

YMÉLIA · PATENTED TECHNOLOGY

Pervélys™

Simultaneous management of dissolved CO₂ and O₂

Unmatched precision, repeatability and flexibility.

YMÉLIA PATENTS

SIMULTANEOUS CO₂ & O₂

Why is CO₂ critical?

Carbon dioxide is an essential organoleptic parameter. Its level determines the perceived freshness, mouthfeel and shelf life. A wine over-saturated with CO₂ tastes aggressive; too low and it seems flat and oxidised.

0,4–2,5g/l CO₂

Still wines

2,5–10,0g/l CO₂

Sparkling wines

Key issues: batch-to-batch consistency, specification compliance, storage stability, isobarometric filling compatibility.

Why is O₂ critical?

Dissolved oxygen is wine's main enemy during bottling. Each additional mg/l accelerates premature ageing and alters fruity aromas.

< 0,1

mg/l

Premium target

0,1–0,5

mg/l

Good control

> 1

mg/l

Alteration risk

Sources of oxygen pickup: filtration, pumping, transfers, CO₂ degassing, dissolution from ambient air.



The challenge: managing CO₂ and O₂ simultaneously, in a single operation

Conventional technologies act on only one parameter. Ymélia developed Pervélys™, the first technology to simultaneously adjust CO₂ and O₂ via a membrane contactor. One unit, two parameters controlled.

Since 2013, Ymélia has offered a new way to manage dissolved gases in wine with Pervélys™.

15

ANS

of expertise

> 50

UNITÉS

in operation (2026)

→ Precise and secure
dissolved gas management

→ Extended shelf life of wines

→ Apport de « **freshness** » to wines



Pervélys™ 100

Unité standalone — installation en cave

143 m² membrane · Up to 10,000 l/h*

The membrane contactor

The heart of the Pervélys™ is a hollow-fibre hydrophobic membrane contactor. Wine flows on the **shell side** (outside the fibres) while the sweep gas flows on the **lumen side** (inside) in counter-current, creating a controlled gas exchange.

5-step principle

- 1 Wine on the **shell side** (outside the fibres)
- 2 Sweep gas on the **lumen side** (inside) — counter-current
- 3 Membrane **hydrophobic**: gas passage, liquid barrier
- 4 Transfer according to **Henry's law** — partial pressure gradient
- 5 Pressure + flow modulation → simultaneous CO₂ and O₂ control

Pervélys 50

70 m²

Up to 5,000 l/h*

Pervélys 100

143 m²

Up to 10,000 l/h*

Pervélys 200

286 m²

Up to 18,000 l/h*

 * According to recommendation — higher flow: **Custom Pervélys**

Automatisation & appareillage



Schneider Electric PLC

CO₂ and O₂ setpoint management, gas flow regulation, alarms and safety. 10" or 15" touchscreen.



Inline sensors

Anton Paar CO₂ sensor (±0.025 g/l) and Endress & Hauser dissolved O₂ (±0.01 mg/l). Continuous measurement at outlet.



Gas regulation

Process patented by Ymélia — reactive and precise.



Process safety

Process monitoring and wash performance — automatic alarms and shutdowns.



Traceability

Integrated WEB server — real-time production data and performance visualisation.

Performances & caractéristiques clés

±0,025
g/l CO₂

 CO₂ precision

±0,01
mg/l O₂

 O₂ precision

1 seule
opération

 Simultaneous CO₂ + O₂

100%
automatisé

No operator intervention

Instant

 inline process insertion
Immediate result at outlet


Membrane contactor service life

Automatic and proven cleaning cycles → **unmatched membrane contactor service life**, with manufacturer warranty.



Industrial field experience since 2013



Warranty on contactors

At bottling

The Pervélys™ is positioned inline, integrated into the filtration skid, just before the filler. This positioning allows intervention on dissolved gases at the last moment before packaging.

On-the-fly CO₂ adjustment

Setpoint adjustable during production according to the container (bottle, BIB or other) and specifications. No line stoppage.

Continuous O₂ reduction

Maximum protection just before bottling contact. Typical values: < 0.2 mg/l O₂ at outlet.

After tangential filtration

As a complement to tangential filtration, this positioning delivers wine prepared both in terms of filtration and dissolved gases. Whether for ensuring low oxygen content or CO₂ adjustment, this practice is increasingly sought after, especially by **bulk wine traders**.

- **Complete preparation**: filtration + dissolved gases in one step
- **SO₂ reduction** through enhanced protection against oxidation
- **Batch-to-batch consistency** regardless of ageing method
- Ideal for **bulk preparation** before dispatch

Instant carbonation

Yméla speciality: CO₂ is dissolved **instantly at the moment of filling** via Pervélys™ integrated into the isobarometric line. No more costly and time-consuming pre-carbonation tanks.

→ **Quality bubble fineness** — homogeneous membrane dissolution

Option on our filtration units

LINÉA + Pervélys™

Compact, dedicated CIP. Up to 5,000 l/h.

NEXUS + Pervélys™

Ref. Chapoutier 8,000 l/h. Pervélys 100 (143 m²).

Standalone Pervélys™

- **Independent chassis** — connection to existing line
- **Autonomous CIP** — integrated cleaning circuit
- **Compatible with all lines** — adapted to your flow and format

Real-time supervision — Dissolved O₂ curve measured on Pervélys™ installation

Dissolved O₂ Oxygen setpoint pH / CO₂ Stop causes

ymelia · WEB Supervision — Pervélys™

05/02/2026 — Local or secure VPN access



RÉFÉRENCE · PERVÉLYS™ EN LIGNE DE CONDITIONNEMENT

Perrin & Fils

Cave de Beauchene · Rhône Valley · Ymélia LINÉA + Pervélys™ unit inline

PERVÉLYS™ EN LIGNE

LINÉA + PERVÉLYS™

AVANT TIREUSE



Pervélys™ results measured in production

< 0,2

mg/l O₂

Dissolved O₂ en sortie

0,4–1,5

g/l CO₂

Adjusted to wine

Ymélia LINÉA + Pervélys™ unit integrated inline at the bottling line, just before the filler. Continuous CO₂ adjustment and O₂ reduction, with inline Anton Paar measurement.

" The Pervélys™ is essential in our operation. The wine gains shelf life and we can refresh our end-of-vintage wines by slightly increasing CO₂ dosing on whites and rosés. "

Didier Molinet · Production Manager, Perrin & Fils

RÉFÉRENCE · SITE MOBILE DE CONDITIONNEMENT

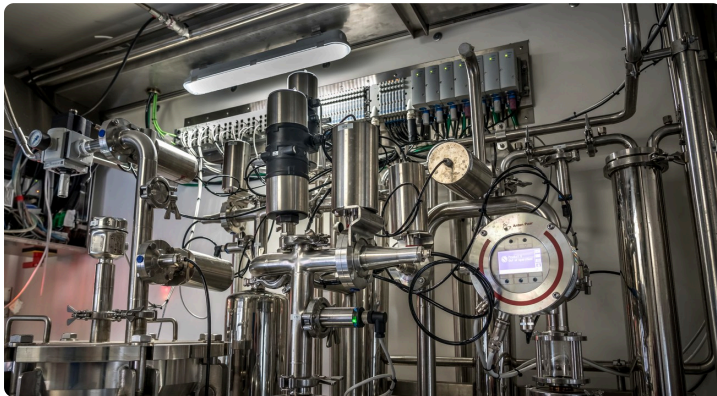
Denis Legras Conditionnement

Sparkling wine specialist · Pervélys™ integrated into final filtration

SPARKLING WINES

JUSQU'À 10 G/L CO₂

UNIQUE AU MONDE



Within the wine preparation section, the Pervélys™ integrated during final filtration allows **inline carbonation of wine up to 10 g/l dissolved CO₂**. This mobile unit enables winegrowers to target an increasingly promising new market.

10

g/l CO₂

Inline carbonation

EN LIGNE

process continu

Filtration + gas + filling

" This partnership with Ymélia enabled the development of this unique mobile unit; we are able to stabilise the wine, carbonate it inline and bottle it! "

Denis Legras · Denis Legras Bottling

Your Pervélys™ project

Every installation is sized according to your flow rate, wines and quality objectives.



Process audit — current CO₂/O₂ analysis



Sizing — module, flow, integration



Installation & mise en service — sur site



Remote maintenance included — 1st year free



After-sales service — Ymélia technical support

Contact & ressources

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