

# Bitter

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **29**
- SRM **6.9**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **28.6 liter(s)**

## Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **15 min**

## Mash step by step

- Heat up **13.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **76C**
- Sparge using **19.6 liter(s)** of **76C** water or to achieve **28.6 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.7 kg (82.2%)	80 %	5
Grain	Biscuit Malt	0.35 kg (7.8%)	79 %	45
Grain	Caramunich® typ I	0.45 kg (10%)	73 %	80

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	First Gold	25 g	60 min	8 %
Boil	First Gold	15 g	20 min	8 %
Boil	First Gold	10 g	5 min	8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	7 g	Fermentis