

Altbier

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **38**
- SRM **14.8**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **17.5 liter(s)**
- Trub loss **20 %**
- Size with trub loss **21 liter(s)**
- Boil time **75 min**
- Evaporation rate **12 %/h**
- Boil size **27.1 liter(s)**

Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

Steps

- Temp **63 C**, Time **30 min**
- Temp **73 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **14.4 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **45 min** at **73C**
- Keep mash **10 min** at **78C**
- Sparge using **17.5 liter(s)** of **76C** water or to achieve **27.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	1 kg (19.3%)	82 %	4
Grain	Viking Munich Malt	3 kg (58%)	78 %	18
Grain	Strzegom Karmel 300	0.25 kg (4.8%)	70 %	299
Grain	Fawcett - Pszeniczny Czekoladowy	0.05 kg (1%)	73 %	1001
Grain	Strzegom Bursztynowy	0.5 kg (9.7%)	70 %	49
Sugar	Glukoza	0.372 kg (7.2%)	95 %	---

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	20 g	60 min	11 %
Boil	Perle	14 g	60 min	7 %
Boil	Lublin (Lubelski)	20 g	20 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
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US-05	Ale	Dry	11 g	Saflager
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Extras

Type	Name	Amount	Use for	Time
Fining	Mech Irlandzki	3 g	Boil	10 min