

# Bitter

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **29**
- SRM **5.1**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **25 %/h**
- Boil size **15.1 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **10.4 liter(s)**
- Total mash volume **13 liter(s)**

## Steps

- Temp **67 C**, Time **90 min**
- Temp **78 C**, Time **2 min**

## Mash step by step

- Heat up **10.4 liter(s)** of strike water to **72.9C**
- Add grains
- Keep mash **90 min** at **67C**
- Keep mash **2 min** at **78C**
- Sparge using **7.3 liter(s)** of **76C** water or to achieve **15.1 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.3 kg (88.5%)	80 %	5
Grain	Biscuit Malt	0.15 kg (5.8%)	79 %	45
Grain	Słód owsiany Fawcett	0.15 kg (5.8%)	61 %	5

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fuggles'20	20 g	60 min	4.7 %
Boil	Fuggles'20	15 g	15 min	4.7 %
Boil	Fuggles'20	15 g	1 min	4.7 %

## Yeasts

Name	Type	Form	Amount	Laboratory
WLP066 - London Fog	Ale	Liquid	1000 ml	White Labs