

ALTBIER

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **50**
- SRM **8.8**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **4 %**
- Size with trub loss **25 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29.6 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **21.7 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.6 liter(s)** of strike water to **70.7C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **29.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	3.25 kg (64.5%)	80 %	16
Grain	Wiedeński	1.75 kg (34.7%)	79 %	10
Grain	Barwiący	0.038 kg (0.8%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	39 g	60 min	7.1 %
Boil	Perle	30 g	40 min	7.1 %
Boil	Hersbrucker	25 g	15 min	4.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
WLP036 - Dusseldorf Alt Yeast	Ale	Liquid	40 ml	White Labs