

PRECISION AND SIMPLICITY: **FLASH 2**  
THE EVOLUTION  
OF AUTOMATIC  
TITRATION



# STEROGLASS AND TITRATION

Automatic titrators play a crucial role in the lab, serving as essential analytical tools to ensure product quality, safety, and regulatory compliance of strict standards as well as keeping consistent product characteristics.

For over 20 years, Steroglass® has been a leader in the production of reliable and efficient automatic titrators. Our expertise in research and development, combined with high-quality manufacturing and dedicated after-sales support, has always been a hallmark of our company.

With **Flash2**, the fifth generation of titrators made by Steroglass®, we have made a cutting-edge upgrading in terms of **innovative solutions designed to meet the needs of the oenological, food, environmental, and chemical industries.**



FLASH2  
AUTOMATIC TITRATOR

**Flash2** is ideal for performing a wide range of titrations with ease and precision, including:

- pH
- Titrable Acidity
- Buffer capacity
- Sulfites
- Chlorides
- Ascorbic Acid (Vitamin C)
- Peroxides
- Conductivity
- Alkalinity
- Hardness
- COD
- TAN etc..



Flash 2  
AUTOMATIC TITRATOR



Flash 2



# LIMITS OF MANUAL ANALYSIS

**Titration is a crucial analytical technique for the quantitative determination of a specific substance (analyte) dissolved in a sample.**

The titration method depends on the analyte, the titrant, and the type of reaction that occurs between them (acid-base, redox, complexometric, argentometric, etc.). Measuring the volume of the titrant dispensed allows the calculation of the analyte content according to the stoichiometry of the chemical reaction.

Historically, analyses were performed manually using glass burettes. Today, automated titrators provide significant improvements in accuracy, repeatability, and productivity!

Manual processes can be affected by several factors, leading to unreliable results such as errors of calculation and transcription, just to name a few.

**Automation simplifies all the phases of titration**, such as adding auxiliary reagents and titrant, monitoring the reaction, calculating and storing measured values. Greater precision, fewer reworks, material savings, and improved productivity are ensured!



FLASH<sup>2</sup>  
AUTOMATIC TITRATOR



**THE MANUAL  
ROUTINE**

# ADVANTAGES OF AUTOMATIC TITRATION

- Ease of use with pre-installed methods and the possibility to add new ones without purchasing any additional application packages
- Automatic control during all the stages of analysis and saving of the titration graph
- Time reduction of analysis and sample preparation by up to 90% compared to manual methods
- Full automation of analysis thanks to automatic sampling, degassing and auto-levelling systems
- High reproducibility, eliminating operator-related errors
- Operator safety, avoiding contact with aggressive chemical reagents
- Complete connectivity and data traceability
- Upgradable instrument, allowing enhancements at any time
- Sustainability, thanks to reduced reagent use and complete elimination of disposable plastic consumables



# KEY FEATURES

## Compact design and ease of use

Flash2 is an ultra-compact instrument, ideal for saving laboratory space. Its multifunctional graphic display guides the user through every phase of programming, analysis and data interpretation, ensuring an easy and accurate titration process.





## Fully Automated Titration Process

Flash2 comes with precision **burettes**, up to two, for titrant dispensing. It also features **peristaltic pumps**, up to three, to dispense auxiliary reagents, if required for certain analyses.

The **AS Plus Autosampler**, available in 14, 18, and 30 positions, enables full automated titration process in every phase of the analysis.

## Connectivity and GLP Compliance

Automated data is made possible by means of the dedicated Flash2Data software or direct LIMS connection. A comprehensive handling of results as well as the possibility to add up to eight secondary users and one primary administrator, are ensured.

## Low maintenance, maximum reliability

Flash2 is designed to obtain high performance and utmost reliability, minimizing technical assistance. High-quality components and an intuitive system allow continuous and precise operations avoiding severe failures.

## Operator safety

Long and repetitive analyses, as well as contact with toxic chemicals, pose significant safety risks, especially when dealing with hazardous reagents. Flash2 supports operators - even with minimal experience - in order to guarantee risk-free analyses.



# WIDE RANGE OF TITRATIONS

Flash2 Automatic Titrator is designed to perform a number of titrations in oenology, food, environmental, chemical, and galvanic industries with ease and precision.



## ENOLOGICAL ANALYSES

### WINES AND MUSTS

Automatic Titrators, indispensable tools for wine-makers, enable accurate measurement of **pH, Titrable Acidity, and Free and Total SO<sub>2</sub>**-key parameters influencing taste, mouthfeel, preservation, and stability over time. These analyses help optimize wine process, from deciding the harvest time to bottling so that the best possible wine quality can be obtained.



FLASH2  
AUTOMATIC TITRATOR





## FOOD ANALYSES

### MILK AND DAIRY PRODUCTS

**Acidity:** provides key information on milk quality to ensure freshness, process quality control, and regulatory compliance for consumer safety.

**Chlorides:** indicate potential anomalies in milk and assess desired salinity levels, following official methods such as Mohr.

Regular analyses of acidity and chlorides in milk help to ensure a safe and high-quality product, supporting producers in maintaining high standards and meeting consumer expectations.

### JUICES, SAUCES, PRESERVES, HONEY AND BAKED GOODS

**Acidity:** ensures safety, stability and taste.

**Chlorides:** accurate salt determination is crucial for providing correct nutritional information on food labels, ensuring compliance with labelling regulations. Also chlorides measurement allows better control of the ingredients optimising recipes, processes and degree of saltiness.

**Vitamin C (Ascorbic Acid):** preserves nutritional values and freshness, protecting against oxidative damage.

### SOLID FOOD MATRICES

**Sulfites:** determining sulphites correctly and quickly helps to improve product quality, protect consumer health and ensure compliance with international regulations.

### EDIBLE OILS

**Acidity and Peroxides:** crucial to ensure the oil retains its organoleptic characteristics (taste, smell, colour) and stability over time, complying with quality standards that protect consumers and the food industry.

### FEED AND FORAGE

**Nitrogen and Proteins (Kjeldahl method):** they ensure the nutritional quality and efficacy of animal feed and forage: adequate nutritional intake, safety and high quality as well as cost and productivity optimization.



## ENVIRONMENT ANALYSES

### WATERS

The analysis of parameters such as **Conductivity, pH, TOC** (total organic carbon), COD (chemical oxygen demand), **Alkalinity, and Hardness (ISE)** of water (drinking, wastewater, process, etc.) is essential to protect public health, the environment and to improve efficiency of industrial processes.

## CHEMICAL AND GALVANIC ANALYSES

Acid-base, **TAN** (Total Acid Number) and **TBN** (Total Base Number) titrations, determinations of **Hydrogen Peroxide, Active Chlorine, Iron, Soda, Potash** and other substances in chemistry and electroplating are essential for verification and quality control of production processes and finished products.





# TECHNICAL SPECIFICATIONS



<b>Dimensions</b>	25.5 x 20.5 x 44 cm
<b>Weight</b>	~ 10Kg
<b>Power Supply</b>	230 Vac 50Hz, 115 Vac 60Hz
<b>Display</b>	7-inch high-brightness RGB touchscreen
<b>RGB LED</b>	4 colours for instrument status (standby, analysis in progress, error, result)
<b>Burettes</b>	up to 2, stepper motor, resolution > 1.5 million steps
<b>Three-way valve for burette</b>	titrant inlet, titrant outlet, syringe connection.
<b>Syringes</b>	Interchangeable (5-10-25ml)
<b>Peristaltic Pumps</b>	up to 2, 0.85 ml/sec flow rate + 1 for AS Plus auto-sampler
<b>Electrode channels</b>	3 (2 pH/mV and 1 $\mu$ A)
<b>Peripheral connections</b>	RS232 for up to 3 devices (printer, balance, barcode scanner, conductivity meter)
<b>Additional ports</b>	3 USB, 1 Aux connector
<b>Languages</b>	italian, english, french, spanish, german, portuguese
<b>Methods</b>	internal memory for 30 user-editable methods, import/export via USB
<b>Database memory</b>	up to 300 results, calibrations, titrant concentrations, factors, blanks, electrodes, pH buffers
<b>Software</b>	Flash2Data for result handling, sample input, remote analysis control
<b>Data export</b>	USB (.csv file), FLASH2DATA software, LIMS or printer
<b>User management</b>	two levels - 8 secondary users + one administrator
<b>Sampling system</b>	Single analysis stand or AS PLUS auto-sampler with 18 positions (100 ml beakers), 14 positions (150 ml beakers), or 30 positions (25 ml beakers)





COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
ISO 9001

Steroglass® has been one of the leading companies in the scientific field for its remarkable expertise and technical application assistance as well as its specific and unique range of products.

We aim to design, develop, produce and trade innovative and high quality products in order to provide our customers with best possible solutions required by the market.

## CERTIFICATED TECHNICAL ASSISTANCE

Our experience  
at your disposal

TECHNICAL/ANALYTICAL ADVICE  
TECHNICAL MAINTENANCE CONTRACTS  
REPAIR/SETTING/CALIBRATION

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