

# Bitter

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **32**
- SRM **7.4**
- 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 **26.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4.4 liter(s) / kg**
- Mash size **20.2 liter(s)**
- Total mash volume **24.8 liter(s)**

## Steps

- Temp **68 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **3 min**

## Mash step by step

- Heat up **20.2 liter(s)** of strike water to **73.5C**
- Add grains
- Keep mash **45 min** at **68C**
- Keep mash **15 min** at **72C**
- Keep mash **3 min** at **78C**
- Sparge using **10.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg (87%)	80 %	5
Grain	Strzegom Bursztynowy cookie	0.2 kg (4.3%)	70 %	49
Grain	Caramunich® typ I	0.4 kg (8.7%)	73 %	105

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	9.5 %
Boil	Marynka	20 g	15 min	9.5 %
Aroma (end of boil)	Marynka	40 g	0 min	9.5 %

## Yeasts

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