

# Bitter

- Gravity **10.7 BLG**
- ABV **4.3 %**
- IBU **41**
- SRM **9**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **22.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.6 liter(s)**
- Total mash volume **16.2 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **12.6 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **13.9 liter(s)** of **76C** water or to achieve **22.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.2 kg (88.9%)	85 %	7
Grain	Weyermann - Light Munich Malt	0.25 kg (6.9%)	82 %	14
Grain	Caraaroma	0.15 kg (4.2%)	78 %	400

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Comet	20 g	55 min	8.3 %
Boil	Comet	10 g	10 min	8.3 %
Boil	Warrior	10 g	10 min	15.5 %
Boil	Warrior	20 g	5 min	15.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis