

# Bitter

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **29**
- SRM **8.8**
- Style **Special/Best/Premium 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 **23.8 liter(s)**

## Mash information

- Mash efficiency **80 %**
- 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 **14.8 liter(s)** of **76C** water or to achieve **23.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.2 kg (88.9%)	85 %	7
Grain	Caraaroma	0.15 kg (4.2%)	78 %	400
Grain	Strzegom Monachijski typ I	0.25 kg (6.9%)	79 %	16

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Willamette	20 g	60 min	5 %
Aroma (end of boil)	Willamette	10 g	10 min	5 %
Aroma (end of boil)	Warrior	10 g	10 min	15.5 %
Aroma (end of boil)	Warrior	20 g	5 min	15.5 %

## Yeasts

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