

# Bitter

- Gravity **11.6 BLG**
- ABV ---
- IBU **33**
- SRM **9.6**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **43 liter(s)**
- Trub loss **10 %**
- Size with trub loss **47.3 liter(s)**
- Boil time **75 min**
- Evaporation rate **15 %/h**
- Boil size **56.2 liter(s)**

## Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **35 liter(s)**
- Total mash volume **45 liter(s)**

## Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **35 liter(s)** of strike water to **72.6C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **31.2 liter(s)** of **76C** water or to achieve **56.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	8 kg (80%)	80 %	4
Grain	Wheat, Flaked	1 kg (10%)	77 %	4
Grain	Fawcett - Crystal	0.5 kg (5%)	70 %	160
Grain	Weyermann - Melanoiden Malt	0.2 kg (2%)	81 %	53
Grain	Simpsons - Aromatic Malt	0.3 kg (3%)	82.5 %	49

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	80 g	60 min	6.5 %
Boil	Kent Goldings	40 g	10 min	5.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale
British Ale M07	Ale	Dry	10 g	Mangrove Jack's