

Schwarzbier

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **27**
- SRM **19.9**
- Style **Schwarzbier**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.7 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **17.7 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2.5 kg (50%)	81 %	4
Grain	Monachijski	2 kg (40%)	80 %	16
Grain	Cara Gold Castlemalting	0.2 kg (4%)	78 %	120
Grain	Chocolate Malt (UK)	0.15 kg (3%)	73 %	887
Grain	Castle Malting - Chocolate Wheat	0.1 kg (2%)	74 %	950
Grain	Jęczmień palony	0.05 kg (1%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sladek	25 g	60 min	8.15 %
Boil	Hersbrucker	35 g	15 min	2.8 %
Aroma (end of boil)	Hersbrucker	15 g	5 min	2.8 %