

Bitterek

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **38**
- SRM **6.7**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **13 %/h**
- Boil size **28 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

Steps

- Temp **69 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **12.9 liter(s)** of strike water to **77.2C**
- Add grains
- Keep mash **60 min** at **69C**
- Keep mash **10 min** at **78C**
- Sparge using **19.4 liter(s)** of **76C** water or to achieve **28 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg (93%)	80 %	5
Grain	chateau crystal	0.3 kg (7%)	72 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sybilla	30 g	60 min	6.8 %
Boil	Fuggles	30 g	30 min	4.2 %
Boil	Sybilla	20 g	10 min	6.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
lallemand windsor	Ale	Dry	11 g	lallemand