

# BITTER

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- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **27**
- SRM **9.3**
- Style **Standard/Ordinary Bitter**

## 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 **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.4 liter(s)**
- Total mash volume **17.8 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**

## Mash step by step

- Heat up **13.4 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **16.4 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	4 kg (87.9%)	80 %	5
Grain	Karmelowy 150	0.2 kg (4.4%)	75 %	150
Grain	Jęczmień palony	0.05 kg (1.1%)	55 %	985
Grain	słód cokie	0.2 kg (4.4%)	--- %	---
Adjunct	owies	0.1 kg (2.2%)	--- %	---

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	30 g	60 min	7.4 %
Boil	Fuggles	10 g	5 min	5.4 %

## Yeasts

Name	Type	Form	Amount	Laboratory
fm	Ale	Liquid	30 ml	---