

# BITTER

- Gravity **10.5 BLG**
- ABV **4.2 %**
- IBU **29**
- SRM **6.6**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **10 %**
- Size with trub loss **28.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **35.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.9 liter(s)**
- Total mash volume **22.6 liter(s)**

## Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **10 min**

## Mash step by step

- Heat up **16.9 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **10 min** at **72C**
- Sparge using **24.6 liter(s)** of **76C** water or to achieve **35.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.8 kg (85.1%)	80 %	5
Grain	Biscuit Malt	0.36 kg (6.4%)	79 %	45
Grain	Caramunich® typ I	0.48 kg (8.5%)	73 %	80

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	MAGNUM	9.6 g	60 min	12.7 %
Boil	Hallertau Tradition	18 g	60 min	4.2 %
Boil	Izabella	18 g	60 min	5.1 %
Whirlpool	Hallertau Tradition	12 g	20 min	5 %
Whirlpool	Izabella	12 g	20 min	5.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - 1275 Thames Valley Ale	Ale	Liquid	60 ml	Wyeast Labs