



 Amyl

 Flower & Fruit

 Thiols

 Esters

 Freshness

 LIQUORS SOLUTIONS Low SO₂

 BIO

Routing rosé
freshness



IOC

Révétons votre différence

Rosé wines and freshness

Over the past few years, rosé is the only wine colour to have achieved growth in terms of purchasing frequency, volume and value. In 2018, rosé wines already represented 28% of still wine volume, but 33% in terms of value (as a comparison, at the time, white wines made up 21% in volume and 19% in value). These trends warrant special attention being paid to production processes.

Often considered as being one of the most technical of vinification processes, developing rosé wines is subject to very specific requirements, all revolving around the notion of freshness – part and parcel of their threefold essence:

- **Visual** : aiming to achieve precise colour, despite the vulnerability factor associated with this,
- **Olfactory** : developing and preserving aromatic freshness in the form of various sensory expressions,
- **Taste** : highlighting freshness and tension, roundness and limiting bitterness.

These trends warrant special attention being paid to production processes.

Affected by the great diversity in wine varieties, the situation is made even more complex by considerations.

1

The visual approach in the rosé wine vinification process : a balancing act and priority

Major market share favours rosé wines that have a pale but marked colour, with a trend towards a hue that is increasingly less orangey or yellow. In practice, this dual result is not easy to achieve and comes up against variable raw material (wine variety, maturity, yield) and processing parameters.

Certain stages require particular attention, and this is true across the spectrum of routes:

- **High temperatures foster diffusion of the skin's coloured substances:** there is a consequent need to harvest grapes that are healthy and cool (<15°C). Moreover, low temperature makes it possible to generally slow down oxidases, which have a catastrophic effect on the vividness of colour. Where this aspect is concerned, the ability to control cool temperatures is vital.
- Be careful to **mechanical actions:** occurring during the various stages of harvesting, transport, transfer to presses, destemming and crushing, pressing cycle... , these actions affect the integrity of the grapes and foster contact between skins and juice. They play an essential role in extracting colouring material. When harvesting, double-bottom dumpsters are recommended. Pressing must be gentle and selective: use enzymes in the press, adapting the pressing programme (low pressure) to avoid extraction of colour and tannins. The press needs to be inerted when being filled.
- Adding **inactivated yeasts rich in glutathione**, in the pre-fermentation phase (grape, juice), provides extra antioxidant protection and significantly reduces yellowing. It is highly recommended for grape varieties such as grenache or cinsault, known for their low levels in glutathione and high levels of phenol acids, or for juice cold stabulation with grape lees.
- **Eliminating colour in excess** and/or responsible for producing advanced yellowing: selective and innovative fining agents are now available and can be used early on in the process, as is often recommended, or in a more curative way with wines. Some of them, derivatives of chitin, also represent alternatives to products of animal origin, and allergenic or synthetic products.
- **Fermentation** : remember that loss of colouring intensity is on average around 50% during AF, with significant variations from one tank to the next, depending on yeast, alcohol level, acidity and tannins.
- **Stabilisation** : certain end-of-process practices are harmful to the colour of rosé wines. This crucial stage could be carried out using gentler tools. In particular, the presence of SO₂ causes discolouration of anthocyanins and undervaluation of redness, which is partially reversible.

2

Maintaining aromatic freshness, across the spectrum

Pre-fermentation, antioxidant operations, as described above, are equally important for maintaining aromatic freshness.

Generally, where grapes are concerned, or during sediment cellaring expressing thiol profiles, microbiological bioprotection and/or sulphiting operations are required to limit risks of triggering fermentation too soon, as well as preventing undesirable microbial developments.

Subsequently, various fermentation routes make it possible to adapt to the harvest's aromatic potential but also achieve the sought-after sensory aim for rosé wines. Controlling aromatic orientation is now possible, not only through choice of yeast, but also via the type of nutrient and the moment it is added, which significantly affect the yeast's aromatic metabolism.

If ageing is desired, the quality of lees must be checked.

3

Freshness on the plate: between acid balance and roundness

Clearly, perception of acidity has a leading role when freshness is being defined and rebalancing should be considered. The aim is also, where rosé wines are concerned, to reduce certain aggressive sensations, without making the wine heavy. There are two approaches:

- using subtractive techniques, such as fining, which eliminate polyphenols that are overreactive at a sensory level;
- using additive techniques, which limit taste reactivity of these substances by mechanisms of interaction with molecules that «enclose» or stabilise them, such as polysaccharides for example. Formulations based on yeast manno-proteins are particularly suitable in such cases.



Amyl



Flower & Fruit



Thiols



Esters



Freshness



Low SO₂












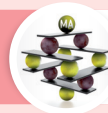
BIO

Dedicated technical routes for each product-aim, in line with my constraint and requirements

The following pages propose various routing possibilities related to the main freshness profiles favoured for rosé wines. These routing processes do not claim to cover all situations, nor need to be followed in their entirety, but they do present technical options from which winemakers can build their own processes and achieve competitive edge, in line with their constraints, requirements and aims.

Routing Rosé Freshness

The perceived quality of a rosé wine is largely based on the freshness that characterizes it on three levels: visual, aromatic and gustatory. However, various aspects of this freshness are available to the winemaker through technical choices that guarantee quality and differentiation of the rosé wines.

	 AMYL ROSÉS	 FLORA	
Harvest grape carriers / Reception of harvests	I PROTECT MY HARVEST	PROTECTION AGAINST OXIDATION TANIN CRISTALLIN™ 2 to 5 g/hL	MAXIMUM PROTECTION AGAINST OXIDATION
Reception of harvests / Press	I EXTRACT MY FULL POTENTIAL / I PREPARE MY CLARIFICATION	CLARIFICATION  MYZYM READY EXTREM™ 1 to 2 mL/hL	EXTRACTION AND REVELATION OR IN STABILATION ON BO
Stabulation and/or clarification of juices	I PROTECT MY MUST		
	I ELIMINATE OXIDISED / OXIDISABLE SUBSTANCES	INOFINE V™ 10 to 40 g/hL OR IF RIPE GRAPES AND JUICE RICH IN POLYPHENOLS  Qi FINE™ 10 to 40 g/hL OR	
Biological acidification & complexity gain	I RESTORE MY FRESHNESS BALANCE	IF INSUFFICIENT ACIDITY  IOC BOREAL™ 25 g/hL	
Rehydration of yeasts	I PROTECT MY YEASTS	IF T° < 16°C OR MUSTS < 100 NTU ACTIPROTECT ROSÉ™ 30 g/hL in rehydration (strenghtens the yeast for optimum assimilation of aroma precursors)	
Yeasting : 20 g/hL	I SELECTE THE AROMATIC POTENTIAL TO BE HIGHLIGHTED	50-80 NTU 12-15°C IOC B 2000™ Strawberry, banana Acetate esters  IOC BE FRUITS™ Strawberry, banana, without SO ₂	80-130 NTU 14-18°C
Nutrition	I GUARANTEE GOOD FERMENTATION KINETICS AND BRING OUT THE FULL AROMATIC POTENTIAL	PROMOTE THE WELLNESS OF THE YEAST AND REVEAL THE AROMAS  NATJJA™ 40 g/hL after yeasting	
Qualitative fining after AF	OXIDATION/ BITTERNESS/ COLOUR	PREVENTIVE & CURATIVE  Qi FINE™ 5 to 10 g/hL	CURATIVE  Qi No[Ox]™ 5 to 20 g/hL
Finishing wines before bottling	I ENHANCE AND PROTECT THE QUALITY OF MY WNIIE	PROTECTION AGAINST OXIDATION Flavour and colour stabilising binders  ULTIMA JUMP™ 5 to 10 g/hL OR	

- Steps common to the different styles of rosés wines
- Steps specific to the style of rosé wine evoked by this colour



AL & FLESHY FRUIT ROSÉS

THIOLS ROSÉS

ESSENTIAL ANTIOXIDANT™
5 to 10 g/hL

BIOPROTECTION AGAINST UNDESIRABLE FLORA

IOC GAÏA™
7 to 10 g/hL

OR

IOC CALYPSO™
7 to 10 g/hL

ION OF AROMATIC PRECURSORS IN PRESS BOURBES

MYZYM WHITE FRUITS™
1 to 3 g/100 kg harvest

IF FULL PROTECTION

FULLPROTECT™
30 g/hL

IF COPPER PRESENT

TRAP' METALS™
20 to 70 g/hL

STABILIZATION COLD ON /OF BOURBES

IOC CALYPSO™
7 to 10 g/hL

IF FLOATATION

Qi UP XC MES™
5 to 15 cL/hL

IOC FRESH ROSÉ™
Pineapple, flowers, spices, esters, terpenols...

60-100 NTU 15-17°C

IOC RÉVÉLATION THIOLS™
Citrus, 3MH

IOC BE THIOLS™
Citrus without SO₂

90-160 NTU ≈18°C

IOC RÉVÉLATION THIOLS™
Passion fruits, guava

FRESHNESS AND REDUCTION OF BITTERNESS

ULTIMA FRESH™
2 to 10 g/hL

OR

COATING AND SOFTNESS IN THE MOUTH

ULTIMA SOFT™
2 to 10 g/hL

Routing Low SO₂ Solutions

Knowing that freshness is the key word for rosé wines, it is all the more perilous to consider not using sulphites, thus running the risk of making the wine more vulnerable to both oxidation and microbial deterioration. Nevertheless, there are technical tools which, combined with increased care and monitoring, help to reduce the sulphite content of rosé wines.

ESTERS ROSÉS

Harvest grape carriers / Reception of harvests

I PROTECT MY HARVEST

PROTECTION AGAINST OXIDATION



FULLPROTECT™
30 g/hL



ESSENTIAL ANTI™
5 to 10 g/hL

Reception of harvests / Press

I EXTRACT MY FULL POTENTIAL / I PREPARE MY CLARIFICATION

CLARIFICATION



MYZYM READY EXTREM™
1 to 2 mL/hL

EXTRACTION AND REVELATION OF AROMAS AT PRESS OR IN STABILISATION

Stabilisation and / or clarification of juices

I PROTECT MY MUST

PROTECTION AGAINST OXIDATION



FULLPROTECT™
15 g/hL (30 g/hL if not added to the skip)

I BIOPROTECT MY MUST

I ELIMINATE OXIDISED / OXIDISABLE SUBSTANCES



Qi FINE™
10 to 40 g/hL

OR

IF FLOATATION



Qi UP XC MES™
5 to 15 cL/hL

Biological acidification & complexity gain

I RESTORE MY FRESHNESS BALANCE

IF INSUFFICIENT ACIDITY



IOC BOREAL™
25 g/hL

Rehydration of yeasts

I PROTECT MY YEASTS

IF T° < 16°C OR MUST < 100 NTU

ACTIPROTECT ROSÉ™

30 g/hL in rehydration (reinforces the yeast to optimise the assimilation of the flavour precursors)

Yeasting : 20 g/hL

I SELECTE THE AROMATIC POTENTIAL TO BE HIGHLIGHTED

50-130 NTU
12-18°C



IOC BE FRUITS™
Strawberry, banana, esters, without SO₂

In AF - co-inoculation or stabilisation

I ANTICIPATE UNWANTED EARLY MALOS (if pH sensitive)

ENSURING A FML WITH NO SMEARED NOTES OR DEVIATIONS
Protecting the purity and freshness of the fruit

EXTRAFLO™
1 g/hL

Nutrition

I GUARANTEE A GOOD FERMENTATION AND THE REVELATION OF THE AROMATIC POTENTIAL

AFTER YEASTING



NATJJA™
40 g/hL

BEGIN AF



GLUTAROM EXTRA™
20 g/hL (enrichissement)

Qualitative fining after AF

OXIDATION / BITTERNESS / COLOUR

PREVENTIVE & CURATIVE



Qi FINE™
5 to 10 g/hL

CURATIVE



Qi No[Ox]™
5 to 20 g/hL

Protection and finishing wines before bottling

I ENHANCE AND PROTECT THE QUALITY OF MY WINE

PROTECTION AGAINST OXIDATION
Flavour and colour stabilising binders



ULTIMA JUMP™
5 to 10 g/hL

- Steps common to the different styles of rosé wines
- Steps specific to the style of rosé wine evoked by this colour

 **THIOLS ROSÉS**

ANTIOXIDANT™

BIOPROTECTION AGAINST UNDESIRABLE FLORA



IOC GAÏA™
10 g/hL

OR



IOC CALYPSO™
7 to 10 g/hL

ENRICHMENT OF AROMATIC PRECURSORS IN ROSÉ WINE



MYZYM WHITE FRUITS™
1 to 3 g/100 kg of grapes

PROTECT MY AROMATIC PROFILE



IOC CALYPSO™
7 to 10 g/hL

IF COPPER IS PRESENT

TRAP'METALS™
20 to 70 g/hL

60-100 NTU
15-18°C



IOC BE THIOLS™
Fruity thiols, without production of SO₂

EXTRACT PURE FRUIT™

OR

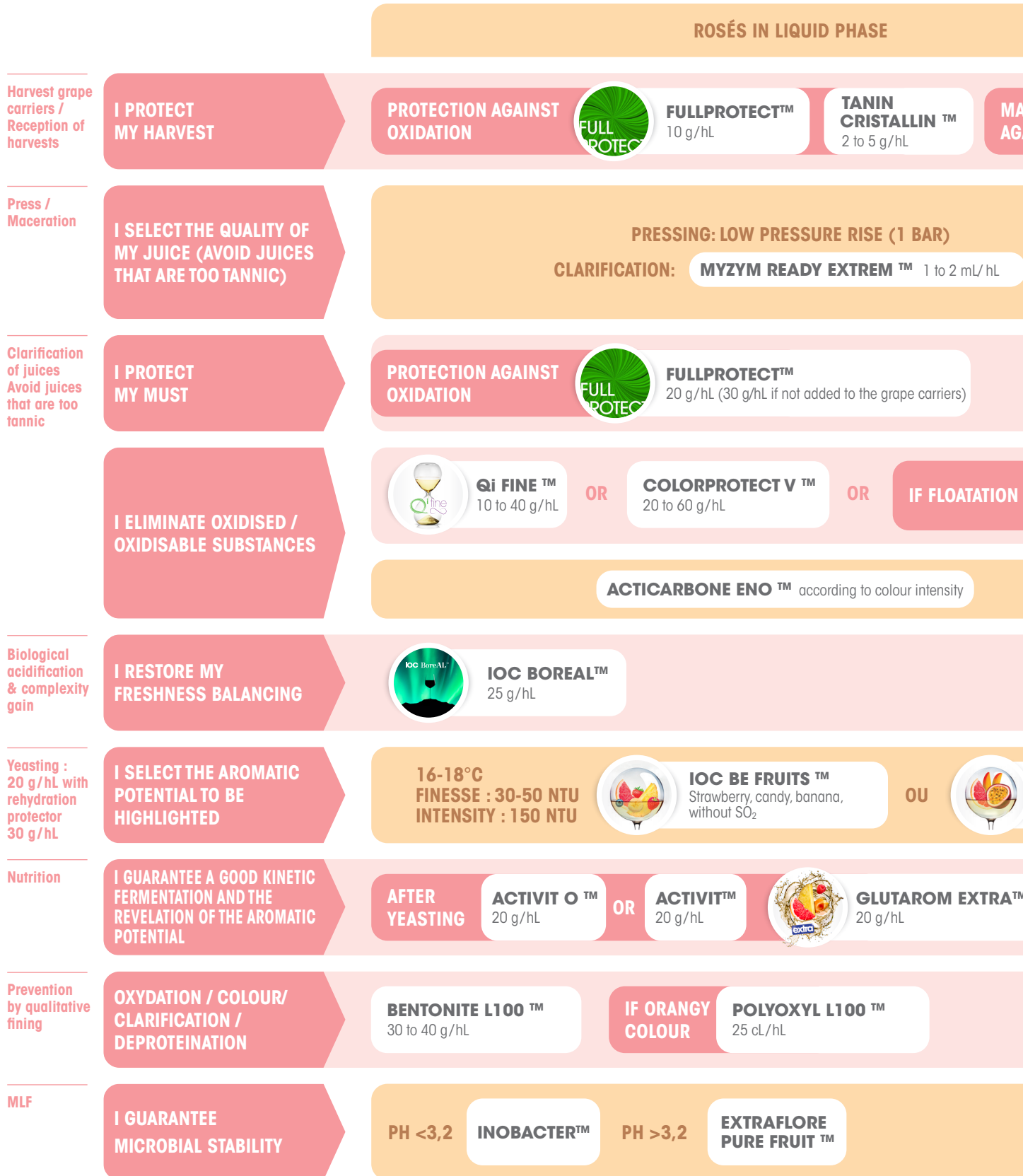
EXTRAFLORE CO'IN™
1 g/hL

EXTRA™

(addition of glutathione to the wine)

Routing Rosés as bases for sparkling wines

The production of a sparkling wine, whether rosé or not, must be motivated by the desire to create a product. It is then necessary to define the profile and make the necessary choices, as soon as the harvest is done: grape variety, level of ripeness, and to remain clear-sighted with regard to the sanitary state. Certain oenological choices are then specific to these wines intended for the secondary fermentation.



- Steps common to the different styles of rosé wines
- Steps specific to the style of rosé wine evoked by this colour



MACERATION ROSÉS

ASSEMBLY REDS

MAXIMUM PROTECTION AGAINST OXIDATION



ESSENTIAL ANTIOXIDANT™
5 to 10 g/hL

PROTECTION AGAINST UNDESIRABLE FLORA



IOC GAÏA™
7 to 10 g/hL

EXTRACTION

MYZYM MPF™
1 to 3 g/ 100 kg of grapes

TANNING

TANIN SR TERROIR™
5 g/hL

OR

VOLUTAN™
1,5 cL/hL

RUN-OFF AFTER 6 TO 24 HRS IN LINE WITH TASTING MONITORING AND COLOUR INSPECTION

SOFT EXTRACTION BY PUMPING



Qi UP XC MES™
5 to 15 cL/hL

IOC BE THIOLS™
Citrus, without SO₂

T° AF
15-18°C

IOC FRESH ROSÉ™
Pineapple, flowers, spices

T° AF
15-18°C



IOC BE FRESH™
Fresh red and black fruits, without SO₂

1/3 FERMENTATION

ACTIVIT O™
20 g/hL

OR

ACTIVIT™
20 g/hL

+ IF YAN <150 MG/L

DAP
10 to 40 g/hL

DENSITY VATTING 1010 - 1005

TO ENSURE A MLF WITHOUT SOGGY NOTES OR DEVIATIONS
Protecting the purity and freshness of the fruit










EXTRAFLORE PURE FRUIT™

+

NUTRIFLORE FML™
25 g/hL

Itinéraire BIO EU et NOP

Organic and/or NOP vinification imposes additional constraints on the rosé winemaker. Some alternatives compatible with these regulations are available.

		AMYL ROSÉS 	FLORES 
Harvest grape carriers / Reception of harvests	I PROTECT MY HARVEST	PROTECTION AGAINST OXIDATION TANIN CRISTALLIN™ 2 to 5 g/hL	MAXIMUM PROTECTION AGAINST OXIDATION
Reception of harvests / Press	I EXTRACT MY POTENTIAL / I PREPARE MY CLARIFICATION	CLARIFICATION MYZYM READY EXTREM™ 1 to 2 mL/hL	
Stabulation and /or clarification of juices	I PROTECT MY MUST		
	I ELIMINATE OXIDISES / OXYDABLE SUBSTANCES	INOFINE V™ 10 to 40 g/hL	OU IF RIPE GRAPES AND JUICE RICH IN POLYPHENOLS  Qi FINE™* 10 to 40 g/hL
Biological acidification & complexity gain	I RESTORE MY FRESHNESS BALANCING	IF INSUFFICIENT ACIDITY  IOC BOREAL™ 25 g/hL	
Rehydration of yeasts	I PROTECT MY YEASTS	IF T° < 16°C OR MUST < 100 NTU ACTIPROTECT ROSÉ™ 30 g/hL in rehydration (reinforces the yeast to optimise the assimilation of the flavour precursors)	
Yeasting : 20 g/hL	I SELECT THE AROMATIC POTENTIAL TO BE HIGHLIGHTED	50-80 NTU 12-15°C IOC B 2000™ Strawberry, banana, esters 	IOC BE FRUITS™ Strawberry, banana, without SO ₂ 80-130 NTU 14-18°C
Nutrition	I GUARANTEE A GOOD KINETIC FERMENTATION AND THE REVELATION OF THE AROMATIC POTENTIAL	PROMOTE THE WELL-BEING OF THE YEAST AND REVEAL THE AROMAS 	NATJJA™* 40 g/hL after yeasting OR
Qualitative fining after AF	OXIDATION / BITTERNESS / COLOUR	PREVENTIVE & CURATIVE  Qi FINE™* 5 to 10 g/hL	CURATIVE  Qi No[Ox]™ 5 to 20 g/hL
Finishing of wines before bottling	I ENHANCE AND PROTECT THE QUALITY OF MY WINE	PROTECTION AGAINST OXIDATION Flavour and colour stabilising binders 	ULTIMA JUMP™ 5 to 10 g/hL OR

* Cannot be used in NOP « made with... »

- Steps common to the different styles of rosé wines
- Steps specific to the style of rosé wine evoked by this colour



ORAL & FLESHY FRUIT ROSÉS

THIOLS ROSÉS

ESSENTIAL ANTIOXIDANT™
5 to 10 g/hL

BIOPROTECTION AGAINST UNDESIRABLE FLORA

IOC GAÏA™
7 to 10 g/hL

OR

IOC CALYPSO™
10 g/hL

PROTECTION AGAINST OXIDATION

FULLPROTECT™
30 g/hL

STABILIZATION COLD ON /OF BOURBES

IOC CALYPSO™
7 to 10 g/hL

OR **IF FLOTATION**

Qi UP XC MES V™*
5 to 15 cL/hL

IOC FRESH ROSÉ™
Pineapple, flowers, spices, esters, terpenols...

60-100 NTU
15-17°C

IOC RÉVÉLATION THIOLS™
Citrus, 3MH

IOC BE THIOLS™
Citrus, without SO₂

90-160 NTU
≈18°C

IOC RÉVÉLATION THIOLS™
Passion fruit, guava

LIMIT AROMA INHIBITIONS AND SULPHUROUS ODOURS

ACTIVIT NAT™
After yeasting : 20 g/hL
1/3 AF : 20 g/hL

PROTECTION AGAINST OXIDATION

ULTIMA FRESH™
2 to 10 g/hL

OR

COATING AND SOFTNESS IN THE MOUTH

ULTIMA SOFT™
2 to 10 g/hL

Some key solutions for rosé wines



FULLPROTECT™ ET GLUTAROM EXTRA™

**Protecting aromas and
colour of musts and rosé
wines**

FULLPROTECT™ is based on the synergy between the global reducing power of the inactivated yeast, its capacity to stabilise aromatic substances and pigments via links with polysaccharides and the antioxidant action of a tannin. GLUTAROM EXTRA™ features a guaranteed, high level of reduced glutathione, a powerful nucleophile which limits secondary oxidations of colour and aromas. In rosé vinification, these two solutions are essential for preserving freshness.



ESSENTIAL ANTIOXIDANT™

**An extremely pure
gallic tannin with a high
antioxidant capacity**

Selected in partnership with INRAE, Supagro Montpellier and the University of Montpellier, ESSENTIAL ANTIOXIDANT™ contains polyphenols that are very easily oxidized: it «sacrifices» itself to preserve the aromas and their precursors, while also allowing better inhibition of laccase activity. Does not add bitterness at recommended doses.



IOC CALYPSO™

**Révéler et protéger les
arômes au cours d'une
stabulation sur bourbes**

IOC Calypso™ is a *Metschnikowia pulcherrima* yeast, selected for its specific enzymatic activity. Used during cold stabulation on lees IOC CALYPSO™ is an innovative bio-protection tool specifically developed to limit the use of SO₂. It has a specific enzymatic activity that reveals the aromatic precursors during stabulation in juices. It preserves the released aromas and the color of the wines from oxidation or from an early start to fermentation, to which the juices are particularly sensitive during cold stabulation.



Qi FINE™ ET Qi UP XC™

**Chitosan-based innovations
for clarifications which
protect musts and wines**

These static (Qi FINE™) or floatation (Qi UP XC™) fining aids both benefit from chitosan's antiradical (and consequently antioxidant) action, as well as its substantial capacities for interacting with oxidisable and oxidised polyphenols on account of its high load density. They therefore contribute towards preserving aromatic and visual freshness, but also foster a less aggressive tannic structure.

ACTIPROTECT ROSÉ™

**Protecting yeasts in order to
bring out the aromas of rosé
wines**

As a latest-generation protective agent ACTIPROTECT ROSÉ™ comes from a yeast strain selected for its exceptional capacity for producing sterols, autolysed in line with a dedicated process to concentrate these sterols and assembled with an inactivated yeast that is particularly rich in minerals and vitamins. This unique composition gives it a peerless capacity to strengthen the membrane of active yeasts during the rehydration process. The plasma membrane thus optimises membrane exchanges of must towards the cell, in particular of aromatic precursors. The yeast can then bring out the whole aromatic potential of the rosé must, without in any way jeopardising fermentation, including in stressful conditions (highly clarified must and low temperature).



IOC BE FRUIT™ ET IOC BE THIOLS™

The IOC BE™ yeasts, which are unable to produce SO₂, are derived from an innovative marker-assisted cross-breeding technology. They benefit from the oenological and sensory heritage of high-quality yeasts, deeply characterized in terms of their aromatic contribution and conditions of use. The IOC BE™ yeasts thus combine these powerful organoleptic enhancement capacities with the inability to produce SO₂. They also produce very little ethanal and very rarely H₂S.