

# Bitter 2019

- Gravity **9 BLG**
- ABV **3.5 %**
- IBU **31**
- SRM **11.3**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **10.8 liter(s)**
- Total mash volume **14.4 liter(s)**

## Steps

- Temp **67 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **2 min**

## Mash step by step

- Heat up **10.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **20 min** at **67C**
- Keep mash **40 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **18.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	2.5 kg (69.4%)	79 %	6
Grain	Caracrystal	0.5 kg (13.9%)	73.5 %	150
Grain	Monachijski	0.3 kg (8.3%)	79 %	15
Grain	Pszeniczny	0.2 kg (5.6%)	82 %	5
Grain	Caraaroma	0.1 kg (2.8%)	74 %	400

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	15 g	60 min	8.8 %
Boil	Marynka	15 g	20 min	8.8 %
Aroma (end of boil)	Marynka	20 g	5 min	8.8 %

## Yeasts

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