

## Fluorescence technology

Disruptive technology 100 times more sensitive than infrared for qualifying micro-ingredients or product changes

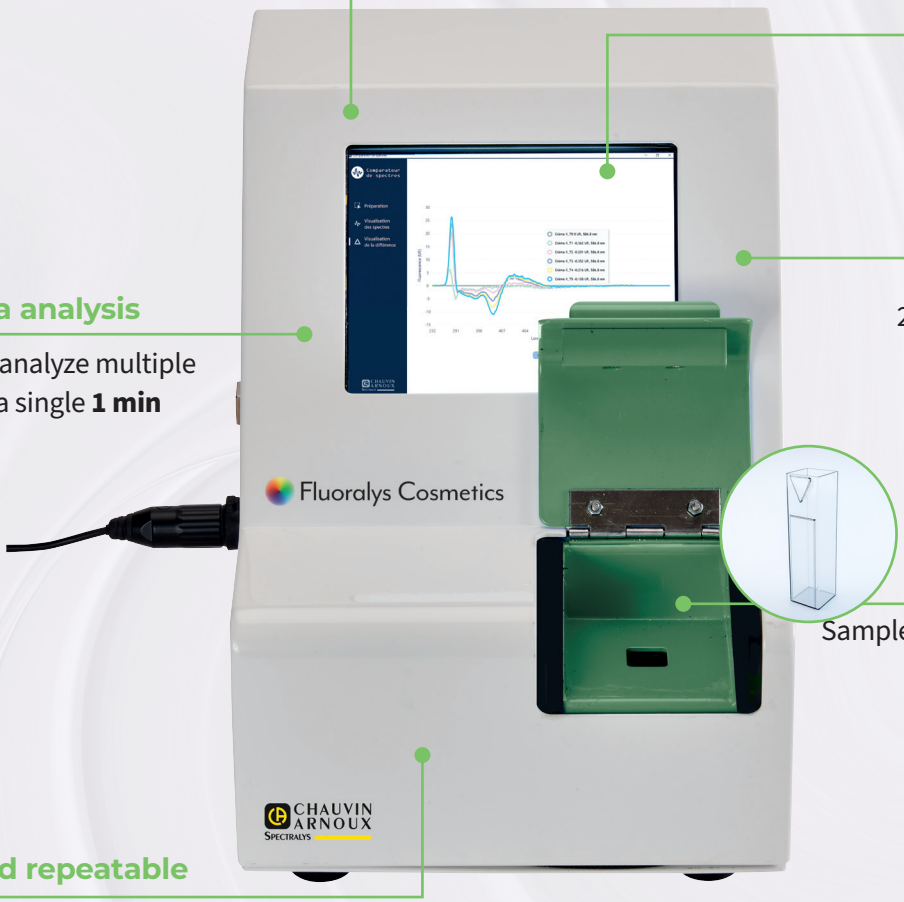
## Color touch screen

## Easy to transport

Dimensions:
280 (H) x 220 (L) x 285 (D) mm

## Multi-criteria analysis

It is possible to analyze multiple quality criteria a single **1 min** measurement




## Simple analysis

Sample without preparation thanks to the kit provided

## Accurate and repeatable

Measurement protocols and models are optimized to ensure maximum precision and repeatability

## Spectral display & comparison software*

*optional

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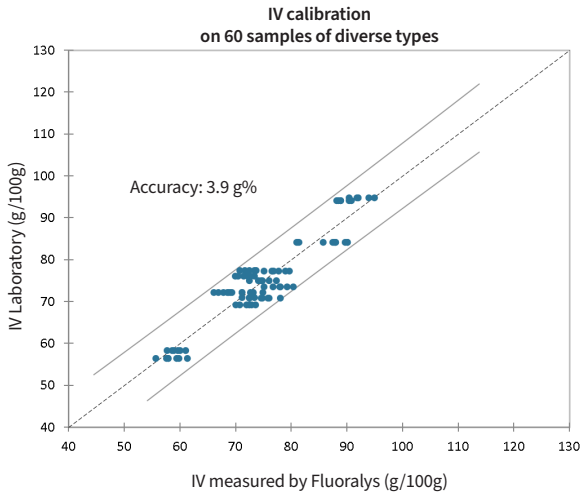
# Quantify the oxidation of your oils and formulas in just 1 minute

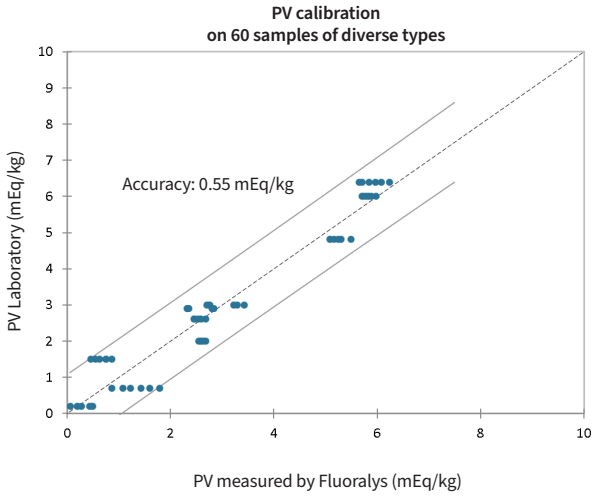
The peroxide value (PV) and iodine value (IV) with a single flash

## Measurement protocol

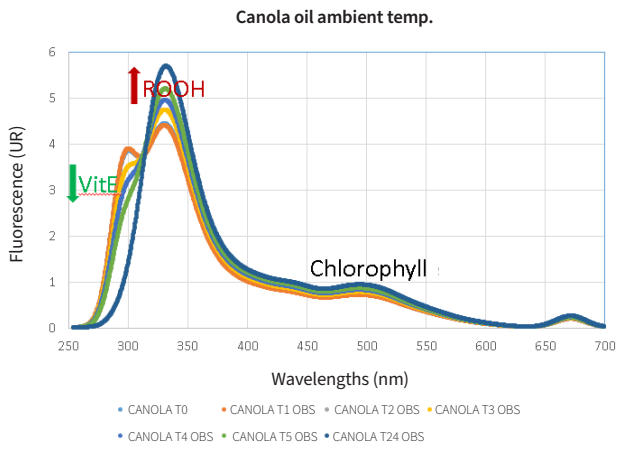
- Measure in a dish in 1 minute: oils, formulas containing oils, creams
- Construct your calibration using the self-calibration software.
- Measure the quality of the oil fraction as many times as necessary for total control over its level of oxidation

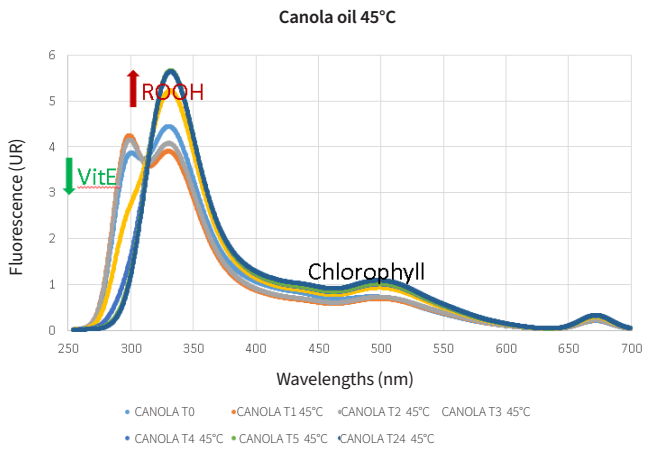
Thanks to the self-calibration software, analyze your oils and/or formulas, integrate the PV and IV reference values and start calibration. The bias error is similar to the error in the reference method.




## Example with canola oil stored for 5h at ambient temp. and 45°C

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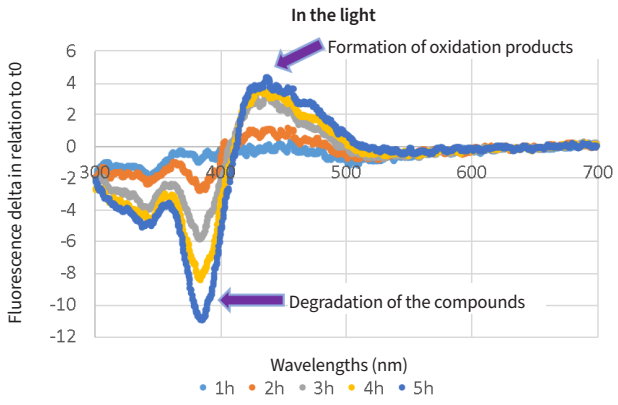
# Anticipate the rate at which your formulas age

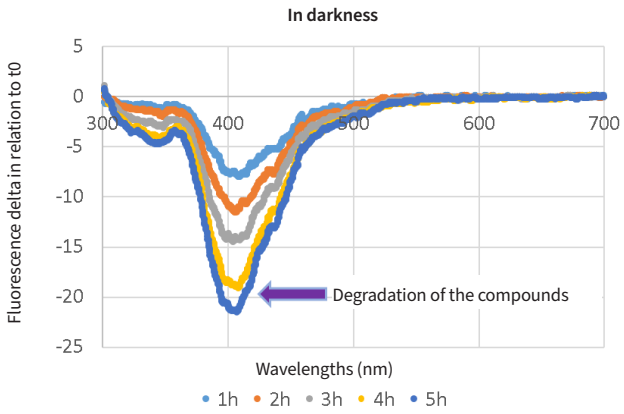
## The stability index after just 5 hours

### Measurement protocol

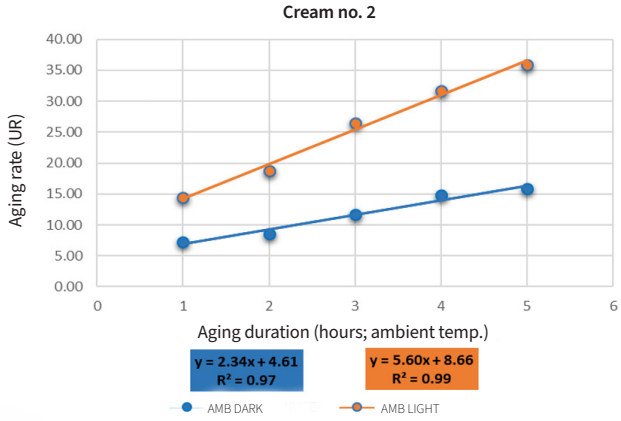
- Measure at t0 in a dish in 1 minute: ingredients, formulas or creams
- Place the dish in the light or darkness at ambient temperature, 4°C or 45°C
- Measure your samples at t5 (5h) or every hour up to 5h for kinetics

Using the software for viewing the spectra of your formulas, observe the cascade reaction involved during aging.




Using the SI "Stability Index" template and the SI calculation module, quantify the rate at which your formulas age.

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# Check the conformity of your raw materials

## Ensure consistent quality for your products

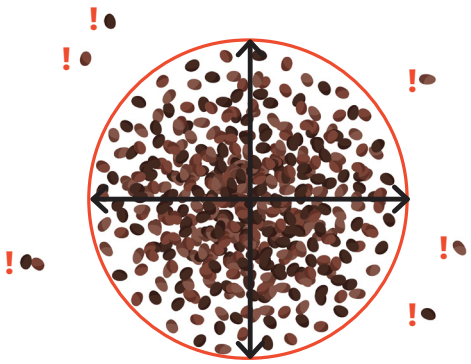
### Measurement protocol

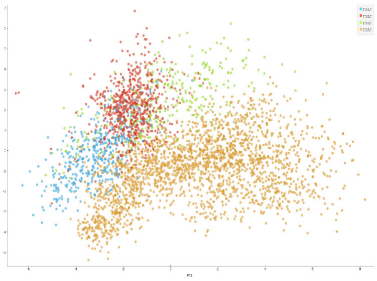
- Each ingredient (liquid, solid, cream, powder) is placed in a dish to measure its natural fluorescence in 1 minute.
- Also measure the formulated blend to assess production consistency.
- Adopt tolerance thresholds for the variability of your products for a sustained quality approach.

Using our spectral comparison algorithm, assess the variability of your raw materials and formulas.

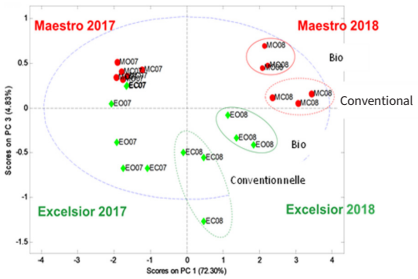
Once the tolerance threshold has been defined, an alert lets you accept or reject the product.

### Example involving the variability of vegetable products according to the year, variety and cultivation method





Analysis of the main constituents of soft wheat according to the year

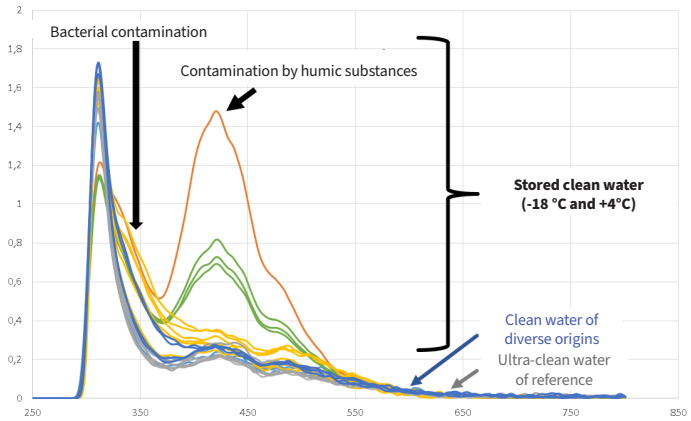



Analysis of the main constituents of carrots according to sthe variety, the year and the use of organic or conventional cultivation methods

Guarantee of consistency of the raw materials, control of the supplies and assessment of the impact of an atypical raw material.

Powerful continuous improvement tool for understanding and controlling quality.

### Example involving the variability of water quality according to its origin and storage conditions

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# Spectralys' range: real-time measurement of your products' technological, nutritional and health qualities

**CEREALYS range,** adapted to the cereal market. This is the result of close collaboration with major French cooperatives and laboratories.

cerealys1 cerealys2

**AMALTHEYS,** an analyzer dedicated to 3 sectors: cheeses, milk ingredients and infant milk formulas.

Amaltheys

**FLUORALYS,** for manufactured products : crisps, fried products, juice…

Fluoralys

**AQUALYS,** for water control At-line and On-line.

AQUALYS

**FLUORALYS COSMETICS,** the quality criteria analyzer for cosmetic products: creams, oils, herbal extracts, formulations,…

Fluoralys Cosmetics

# Our commitments and references

**Spectralys** is committed to building lasting trust with its customers by constantly listening to their needs.

Quality measurement is the basis for Spectralys's commitment and technological development to serve its customers.

With our new **Fluoralys Cosmetics** analyzer and our innovative Fluorescence technology, we are now extending our scope to cover cosmetics as well.

## Contact


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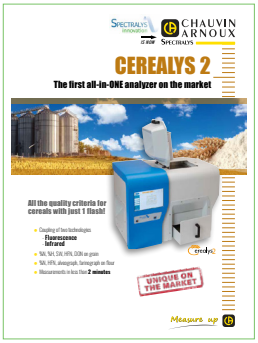


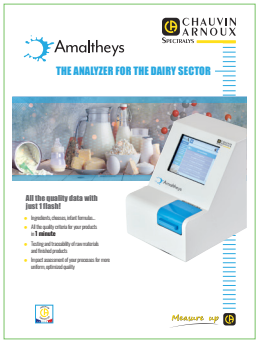



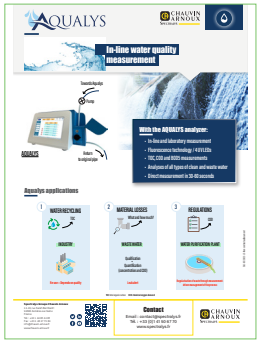




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