

FAQS FINING AGENTS

WHY FINING?

Fining agents can be used for many purposes in winemaking, including **clarification, filterability improvement, prevention of haze and sediment formation, organoleptic profile improvement, color adjustment, and removal of undesirable elements** or flavors. The fining process is therefore a crucial stage in the production of all wine types.

Improve Clarification and Filterability

Solids removal can be achieved using enzymes, and/or fining agents such as high molecular weight gelatin, casein, bentonite, isinglass.

Improve Sensory Aspects:

Wines with perceived astringency and bitterness may be improved with the use of protein-based fining agents that complex with polyphenols. Nowadays, correcting wine sensory imperfection can also be done in a less invasive method with the help of polysaccharides and tannins

Reach Wine Stability:

Fining agents can be used to remove elements that can cause haziness, sediment and sensory defects after bottling thus causing loss of wine value. Choice of the fining agent used depends on the nature of the instability:

- Oxidative Stability => CASEIMIX® (Potassium Caseinate), POLYMIX® (PVPP, Casein), POLYMIX NATUR'® (Yeast extracts, PVPP, bentonite), GREENFINE® MUST (Pea protein), GREENFINE® X-PRESS (Pea protein, PVPP, Bentonite and Chitin-glucan)
- Protein Stability => BENSOSOL POUDRE (Sodium bentonite) or BENTOSOL FT (Calcium, sodium activated bentonite for cross-flow filtration)
- Microbial Stability => KILLBRETT® (Chitosan)
- Color Stability => NATUR'FINE PRESTIGE® (Yeast extracts)

HOW DOES FINING WORK?

Fining consists of adding to a wine a clarifying product capable of coagulating and forming flakes; the formation of the flakes and their sedimentation carry away the cloudy particles and clarify the wine. Each fining agent has specific properties and reacts with various wine constituents depending on its origin, density of charge, molecular weight, and chemical properties. Fining involves two crucial reactions: Flocculation and Sedimentation.

HOW TO INCORPORATE FINING AGENTS INTO WINE OR MUST?

Fining agents are very fast in reacting with wine compounds. For this reason they should be dispersed throughout the entire volume of wine or juice immediately, otherwise they are likely to finish coagulating before completely mixed with the liquid, thus reducing their effectiveness. If possible, incorporate finings using a Venturi tube during tank mixing.

HOW LONG CAN FINING AGENTS REMAIN IN WINE?

Gelatin, casein, pea protein, and egg albumin should not remain in wine for more than 10-15 days. Isinglass can remain 3-4 weeks. Bentonite, silica sol, chitosan and PVPP can remain in wine for a longer time.

WHEN AND HOW TO USE FLOCCULATION AIDS?

When fining white, rosé, or any low tannin wines, some protein-based fining agents with positive electric charge, particularly gelatin and isinglass, require the addition of negatively charged colloids in order to ensure complete

flocculation and precipitation. Such negatively charged flocculation aids include: tannin, silica sol, and bentonite.

WHAT ARE THE DIFFERENT TYPES OF FINING AGENTS ?

Protein fining agents :

- Animal origin: gelatins, egg albumin, casein (CASEIMIX®) and potassium caseinate, fish fining (COLLE DE POISSON L.A®).
- Plant origin: pea (GREENFINE® MUST) or potato, carbon.
- Fungal origin: chitin-glucan and chitosan (KILLBRETT®) from *Aspergillus Niger* and protein extracts from *Saccharomyces Cerevisiae* yeast (NATUR'FINE PRESTIGE®).
- Mineral fining agents : Bentonite, kaolin, silica gel.
- Synthetic fining agents: PVPP and PVI-PVP.

VEGAN, ALLERGEN-FREE FINING AGENTS

Lamothe-Abiet has developed a range of products that can effectively replace albumin, casein, and potassium caseinate. These products can be based of yeast derivatives and plant proteins.

WHAT IS A PLANT-BASED FINING AGENT ?

Plant-based fining agents for use in winemaking generally come from peas or potatoes. Their origin gives them different properties and they are excellent alternatives to PVPP, gelatin, or casein.

WHY USE PEA PROTEIN?

The pea protein is more widely used because it is very versatile and it respects the qualities of juices and wines. The pea protein fining is a great tool to use on white and rosé wines to correct and prevent oxidative evolution of the color, to reduce astringency and correct phenolic unbalance. Pea proteins have a very interesting clarifying power and ensure a good settling. Pea proteins also improve clarity and reduce tannic astringency in reds without modifying the polyphenolic balance.

WHAT ARE LAMOthe ABIET SELECTION CRITERIA FOR PEA PROTEIN?

As a plant-based fining agent, the quality of pea protein can vary greatly (depending on variety, harvesting location, climatic conditions, etc.). In order to provide a constant quality, Lamothe-Abiet selects the best pea protein resources and validates them according to many requirements such as the percentage of protein matter, efficiency on flocculation and sedimentation, appearance, smell, impact on taste. It is thanks to these criteria that our GREENFINE® range contain the best pea proteins on the market.

In addition to being non-GMO, allergen-free, natural, and vegan, Lamothe-Abiet fining agents from GREENFINE® range are composed of high quality pea protein (*Pisium sativum*) for musts and wines fining (white, rosé and red wines) giving the best results.

WHAT ARE THE BENEFITS OF YEAST-BASED FINING AGENTS?

Proteins extracted from yeast have many advantages for fining. In addition to being natural, non-allergenic and non-GMO, they are as effective and precise as gelatin or albumin thanks to their high molecular weight composition. Yeast derivatives as fining agents allow clarification and the improvement of the organoleptic characteristics of wines by eliminating unpleasant tannins and bringing roundness in palate.

LAMOthe-ABIET FINING AGENTS

In green: Vegan

	Composition	Clarification	Astringency removal	Roundness	off-aroma removal	Protein removal	Oxidation treatment	Application	Dosage (g/hL)
GREENFINE® MUST	Pea protein	••	••	•	••		•	Must / Wine	10 – 80
GREENFINE® X-PRESS	pea protein, PVPP, calcium bentonite and chitin-glucan	•••	••	•	••		••	Must / Wine/ Press wine	10 – 80
NATURFINE PRESTIGE®	Inactivated yeasts, pectolytic enzymes	•	•••	••	••			Wine / Must during AF	5-40
POLYMIX NATUR®	Yeast extracts, calcium bentonite, PVPP	••	••	•	•	•	••	Must during AF	15-100
CASEIMIX®	Potassium caseinate	•••			•		•••	Must / press wine	15-80
COLLE DE POISSON LA	Isinglass	••		•	•		•	Wine	1-3
BENTOSOL® Poudre	Sodium bentonite					•••		Must / Wine	10-120
BENTOSOL® FT	Calco-sodic purified bentonite					••		Must / Wine	10-120

FINING FINDER

Each fining agent has specific properties. The same fining agent may do several jobs or a combination of fining agents may be needed for one problem.

Unbalanced due to astringency

Medium to high tannin content

GREENFINE® X-PRESS: 30-80 g/hL
CASEIMIX®: 15-80g/hL
POLYMIX®: 30-80 g/hL

Low tannin content

GREENFINE® MUST: 10-80g/hL
NATUR'FINE® PRESTIGE: 20-40 g/hL
POLYMIX NATUR'®: 30-80 g/hL

Other causes of imbalance

Lack of volume

NATUR'SOFT, TAN&SENSE® VOLUME,
TAN&SENSE® ORIGIN, SUBLI'SENSE®,
MANNO'SENSE®

Smoke taint

NATUR'FINE PRESTIGE®, POLYMIX NATUR'®,
CASEIMIX®
SUBLI'SENSE®, MANNO'SENSE®



Refining

Medium to high tannin content

POLYMIX NATUR'®: 30-80 g/hL
GREENFINE® X-PRESS: 30-80g/hL

Low tannin content

GREENFINE® MUST: 10-80g/hL
NATUR'FINE® PRESTIGE: 20-40 g/hL

Excess of polyphenols

Oxidation

CASEIMIX®: 15-80g/hL
GREENFINE® MUST: 10-80g/hL
POLYMIX NATUR'®: 30-80 g/hL
POLYMIX®: 30-80 g/hL

Bitterness, Astringency

POLYMIX NATUR'®: 30-80 g/hL
GREENFINE® X-PRESS: 30-80 g/hL

Color

GREENFINE® X-PRESS: 30-80 g/hL
GREENFINE® MUST: 10-80g/hL
CASEIMIX®: 30-80 g/hL



Refining

COLLE DE POISSON LA: 0,5-1,5g/hL
NATUR'FINE® PRESTIGE: 10-30 g/hL
GREENFINE® MUST: 10-30g/hL

Brightness

COLLE DE POISSON LA: 1-3g/Hl
POLYMIX®: 15-30 g/hL

Protein stability

BENTOSOL® POUFRE
BENTOSOL® FT (tangential)
dose to be determined by heat test