

Spirits Guide



Williams Christ pear, apple, pear, quince, cherry, peach, plum, mirabelle plum, blackthorn

Fruit brandies are in. Consumers are becoming ever more discerning and love the variety of this fine schnapps made of pomaceous and stone fruit.

		Pomaceous fruit	
Raw ingredient		 Only process fully ripened, healthy, and clean fruit If necessary, briefly store the raw ingredient to allow fruit to ripen Process quickly 	
Mash in		 Remove any leaves and rotten fruit Wash fruit Remove stalks depending on the fruit Crush or mash fruit Do not break the pits 	
Mash treatment		 Store in clean fermentation vessels with a lid and fermentation plug Acidify to a pH of 2.8 – 3.2 using 1.28 – 2.56 fl.oz/gal (1 – 2 l/hl) of SIHA[®] Combi Acid Liquid acidifier or 8.35 – 25.04 lb/1,000 gal (100 – 300 g/hl) of SIHA Combi Acid Granulated acidifier Add 0.25 – 0.42 lb/1,000 gal (3 – 5 g/hl) of SIHAZYM[™] SupraMash Granulated enzyme per 220.5 lb (100 kg) of mash for maximum mash liquefaction and flavor release, and 3.84 – 6.40 fl.oz/1,000 gal (3 – 5 ml/hl) of Amylase AG 300L enzyme Add 0.17 – 0.33 lb/1,000 gal (2 – 4 g/hl) of Panzym[®] Arome G enzyme to release bound flavors (terpenes) 	
Fermentation		 Fermentation at 61 – 68 °F (16 – 20 °C) with 1.25 – 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA Active Yeast 6 (Distillery Yeast), or Cold fermentation at 54 – 61 °F (12 – 16 °C) with 1.25 – 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA DESTAROME[™] yeast Optimum nutrient supply through 2.09 – 2.50 lb/1,000 gal (25 – 30 g/hl) of SIHA Fermentation Salt yeast nutrient or 8.35 – 16.69 lb/1,000 gal (100 – 200 g/hl) of SIHAFERM[™] Plus yeast and yeast nutrient Please observe user note for the optimum rehydration of yeast on page 11 	
Mash storage		• Protect the mash from air at the end of fermentation and distill quickly	
Distillation		 Once fermentation is complete, add 2.56 – 5.12 fl.oz/1,000 gal (2 – 4 ml/hl) of SIHA Silicone Anti Foam Agent SE Concentrated to prevent frothing in the still First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet If required add SIHA GESIL fining agent for harmonization; for dosages see Technical Information Sheet 	
Filtration		 After storage adjust the distillate to drinking strength and store for a few days at 41 – 46 °F (5 – 8 °C) Filtration with BECO SELECT[™] A 20 or BECO SELECT A 40 depth filter sheets in BECO COMPACT[™] PLATE plate and frame filters or BECO INTEGRA[™] LAB 220 filtration system Important note: filtration temperature and speed are a key for successful filtration Please observe user note for BECO SELECT A depth filter sheets in the table on page 10 Optional particle filtration with BECO PROTECT PG[®], FS or PP Pure depth filter cartridges in 10 µm or with BECO PROTECT PG or FS depth filter cartridges in 20 µm prior to bottling 	

Pitted fruit

- Process fully ripened, healthy, and clean fruit quickly
- Blackthorn: Harvest after the first frost
- Remove any leaves and rotten fruit
- Wash fruit
- · Remove stalks; only crush fruit and remove pits, if necessary
- Gently pump
- Do not break pits
- Store in clean fermentation vessels with a lid and fermentation plug
- Acidify to a pH of 2.8 3 using
 1.28 2.56 fl.oz/gal (1 2 l/hl) of SIHA Combi Acid Liquid acidifier or
- 8.35 25.04 lb/1,000 gal (100 300 g/hl) of **SIHA Combi Acid Granulated** acidifier • Add 0.25 – 0.42 lb/1,000 gal (3 – 5 g/hl) of **SIHAZYM SupraMash Granulated**
- enzyme per 220.5 lb (100 kg) of mash for maximum mash liquefaction and flavor release
- Add 0.17 0.33 lb/1,000 gal (2 4 g/hl) of Panzym Arome G enzyme to release bound flavors (terpenes)
- Fermentation at 61 68 °F (16 20 °C) with 1.25 1.67 lb/1,000 gal (15 20 g/hl) of SIHA Active Yeast 6 (Distillery Yeast), or
- Cold fermentation at 54 61 °F (12 16 °C) with 1.25 1.67 lb/1,000 gal (15 20 g/hl) of SIHA DESTAROME yeast
- Optimum nutrient supply through
 2.09 2.50 lb/1,000 gal (25 30 g/hl) of SIHA Fermentation Salt yeast nutrient or 8.35 16.69 lb/1,000 gal (100 200 g/hl) of SIHAFERM Plus yeast and yeast nutrient

Please observe user note for the optimum rehydration of yeast on page 11

- Keep cool, under acid protection, and airtight
- Once fermentation is complete, distill with the required amount of copper (1) chloride or use a suitable catalyst, if necessary
- 2.56 5.12 fl.oz /1,000 gal (2 4 ml/hl) of SIHA Silicone Anti Foam Agent SE Concentrated
- First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary
- If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet
- If required add SIHA GESIL fining agent for harmonization; for dosages see Technical Information Sheet
- After storage adjust the distillate to drinking strength and store for a few days at 36 - 41 °F (2 - 5 °C)
- Filtration with BECO SELECT A 20 or BECO SELECT A 40 depth filter sheets in BECO COMPACT PLATE plate and frame filters
- or BECO INTEGRA LAB 220 filtration system

Important note: filtration temperature and speed are a key for successful filtration $% \left({{{\rm{T}}_{{\rm{s}}}}_{{\rm{s}}}} \right)$

Please observe user note for $\ensuremath{\text{BECO SELECT A}}$ depth filter sheets in the table on page 10

 Optional particle filtration with BECO PROTECT PG, FS or PP Pure depth filter cartridges in 10 µm or with BECO PROTECT PG or FS depth filter cartridges in 20 µm prior to bottling



Rowanberry, elderberry, raspberry

When distilling schnapps from soft fruit, pay particular attention to the quality of the berries and avoid mash storage.



Elderberry, raspberry

- · Process fully ripened, healthy, and clean fruit quickly
- Remove any leaves and rotten fruit
- Remove stalks (destem)
- Only crush fruit
- Gently pump
- Store in clean fermentation vessels with a lid and fermentation plug
- Acidify to a pH of 2.8 3 using 1.28 – 2.56 fl.oz/gal (1 – 2 l/hl) of SIHA Combi Acid Liquid acidifier or 8.35 – 25.04 lb/1,000 gal (100 – 300 g/hl) of SIHA Combi Acid Granulated acidifier
- Add 0.25 0.42 lb/1,000 gal (3 5 g/hl) of SIHAZYM SupraMash Granulated enzyme per 220.5 lb (100 kg) of mash for maximum mash liquefaction and flavor release
- Fermentation at 61 68 °F (16 20 °C) with 1.25 1.67 lb/1,000 gal (15 20 g/hl) of SIHA Active Yeast 6 (Distillery Yeast), or
- Cold fermentation at 54 61 °F (12 16 °C) with 1.25 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA DESTAROME yeast
- Optimum nutrient supply through
 2.09 2.50 lb/1,000 gal (25 30 g/hl) of SIHA Fermentation Salt yeast nutrient or 8.35 16.69 lb/1,000 gal (100 200 g/hl) of SIHAFERM Plus yeast and yeast nutrient

Please observe user note for the optimum rehydration of yeast on page 11

- · Protect the mash from air at the end of fermentation and distill quickly
- Distill during abating fermentation
- 2.56 5.12 fl.oz/1,000 gal (2 4 ml/hl) of
- SIHA Silicone Anti Foam Agent SE Concentrated
- First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary
- If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet
- If required add **SIHA GESIL** fining agent for harmonization; for dosages see Technical Information Sheet
- After storage adjust the distillate to drinking strength and store for a few days at 36 41 °F (2 5 °C)
- Filtration with **BECO SELECT A 20** or **BECO SELECT A 40** depth filter sheets in **BECO COMPACT PLATE** plate and frame filters
- or $\ensuremath{\text{BECO}}$ INTEGRA LAB 220 filtration system

Important note: filtration temperature and speed are a key for successful filtration Please observe user note for **BECO SELECT A** depth filter sheets in the table on page 10

Optional particle filtration with **BECO PROTECT PG**, **FS** or **PP Pure** depth filter cartridges in 10 μ m or with **BECO PROTECT PG** or **FS** depth filter cartridges in 20 μ m prior to bottling



Brandies are becoming increasingly popular with consumers. To ensure the quality of the brandies, follow specific control measures.

	Grape brandy	
Raw ingredient	 Grapes (with at least 60 °Ce) Fully ripe, not rotten Process quickly 	
Mash in	 Remove stalks (destem) Crush 	
Mash treatment	 Acidify to a pH of 2.8 – 3 using 1.28 – 2.56 fl.oz/gal (1 – 2 l/hl) of SIHA Combi Acid Liquid acidifier or 8.35 – 25.04 lb/1,000 gal (100 – 300 g/hl) of SIHA Combi Acid Granulated acidifier Add 0.25 – 0.42 lb/1,000 gal (3 – 5 g/hl) of SIHAZYM SupraMash Granulated enzyme per 220.5 lb (100 kg) of mash for maximum mash liquefaction and flavor release Add 0.17 – 0.33 lb/1,000 gal (2 – 4 g/hl) of Panzym Arome G enzyme to release bound flavors (terpenes) 	
Fermentation	 Fermentation at 61 – 68 °F (16 – 20 °C) with 1.25 – 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA Active Yeast 6 (Distillery Yeast), or Cold fermentation at 54 – 61 °F (12 – 16 °C) with 1.25 – 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA DESTAROME yeast Optimum nutrient supply through 2.09 – 2.50 lb/1,000 gal (25 – 30 g/hl) of SIHA Fermentation Salt yeast nutrient or 8.35 – 16.69 lb/1,000 gal (100 – 200 g/hl) of SIHAFERM Plus yeast and yeast nutrient 	
Mash storage	• Protect the mash from air at the end of fermentation and distill quickly	
Distillation	 The distillate should be distilled slowly using intensifiers. Add 2.56 - 5.12 fl.oz/1,000 gal (2 - 4 ml/hl) of SIHA Silicone Anti Foam Agent SE Concentrated to prevent frothing in the still First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet If required add SIHA GESIL fining agent for harmonization; for dosages see Technical Information Sheet 	
Filtration	 After storage, possibly in wooden barrel, adjust the distillate to drinking strength and store for a few days at 36 – 41 °F (2 – 5 °C) Filtration with BECO SELECT A 20 or BECO SELECT A 40 depth filter sheets in BECO COMPACT PLATE plate and frame filters or BECO INTEGRA LAB 220 filtration system Important note: filtration temperature and speed are a key for successful filtration Please observe user note for BECO SELECT A depth filter sheets in the table on page 10 Optional particle filtration with BECO PROTECT PG, FS or PP Pure depth filter cartridges in 10 µm or with BECO PROTECT PG or FS depth filter cartridges in 20 µm prior to bottling 	

Marc brandy

- Only process marc from ripe, healthy grapes with a high Oechsle density and typical aroma
- Pulp the marc in the fermentation vessel without oxygen. Seal the fermentation vessel so that no atmospheric oxygen can enter the mash.
- Depending on the degree of squeezing, water may be necessary
- The mash is best acidified and dosed with enzymes and yeasts during compression in the fermentation vessel.
- Acidify to a pH of 2.8 3 using
 1.28 2.56 fl.oz/gal (1 2 l/hl) of SIHA Combi Acid Liquid acidifier or
 8.35 25.04 lb/1,000 gal (100 300 g/hl) of SIHA Combi Acid Granulated acidifier
- Add enzymes, if required
- Fermentation at 61 68 °F (16 20 °C) with 1.25 1.67 lb/1,000 gal (15 20 g/hl) of SIHA Active Yeast 6 (Distillery Yeast), or
- Cold fermentation at 54 61 °F (12 16 °C) with 1.25 1.67 lb/1,000 gal (15 – 20 g/hl) of SIHA DESTAROME yeast

Optimum nutrient supply through
 2.09 – 2.50 lb/1,000 gal (25 – 30 g/hl) of SIHA Fermentation Salt yeast nutrient or 8.35 – 16.69 lb/1,000 gal (100 – 200 g/hl) of SIHAFERM Plus yeast and yeast nutrient

Please observe user note for the optimum rehydration of yeast on page 11

• Protect the mash from air at the end of fermentation and distill quickly.

• Avoid storage of marc!

- Heat up very slowly. The distillate should be distilled slowly using intensifiers.
- First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary
- If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet
- If required add **SIHA GESIL** fining agent for harmonization; for dosages see Technical Information Sheet
- After storage adjust the distillate to drinking strength and store for a few days at 36 41 °F (2 5 °C)
- Filtration with BECO SELECT A 20 or BECO SELECT A 40 depth filter sheets in BECO COMPACT PLATE plate and frame filters or BECO INTEGRA LAB 220 filtration system Important note: filtration temperature and speed are a key for successful filtration Please observe user note for BECO SELECT A depth filter sheets in the table on page 10
- Optional particle filtration with BECO PROTECT PG, FS or PP Pure depth filter cartridges in 10 µm or with BECO PROTECT PG or FS depth filter cartridges in 20 µm prior to bottling



Jerusalem artichoke, gentian

Fine spirits made from roots and tubers are a welcome change to brandies distilled from fruit. Use the various processing steps to get the most out of the raw ingredients.



Gentian

- Harvest in fall after flowering
- Use fresh or dried roots
- Wash thoroughly
- Grind the roots using a grating mill
- Pour water onto dried roots and leave to soak for 24 hours, then grind
- · Store in clean fermentation vessels with a lid and fermentation plug
- Acidify to a pH of 2.8 3 using
 1.28 2.56 fl.oz/gal (1 2 l/hl) of SIHA Combi Acid Liquid acidifier or
- 8.35 25.04 lb/1,000 gal (100 300 g/hl) of SIHA Combi Acid Granulated acidifier
 Add 21.1 26.4 gal (80 100 l) of warm water per 220.5 lb (100 kg) of raw ingredient
- Add 0.42 0.83 lb/1,000 gal (5 10 g/hl) of SIHAZYM SupraMash Granulated enzyme per 220.5 lb (100 kg) of mash for maximum mash liquefaction and flavor release in combination with an Inulinase, and 6.40 – 12.80 fl.oz/1,000 gal (5 – 10 ml/hl) of SIHA Silicone Anti Foam Agent SE Concentrated
- Ensure even distribution!
- Starter temperature of 61 77 °F (16 25 °C) with 2.09 2.50 lb/1,000 gal (25 – 30 g/hl) of SIHA Active Yeast 6 (Distillery Yeast)
- Optimum nutrient supply through
 2.50 3.34 lb/1,000 gal (30 40 g/hl) of SIHA Fermentation Salt yeast nutrient or 25.04 – 33.38 lb/1,000 gal (300 – 400 g/hl) of SIHAFERM Plus

yeast and yeast nutrient Please observe user note for the optimum rehydration of yeast on page 11

• Fermentation period of 5 - 6 weeks

- Distill immediately after fermentation has completed
- 2.56 5.12 fl.oz/1,000 gal (2 4 ml/hl)
- of SIHA Silicone Anti Foam Agent SE Concentrated
- First and last runnings separation through fractionation and sensory testing in combination with a separation test, if necessary
- If applicable add SIHA Activated Carbon GE or SIHA Actiliq GE fining agent to reduce off-smell and off-flavor; for dosages see Technical Information Sheet
- If required add **SIHA GESIL** fining agent for harmonization; for dosages see Technical Information Sheet
- After storage adjust the distillate to drinking strength and store for a few days at 32 °F (0 °C)
- Filtration with BECO SELECT A 20 or BECO SELECT A 40 depth filter sheets in BECO COMPACT PLATE plate and frame filters

or BECO INTEGRA LAB 220 filtration system

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The general advantages:

- Selective retention of long-chain fatty acid esters
- Separation of haze-forming particles also at higher temperatures 41 46 °F (5 8 °C)
- Low ion content avoids secondary hazing
- Filtration gentle to both color and flavor

Recommended applications

SELECT A 40	Clarifying filtration for the separation of medium-strong haze; high dirt holding capacity	
SELECT A 20	Filtration for the separation of superfine particles; highest clarifying level for haze-free bottling	

Application	BECO [®] depth filter sheet	Filtration temperature*	Efficiency
Williams Christ pear	SELECT A 20	39 – 43 °F (4 – 6 °C)	81.02 – 102.13 gpm/ft² (200 – 250 l/m²/h)
Apple, pear	SELECT A 40 SELECT A 20	37 – 43 °F (3 – 6 °C)	102.13 – 122.76 gpm/ft² (250 – 300 l/m²/h)
Quince	SELECT A 40 SELECT A 20	37 – 43 °F (3 – 6 °C)	81.02 – 102.13 gpm/ft² (200 – 250 l/m²/h)
Pitted fruit, e.g. cherry	SELECT A 40 SELECT A 20	41 – 46 °F (5 – 8 °C)	122.76 – 143.13 gpm/ft² (300 – 350 l/m²/h)
Rowanberry	SELECT A 40 SELECT A 20	37 – 43 °F (3 – 6 °C)	81.02 – 102.13 gpm/ft² (200 – 250 l/m²/h)
Sloe	SELECT A 40 SELECT A 20	37 – 43 °F (3 – 6 °C)	122.76 – 143.13 gpm/ft² (300 – 350 l/m²/h)
Elderberry	SELECT A 40 SELECT A 20	36 – 43 °F (2 – 6 °C)	61.38 – 81.76 gpm/ft² (150 – 200 l/m²/h)
Marc brandy, grappa	SELECT A 40 SELECT A 20	32 – 37 °F (0 – 3 °C)	61.38 – 81.76 gpm/ft² (150 – 200 l/m²/h)



Detailed Technical Information Sheets on all the products mentioned in this brochure are available at www.eaton.com/filtration. *Filtration temperatures can vary depending on the product to be filtered



Must/water mixture (50/50) + SIHA Active Dry Yeast

Cooling to must temperature of fermentation tank

Fermentation tank: Ensure even distribution



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