

Bitter

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **34**
- SRM **4.2**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **17.5 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3 kg (54.5%)	80 %	5
Grain	Viking Pilsner malt	2 kg (36.4%)	82 %	4
Adjunct	Wheat, Flaked	0.5 kg (9.1%)	77 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fuggles	60 g	60 min	4.3 %
Aroma (end of boil)	Fuggles	30 g	15 min	4.3 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	250 ml	---