

Filtration and Beverage Treatment Products

Winemaker's Guide

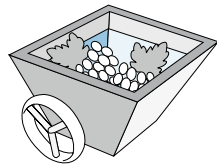
EATON

Powering Business Worldwide

Contemporary White Wine

Contemporary consumers enjoy variety. They seek lightness, elegance, freshness, and harmony when savoring their wine. Eaton brings the best selection of products for wine filtration and treatment best suited for your needs to meet your customers' expectations.

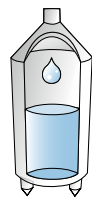
Grape processing Grape mash processing



Young & Fresh Type

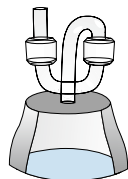
- Only fully ripen and 100% healthy grapes
- Harvest grapes cool and with as little bruising as possible
- Quick and reductive processing
- Add 0.25 - 0.33 lb/1,000 gal (3 -4 g/hL) SO₂

Must clarification Must treatment



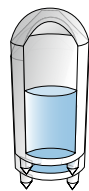
- **TIP** Cool the must during the entire processing period!
- Must clarification:
Enzymatic clarification:
0.08 - 0.17 lb/1,000 gal **SIHAZYM Claro** enzyme
For Flotation: 2.56 fl.oz/1,000 gal **SIHAZYM Flot** enzyme and
0.42 - 1.25 lb/1,000 gal **SIHA® Flotation Gelatine** or
0.42 - 1.67 lb/1,000 gal **SIHA Pea Protein** fining agent
- If required: 0.83 - 3.34 lb/1,000 gal **SIHA GESIL** fining agent
- 4.17 - 12.52 lb/1,000 gal **SIHA Active Bentonite G** stabilizer

Fermentation control



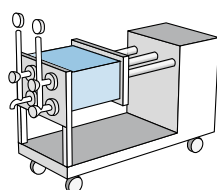
- Cold fermentation at ~ 59 °F
- Rehydration with 2.5 lb/1,000 gal of **SIHA SpeedFerm™**
- 1.67 - 2.5 lb/1,000 gal **SIHA CRYAROME™** yeast or **SIHA WhiteArome** yeast
- 1.67 lb/1,000 gal **SIHA PROFERM™ Fit** yeast nutrient or up to 3.34 lb/1,000 gal **SIHA SIHA PROFERM H+2** yeast nutrient in combination with **SIHA Vitamin B₁**, yeast nutrient or 4.17 lb/1,000 gal **SIHA Fermentation Salt Plus** fermentation aid (add in stages)

Young wine development



- Recommended sulfurization with 0.42 - 0.58 lb/1,000 gal (5 - 7 g/hL)SO₂
- Young wine development (if required):
SIHA Gelatine or **SIHA Pea Protein** (for vegan wine production)
SIHA OPTISIL fining agent
SIHA Active Bentonite G stabilizer
SIHA Isinglass fining agent
- Young wine stabilisation:
SIHA Gum Arabic Granulate stabilizer

Filtration



- Filtration with depth filter media **BECOPAD® 170** or **BECOPAD 220** in plate and frame filters **BECO COMPACT™ PLATE**
- Filtration with stacked disc cartridges **BECODISC® B173** or **BECODISC B223** in stacked disc cartridge housings **BECO INTEGRA® DISC**
- Filtration with depth filter cartridges **BECO PROTECT® 0.3 µm** or 0.5 µm in filter cartridge housings **BECO INTEGRA CART**
- Filtration with membrane filter cartridges **BECO MEMBRAN PS Wine** or **PS Pure** 0.45 µm or 0.65 µm in filter cartridge housings **BECO INTEGRA CART**

TIP The filterability of the wine increases considerably by using SIHAZYM Extro, Claro, and Fine enzymes consistently. Selective wine filtration using BECOPAD depth filter media decreases the burden and at the same time increases the filtration performance. This enhances wine quality.

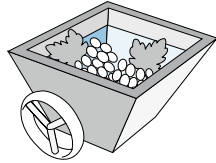
Mouthfeel Type

- Only fully ripen and 100% healthy grapes
 - Process quickly
 - Destem and mash
 - 2 – 6 hour mash contact time with
0.25 - 0.33 lb/1,000 gal **SIHAZYM Extro** enzyme
 - Pressing pressure < 100 kPa, 1 – 1.2 bar
-
- Must temperature: 54 - 57 °F
 - Must clarification:
Enzymatic clarification:
0.08 - 0.17 lb/1,000 gal **SIHAZYM Claro** enzyme
For Flotation: 2.56 fl.oz/1,000 gal **SIHAZYM Flot** enzyme and
0.42 - 1.25 lb/1,000 gal **SIHA® Flotation Gelatine** or
0.42 - 1.67 lb/1,000 gal **SIHA Pea Protein** fining agent
 - If required: 0.83 - 3.34 lb/1,000 gal **SIHA GESIL** fining agent
 - 4.17 - 12.52 lb/1,000 gal **SIHA Active Bentonite G** stabilizer
-
- Control fermentation at 63 – 66 °F
 - Rehydration with 2.5 lb/1,000 gal of **SIHA SpeedFerm** yeast nutrient
 - 1.67 lb/1,000 gal **SIHA Active Yeast 7 (Riesling yeast)** yeast or
1.67 - 2.09 lb/1,000 gal **SIHAFERM® Element** yeast
 - 1.67 lb/1,000 gal **SIHA PROFERM™ Fit** yeast nutrient or up to 3.34
lb/1,000 gal **SIHA PROFERM H+²** yeast nutrient in combination with
SIHA Vitamin B₄ yeast nutrient or 1.67 – 3.34 lb/1,000 gal
SIHA Fermentation Salt Plus fermentation aid (add in stages)
-
- Approx. 4 – 6 week yeast contact (bâtonnage)
 - Bâtonnage: 0.25 - 0.42 lb/1,000 gal **SIHAZYM Fine®** enzyme
for 4 – 6 weeks
 - Malolactic fermentation with **SIHALACT Oeno** malolactic bacteria
(Temperature 64 – 68 °F)
 - **SIHA BACTIFERM** bacteria nutrient for unfavorable conditions
during malolactic fermentation lactic acid bacteria
 - Sulphuring max. 0.42 - 0.58 lb/1,000 gal (5-7 g/hL) SO₂
 - Mature for 4 – 6 months in tanks or casks
 - Young wine development (if required):
SIHA Gelatine or **SIHA Pea Protein** (for vegan wine production)
SIHA OPTISIL fining agent
SIHA Active Bentonite G stabilizer
-
- Filtration with depth filter media **BECOPAD 220** or **BECOPAD 270**
in plate and frame filters **BECO COMPACT PLATE**
 - Filtration with stacked disc cartridges **BECODISC B223** or
BECODISC B273 in stacked disc cartridge housings
BECO INTEGRA DISC
 - Filtration with depth filter cartridges **BECO PROTECT** 0.5 µm
in filter cartridge housings **BECO INTEGRA CART**
 - Filtration with membrane filter cartridges
BECO MEMBRAN PS Wine or **PS Pure** 0.65 µm or 1.0 µm
in filter cartridge housings **BECO INTEGRA CART**



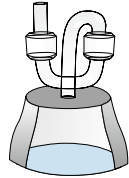
Top red wine grapes already grow in the vineyard. The terroir is decisive. Selecting the right oenological actions in the wine cellar can optimize the results.

Young & Fresh Type



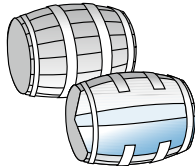
- Only fully ripen and 100% healthy grapes with fully developed color
- Harvest and process grapes cool and healthy
- Destem, space between drums not too close
- 0.25 lb/1,000 gal **SIHAZYM Extro** enzyme
- Add 0.25 lb/1,000 gal (3 g/hL) SO₂

Mash processing



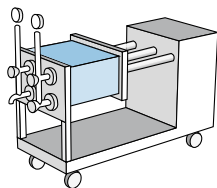
- Control mash fermentation at 64 – 75 °F
- 1.67 – 2.09 lb/1,000 gal **SIHA Active Yeast 8 (Burgundy yeast)** or **SIHAFERM Finesse Red** yeast
- 2.09 – 2.5 lb/1,000 gal **SIHA PROFERM Red** yeast nutrient
- 0.5 - 0.67 lb/1,000 gal **SIHA Tannin FC** fining agent
- Press after complete fermentation

Fermentation control



- Store in a mixed set of 1 – 3 year old barriques
- Malolactic fermentation with **SIHALACT Oeno** malolactic bacteria (Temperature 64 – 68 °F)
- **SIHA BACTIFERM** bacteria nutrient for unfavorable conditions during malolactic fermentation
- Bâtonnage: 0.25 – 0.42 lb/1,000 gal **SIHAZYM Fine**® enzyme for 3 – 5 weeks
- Late sulphuring with maximum 0.67 lb/1,000 gal (8 g/hL) SO₂

Ageing



- Filtration with depth filter media **BECOPAD 270** or **BECOPAD 350** in plate and frame filters **BECO COMPACT PLATE**
- Filtration with stacked disc cartridges **BECODISC B273** or **BECODISC B353** in stacked disc cartridge housings **BECO INTEGRA DISC**
- Filtration with depth filter cartridges **BECO PROTECT** 0.3 µm or 0.5 µm in filter cartridge housings **BECO INTEGRA CART**
- Filtration with membrane filter cartridges **BECO MEMBRAN PS Wine** or **PS Pure** 0.45 µm or 0.65 µm in filter cartridge housings **BECO INTEGRA CART**

Filtration

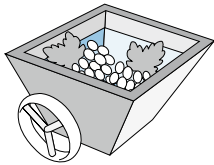
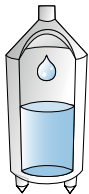
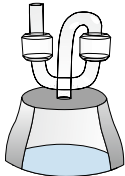
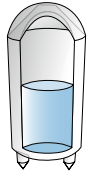
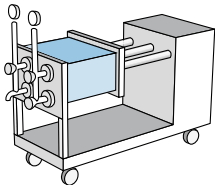
Complex Type (Bordeaux Type)

- Only fully ripen and 100% healthy grapes
 - Process quickly
 - Destem and mash
 - Mash temperature: 55 – 59 °F at maceration time > 8 days
 - 0.17 – 0.33 lb/1,000 gal **SIHAZYM Extro** enzyme
 - Add 5 – 10 % non-destemed grapes
-
- Control mash fermentation at 64 – 72 °F
 - 1.67 – 2.09 lb/1,000 gal **SIHA Active Yeast 10 (Red Roman)** or **SIHA Rubino Cru** yeast
 - 2.09 – 2.5 lb/1,000 gal **SIHA PROFERM Red** yeast nutrient
 - Add 0.33 – 0.5 lb/1,000 gal **SIHAZYM Fine** enzyme to liberate the polysaccharides, mannoproteins
 - 0.42 – 0.58 lb/1,000 gal **SIHA Tannin FC** fining agent or **SIHA Tannin MOX** fining agent for micro-oxidation
 - Press after complete fermentation
-
- Store in barriques for 6 – 12 months
 - Malolactic fermentation with **SIHALACT Oeno** malolactic bacteria (Temperature 64 – 68 °F)
 - **SIHA BACTIFERM** bacteria nutrient for unfavorable conditions during malolactic fermentation
 - Bâtonnage: 0.25 – 0.42 lb/1,000 gal **SIHAZYM Fine**® enzyme for 3 – 5 weeks
 - Late sulphuring with maximum 0.67 lb/1,000 gal (8 g/hL) SO₂
-
- Filtration with depth filter media **BECOPAD 350** or **BECOPAD 450** in plate and frame filters **BECO COMPACT PLATE**
 - Filtration with stacked disc cartridges **BECODISC B353** or **BECODISC B453** in stacked disc cartridge housings **BECO INTEGRA DISC**
 - Filtration with depth filter cartridges **BECO PROTECT** 0.5 µm in filter cartridge housings **BECO INTEGRA CART**
 - Filtration with membrane filter cartridges **BECO MEMBRAN PS Wine** or **PS Pure** 0.65 µm or 1.0 µm in filter cartridge housings **BECO INTEGRA CART**



Ice Wine and Dessert Wine

Ice wines and dessert wines are regaining popularity. Take advantage of this variety of taste. Less is frequently more and small selective actions maximize the results.

		German Type – “Ice Wine”
<p>Grape processing Mash processing</p>		<ul style="list-style-type: none"> • Grapes with at least 120 °Oe, pure botrytis • Remove any grapes with white, pink, and blue mold • Harvest temperature of 14 °F • Pressing: pH ≤ 0.3 in comparison to first pressings
<p>Must clarification Must treatment</p>		<ul style="list-style-type: none"> • Heat the juice to 50 °F • Strong pre-clarification of the must 0.08 – 0.17 lb/1,000 gal SIHAZYM Claro enzyme • Must fining (if required): 6.68 - 8.35 lb/1,000 gal SIHA Actiliq GE fining agent 0.83 – 3.34 lb/1,000 gal SIHA GESIL fining agent or for vegan wine production: SIHA Pea Protein as required • 12.52 - 16.69 lb/1,000 gal SIHA Active Bentonite G stabilizer
<p>Fermentation control</p>		<ul style="list-style-type: none"> • Fermentation at 64 – 68 °F • Rehydration with 2.5 lb/1,000 gal of SIHA SpeedFerm yeast nutrient • 2.5 - 4.17 lb/1,000 gal SIHA Active Yeast 7 (Riesling yeast) • 3.34 lb/1,000 gal SIHA PROFERM Fit combined yeast nutrient or 4.17 lb/1,000 gal SIHA Fermentation Salt Plus fermentation aid (add in stages) • Ferment up to residual sugar concentration of 1.17 - 1.25 lb/gal • Stop fermentation by cooling at temperatures < 39 °F
<p>Ageing</p>		<ul style="list-style-type: none"> • Fast racking of yeast • Sulphuring with at least 1.08 - 1.25 lb/1,000 gal (13-15 g/hL) SO₂ • Young wine development (if required): SIHA Gelatine or SIHA Pea Protein (for vegan wine production) SIHA OPTISIL fining agent SIHA Active Bentonite G stabilizer SIHA Actiliq GE fining agent • 0.25 – 0.33 lb/1,000 gal SIHAZYM Fine enzyme to improve sensory profile and the filtration
<p>Filtration</p>		<ul style="list-style-type: none"> • Filtration with depth filter media BECOPAD 220 or BECOPAD 270 in plate and frame filters BECO COMPACT PLATE • Filtration with stacked disc cartridges BECODISC B223 or BECODISC B273 in stacked disc cartridge housings BECO INTEGRA DISC • Filtration with depth filter cartridges BECO PROTECT 0.3 µm or 0.5 µm in filter cartridge housings BECO INTEGRA CART • Filtration with membrane filter cartridges BECO MEMBRAN PS Wine or PS Pure 0.45 µm in filter cartridge housings BECO INTEGRA CART

Sauternes Type

- Grapes with at least 140 °Oe, pure botrytis
- Remove any grapes with white, pink, and blue mold
- Press slowly
- Control sugar and pH during pressing; pH 3.5
- pH ≤ 0.3 in comparison to first pressings

Heat the juice to 50°F

- Strong pre-clarification of the must
0.25 – 0.33 lb/1,000 gal **SIHAZYM Claro** enzyme
- Must fining (if required):
6.68 - 8.35 lb/1,000 gal **SIHA Actiliq GE** fining agent
0.83 – 3.34 lb/1,000 gal **SIHA GESIL** fining agent
or for vegan wine production: **SIHA Pea Protein** as required
- 12.52 - 16.69 lb/1,000 gal **SIHA Active Bentonite G** stabilizer

- Fermentation at 64 – 68 °F
- Rehydration with 2.5 lb/1,000 gal of **SIHA SpeedFerm** yeast nutrient
- 2.5 – 4.17 lb/1,000 gal **SIHA CRYAROME** yeast or **SIHA VARIOFERM** yeast
- 3.34 lb/1,000 gal **SIHA PROFERM Fit** combined yeast nutrient or 4.17 lb/1,000 gal **SIHA Fermentation Salt Plus** fermentation aid (add in stages)
- Fermentation to at least cooling 7 Vol.-%
- Stop fermentation by cooling at temperatures < 39 °F

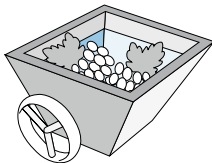
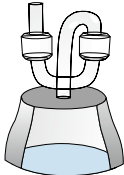

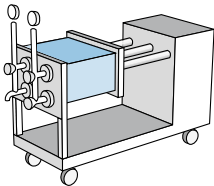
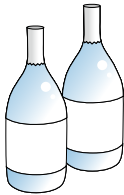
- According to the quality of the yeast depot stabilize after first racking
- Sulphuring with at least 0.83 - 1.25 lb/1,000 gal (10-15 g/hL) SO₂
- Store in barriques for 6 months
- Young wine development (if required):
SIHA Gelatine or **SIHA Pea Protein** (for vegan wine production)
SIHA OPTISIL fining agent
SIHA Active Bentonite G stabilizer
SIHA Actiliq GE fining agent
- 0.25 – 0.33 lb/1,000 gal **SIHAZYM Fine** enzyme to improve sensory profile and the filtration

- Filtration with depth filter media **BECOPAD 220** or **BECOPAD 270** in plate and frame filters **BECO COMPACT PLATE**
- Filtration with stacked disc cartridges **BECODISC B223** or **BECODISC B273** in stacked disc cartridge housings **BECO INTEGRA DISC**
- Filtration with depth filter cartridges **BECO PROTECT** 0.3 µm or 0.5 µm in filter cartridge housings **BECO INTEGRA CART**
- Filtration with membrane filter cartridges **BECO MEMBRAN PS Wine** or **PS Pure** 0.45 µm in filter cartridge housings **BECO INTEGRA CART**



Sparkling Wine Bottle Fermentation

Many consumers have discovered that sparkling wine is not only pearly, but has the essence of wine as well. This presents an opportunity to produce many notable sparkling wines.

		Sparkling Wine Type
<p>Grape processing Mash processing</p> 	<ul style="list-style-type: none"> • Only fully ripen and 100% healthy grapes • Harvest at max. 80 – 85 °Oe • Total acidity 66.8 - 83.5 lb/1,000 gal • Gentle grape transportation • Must temperature: 54 – 57 °F • Must clarification: 0.08 – 0.17 lb/1,000 gal SIHAZYM Claro enzyme • Must fining (if required): 0.83 – 3.34 lb/1,000 gal SIHA GESIL fining agent • For vegan sparkling wine production: SIHA Pea Protein as required 	
<p>Fermentation control Base wine</p> 	<ul style="list-style-type: none"> • Control fermentation at 59 – 64 °F • Rehydration with 2.5 lb/1,000 gal of SIHA SpeedFerm™ yeast nutrient • 1.67 – 2.09 lb/1,000 gal SIHA CRYAROME yeast or SIHA Active Yeast 7 (Riesling yeast) • 3.34 lb/1,000 gal SIHA SIHA PROFERM H+² yeast nutrient in combination with SIHA Vitamin B₁ yeast nutrient or 4.17 lb/1,000 gal SIHA Fermentation Salt Plus fermentation aid (add in stages) 	
<p>Base wine stabilization</p> 	<ul style="list-style-type: none"> • No malolactic fermentation. Deacidification with SIHA Potassium Bicarbonate • Low dosage of SO₂: max. 0.25 lb/1,000 gal (3 g/hL) total SO₂ • Clarification and tartrate stabilization • Cuveé the wine 	
<p>Filtration</p> 	<ul style="list-style-type: none"> • Filtration with depth filter media BECOPAD 270 or BECOPAD 350 in plate and frame filters BECO COMPACT PLATE • Filtration with stacked disc cartridges BECODISC B273 or BECODISC B353 in stacked disc cartridge housings BECO INTEGRA DISC • Filtration with depth filter cartridges BECO PROTECT 0.3 µm or 0.5 µm in filter cartridge housings BECO INTEGRA CART • Filtration with membrane filter cartridges BECO MEMBRAN PS Wine or PS Pure 0.65 µm in filter cartridge housings BECO INTEGRA CART 	
<p>Sparkling wine making</p> 	<ul style="list-style-type: none"> • Second fermentation: • Bottle fermentation: 63 – 66 °F with 1.67 – 2.5 lb/1,000 gal SIHA Active Yeast 4 • Tirage 0.18 - 0.2 lb/gal saccharose • Max. 2.5 lb/1,000 gal SIHA Fermentation Salt fermentation aid • 76,8 fl.oz/1,000 gal SIHA Brilliant liquid riddling aid and 76,8 fl.oz/1,000 gal SIHA Tannin liquid riddling aid • Yeast storage at least for 9 months • Set liqueur to 0.1 - 0.2 lb/gal residual sugar concentration 	

Champagne Type

- Only fully ripen and 100% healthy grapes
- Harvest at max. 80 – 85 °Oe
- Total acidity max. 83.5 lb/1,000 gal
- Gentle grape transportation
- Light must oxidation
- Must temperature: 57 – 60 °F
- Must clarification: 0.08 – 0.17 lb/1,000 gal **SIHAZYM Claro** enzyme
- Must fining (if required):
0.83 – 3.34 lb/1,000 gal **SIHA GESIL** fining agent
For vegan sparkling wine production:
SIHA Pea Protein as required

- Control fermentation at 59 – 64 °F
- Rehydration with 2.5 lb/1,000 gal of **SIHA SpeedFerm™** yeast nutrient
- 1.67 – 2.09 lb/1,000 gal **SIHA WhiteArome** yeast or **SIHAFERM Element** yeast
- 3.34 lb/1,000 gal **SIHA SIHA PROFERM H+²** yeast nutrient in combination with **SIHA Vitamin B₁** yeast nutrient or 4.14 lb/1,000 gal **SIHA Fermentation Salt Plus** fermentation aid (add in stages)

- Bâtonnage: 0.25 – 0.42 lb/1,000 gal **SIHAZYM Fine** enzyme
- Malolactic fermentation with **SIHALACT Oeno** malolactic bacteria (Temperature 64 – 68 °F)
- **SIHA BACTIFERM** bacteria nutrient for unfavorable conditions during malolactic fermentation
- After diacetyl breakdown low dosage of SO₂: max. 0.25 lb/1,000 gal (3 g/hL) total SO₂
- Clarification and tartrate stabilization
- Cuveé the wine

- Filtration with depth filter media **BECOPAD 270** or **BECOPAD 350** in plate and frame filters **BECO COMPACT PLATE**
- Filtration with stacked disc cartridges **BECODISC B273** or **BECODISC B353** in stacked disc cartridge housings **BECO INTEGRA DISC**
- Filtration with depth filter cartridges **BECO PROTECT 0.5 µm** in filter cartridge housings **BECO INTEGRA CART**
- Filtration with membrane filter cartridges **BECO MEMBRAN PS Wine** or **PS Pure 0.65 µm** in filter cartridge housings **BECO INTEGRA CART**

- Second fermentation:
- Bottle fermentation: 63 – 66 °F
with 1.67 – 2.5 lb/1,000 gal **SIHA Active Yeast 4**
- Tirage 0.18 - 0.2 lb/gal saccharose
- Max. 2.5 lb/1,000 gal **SIHA Fermentation Salt** fermentation aid
- 76,8 fl.oz/1,000 gal **SIHA Brillant liquid** riddling aid and 76,8 fl.oz/1,000 gal **SIHA Tannin liquid** riddling aid
- Yeast storage at least for 18 – 24 months
- Set liqueur to 0.1 - 0.2 lb/gal residual sugar concentration



The World Wants New Wines

Globalization is a key word in trade and industrial economies. Oenologists around the world are increasingly aware of this development. New processes and trends in winemaking are the results of their ingenuity and innovation.

Eaton's Winemaker's Guide represents a selection of new and traditional types of wines to inspire the winemaker. These are only suggestions and provide a basis for enologists to experiment with variety.

Eaton is available as a partner to provide assistance with your winemaking needs.







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