Must clarification by flotation

WHAT IS MUST FLOTATION?

Flotation is a separation technique which, like decanting, uses the difference in the specific masses of the liquid and the particles it contains. However, while in decanting the solid substance's specific mass is larger than the liquid's specific mass, in flotation the opposite is true, resulting in an increase in the speed of the bottom-to-top movement of the particles.

Our flotation system allows for the continuous clarification and stabilisation of large amounts of must, significantly reducing the treatment costs of the processed product and limiting the environmental impact.

The process starts by adding pectolytic enzymes to the unclarified must and allowing them to act for at least 1.5 hours.

APPLICATION

In order to optimise the flotation process, a series of flocculants and clarifiers must be added to the raw must to form clots that can later be dragged to the surface. These adjuvants are:
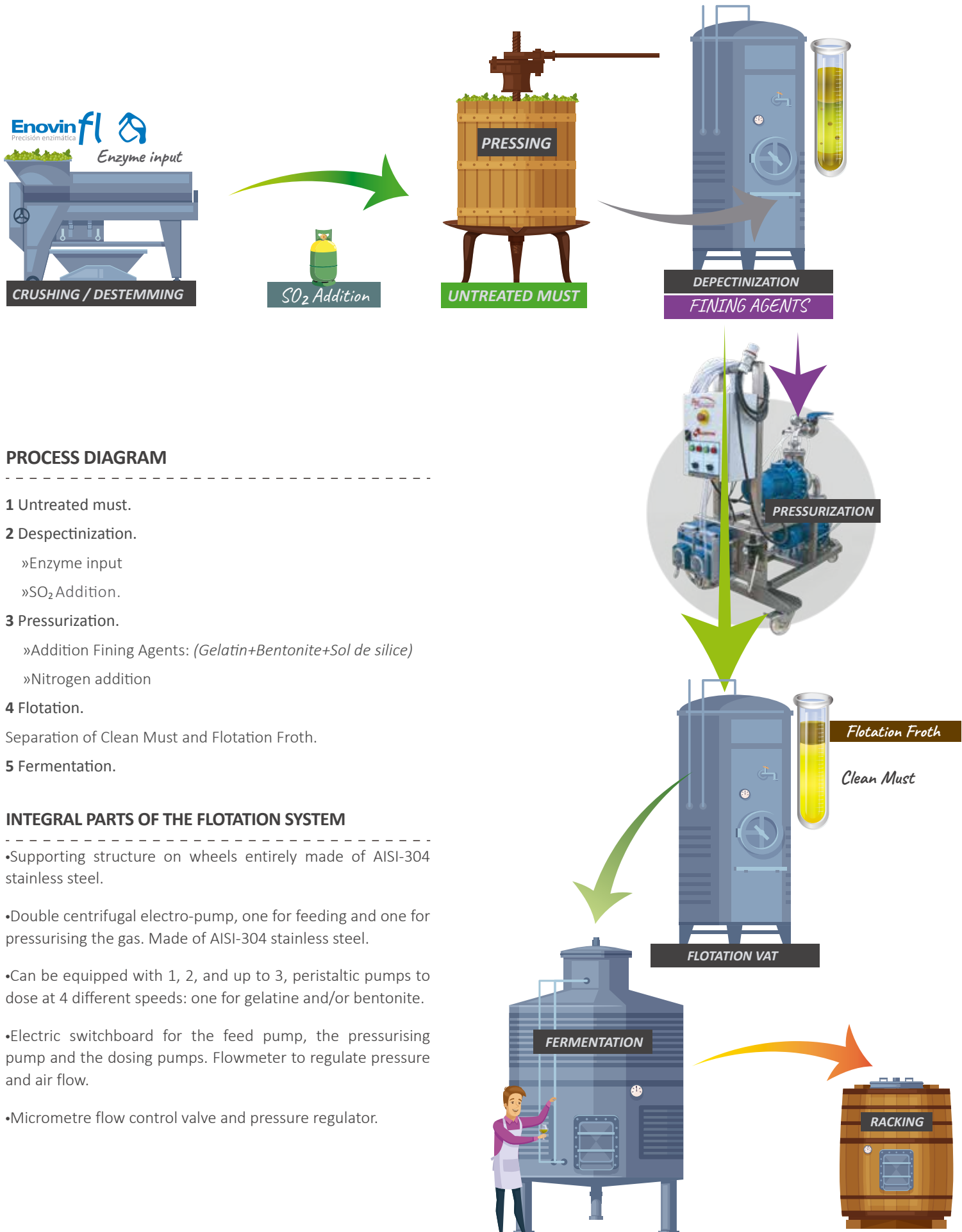
»**Bentonite:** to form floccules.

»**Gelatine:** to make these floccules firm.

»**Silica sol:** to compress the flotation deposits as much as possible.

The dragging occurs when pressurising the must by adding gas (usually air).

Flotation is carried out in an a tank, placed downstream from the system, where pressurised must is introduced through the base and left to settle for 1 hour until flotation takes place. After that time, the clean must is extracted through the tank base.

When the flotation deposits start to rise, they are sent to a different tank.

The resulting must's purity is approximately 50 NTU. However, the system can be adapted to increase the NTU value.

AGROVIN

Flotation

Enovin fl
Precisión enzimática

Enzyme input

CRUSHING / DESTEMMING

SO₂ Addition

PRESSING

UNTREATED MUST

DEPECTINIZATION

FINING AGENTS

PRESSURIZATION

PROCESS DIAGRAM

1 Untreated must.

2 Despectinization.

»Enzyme input

»SO₂ Addition.

3 Pressurization.

»Addition Fining Agents: *(Gelatin+Bentonite+Sol de silice)*

»Nitrogen addition

4 Flotation.

Separation of Clean Must and Flotation Froth.

5 Fermentation.

INTEGRAL PARTS OF THE FLOTATION SYSTEM

•Supporting structure on wheels entirely made of AISI-304 stainless steel.

•Double centrifugal electro-pump, one for feeding and one for pressurising the gas. Made of AISI-304 stainless steel.

•Can be equipped with 1, 2, and up to 3, peristaltic pumps to dose at 4 different speeds: one for gelatine and/or bentonite.

•Electric switchboard for the feed pump, the pressurising pump and the dosing pumps. Flowmeter to regulate pressure and air flow.

•Micrometre flow control valve and pressure regulator.

Flotation Froth

Clean Must

FLOTATION VAT

FERMENTATION

RACKING

PERIPHERAL EQUIPMENT OF THE FLOTATION SYSTEM
(NOT INCLUDED IN THIS OFFER)

1. Two tanks with four or five times the size of the system's hourly output to be used as buffer tanks for the unclarified must, with a homogenisation system.

2. Same tanks as in point 1 above for the flotation process.

3. Hot water (45 – 55 °C).

4. Mixing tanks with stirrer for the adjuvants.

5. Oenological hose to connect:
   - Buffer tank to feed pump and dosing system.
   - Extraction pump to fermentation tanks.
   - Pumps for the solid deposits.
     (With their corresponding clamps and fittings).

6. Power supply 380V III + earth.

Characteristics	*Performance* FLA-200P	*Performance* FLA-200PP
Power installed (KW)	6,5	7
Supply voltage	380V III 50Hz	380V III 50Hz
Flow rate (L/H)	15.000/20.000	15.000/20.000
Gelatine pump, 4 speeds	YES	YES
Bentonite pump, 4 speeds	NO	NO
Length (mm)	800	800
Width (mm)	600	600
Height (mm)	1.100	1.100

Characteristics	*Performance* FLA-400P	*Performance* FLA-400PP
Power installed (KW)	8,5	9
Supply voltage	380V III 50Hz	380V III 50Hz
Flow rate (L/H)	30.000/40.000	30.000/40.000
Gelatine pump, 4 speeds	YES	YES
Bentonite pumpa, 4 speeds	NO	NO
Length (mm)	800	800
Width (mm)	600	600
Height (mm)	1.100	1.100

Characteristics	*Performance* FLA-700P	*Performance* FLA-700PP
Power installed (KW)	15,5	16
Supply voltage	380V III 50Hz	380V III 50Hz
Flow rate (L/H)	40.000/70.000	40.000/70.000
Gelatine pump, 4 speeds	YES	YES
Bentonite pump, 4 speeds	NO	SI
Length (mm)	800	800
Width (mm)	600	600
Height (mm)	1.100	1.100