

# bitter

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **39**
- SRM **9.4**
- Style **Special/Best/Premium Bitter**

## Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **12.7 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **6 liter(s) / kg**
- Mash size **13.6 liter(s)**
- Total mash volume **15.8 liter(s)**

## Steps

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

## Mash step by step

- Heat up **13.6 liter(s)** of strike water to **72C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **1.4 liter(s)** of **76C** water or to achieve **12.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.9 kg (84.1%)	80 %	5
Grain	red crystal	0.06 kg (2.7%)	72 %	400
Grain	crystal I - Fawcett	0.1 kg (4.4%)	72 %	165
Grain	Płatki jęczmienne opiekane	0.2 kg (8.8%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Chinook PL	10 g	60 min	10 %
Boil	East Kent Goldings	10 g	20 min	5.1 %
Aroma (end of boil)	Bramling cross	10 g	5 min	6.1 %
Aroma (end of boil)	First Gold	10 g	5 min	8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
WLP002 - English Ale Yeast	Ale	Liquid	600 ml	White Labs