

# Bitter

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **81**
- SRM **10**

## Batch size

- Expected quantity of finished beer **30 liter(s)**
- Trub loss **5 %**
- Size with trub loss **31.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **38 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **30.1 liter(s)**
- Total mash volume **38.7 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **30.1 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **38 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	6 kg (69.8%)	80 %	5
Grain	Strzegom Karmel 150	0.6 kg (7%)	75 %	150
Grain	Viking Munich Malt	2 kg (23.3%)	78 %	22

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Fuggles	30 g	60 min	5 %
Boil	Golding	30 g	60 min	6.3 %
Boil	Bramling	50 g	60 min	7 %
Boil	Fuggles	20 g	15 min	5 %
Boil	Golding	20 g	15 min	6.3 %
Boil	Bramling	10 g	15 min	7 %
Dry Hop	Fuggles	30 g	6 day(s)	4.2 %
Dry Hop	Golding	30 g	6 day(s)	3.8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Safale S-04	Ale	Dry	22 g	Fermentis
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