

# Schwarzbier piwowar

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **28**
- SRM **21.4**
- Style **Schwarzbier**

## 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 **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

## Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **17.5 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.1 kg (82%)	81 %	4
Grain	Słód Caramunich Typ II Weyermann	0.25 kg (5%)	73 %	120
Grain	Biscuit Malt	0.25 kg (5%)	79 %	45
Grain	Carafa II	0.25 kg (5%)	70 %	812
Grain	Fawcett - Pale Chocolate	0.15 kg (3%)	71 %	600

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	15 g	60 min	12.2 %
Boil	Hallertau Mittelfruh	35 g	15 min	3 %
Boil	Hallertau Mittelfruh	25 g	5 min	3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
WLP830 - German Lager Yeast	Lager	Liquid	2000 ml	White Labs