

## altbier

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **45**
- SRM **12.1**
- Style **Düsseldorf Altbier**

### Batch size

- Expected quantity of finished beer **32 liter(s)**
- Trub loss **5 %**
- Size with trub loss **33.6 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **41.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **25.3 liter(s)**
- Total mash volume **33.8 liter(s)**

### Steps

- Temp **53 C**, Time **15 min**
- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **2 min**

### Mash step by step

- Heat up **25.3 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **15 min** at **53C**
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **24.6 liter(s)** of **76C** water or to achieve **41.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.5 kg (53.3%)	81 %	4
Grain	Strzegom Monachijski typ II	2.5 kg (29.6%)	79 %	22
Grain	Słód pszeniczny Weyermann	1 kg (11.8%)	80 %	4
Grain	Słód Caramunich Typ II Weyermann	0.3 kg (3.6%)	73 %	120
Grain	Carafa II	0.15 kg (1.8%)	70 %	812

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	45 g	60 min	13.5 %
Boil	Hallertau Mittelfruh	35 g	15 min	3 %
Boil	Hallertau Mittelfruh	25 g	5 min	3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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FM42 Stare Nadreńskie	Ale	Liquid	48 ml	Fermentum Mobile
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