

SCHWARZBIER IV

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **22**
- SRM **21.8**
- 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 **78 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.1 liter(s)**
- Total mash volume **20.2 liter(s)**

Steps

- Temp **52 C**, Time **10 min**
- Temp **62 C**, Time **35 min**
- Temp **70 C**, Time **30 min**
- Temp **78 C**, Time **2 min**

Mash step by step

- Heat up **15.1 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **35 min** at **62C**
- Keep mash **30 min** at **70C**
- Keep mash **2 min** at **78C**
- Sparge using **15.2 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	BESTMALZ - Best Pilsen	2.27 kg (45%)	80.5 %	4
Grain	BESTMALZ - Best Minich	2.27 kg (45%)	80.5 %	16
Grain	Karmelowy Jasny 30EBC	0.23 kg (4.5%)	75 %	30
Grain	Strzegom Czekoladowy 1200	0.18 kg (3.6%)	68 %	1202
Grain	Jęczmień palony	0.09 kg (1.8%)	55 %	1000

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Tradition	27.27 g	60 min	5 %
Boil	Hallertau Tradition	18.18 g	20 min	5 %
Aroma (end of boil)	Hallertau Tradition	13.64 g	5 min	5 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Saflager W 34/70	Lager	Slant	381.82 ml	---
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Extras

Type	Name	Amount	Use for	Time
Fining	whirlflock	1.14 g	Boil	10 min