

# Bitter

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **36**
- SRM **7.8**
- Style **Special/Best/Premium Bitter**

## Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **33.1 liter(s)**

## Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.3 liter(s)**
- Total mash volume **24.8 liter(s)**

## Steps

- Temp **55 C**, Time **5 min**
- Temp **65 C**, Time **65 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **19.3 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **65 min** at **65C**
- Keep mash **5 min** at **76C**
- Sparge using **19.3 liter(s)** of **76C** water or to achieve **33.1 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Maris Otter Extra	5 kg (90.9%)	80 %	4
Grain	Caramel/Crystal Malt - 120L	0.5 kg (9.1%)	72 %	150

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus	20 g	60 min	15.4 %
Boil	Fuggles	50 g	10 min	5.3 %
Boil	Fuggles	50 g	0 min	5.3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	---