

## 7B. Altbier

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **41**
- SRM **14.5**
- Style **Düsseldorf Altbier**

### Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **3 %**
- Size with trub loss **15.4 liter(s)**
- Boil time **90 min**
- Evaporation rate **7 %/h**
- Boil size **17.9 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **4.05 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **18.7 liter(s)**

### Steps

- Temp **53 C**, Time **10 min**
- Temp **63 C**, Time **45 min**
- Temp **73 C**, Time **15 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **57.1C**
- Add grains
- Keep mash **10 min** at **53C**
- Keep mash **45 min** at **63C**
- Keep mash **15 min** at **73C**
- Keep mash **5 min** at **76C**
- Sparge using **6.6 liter(s)** of **76C** water or to achieve **17.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2.4 kg (64.9%)	81 %	4
Grain	Strzegom Monachijski typ II	1 kg (27%)	79 %	22
Grain	Special x	0.3 kg (8.1%)	70 %	350

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	19 g	60 min	13.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Lutra	Ale	Dry	10 g	---

### Extras

Type	Name	Amount	Use for	Time
Water Agent	CaCO3	2 g	Mash	60 min
Water Agent	CaCl2	2 g	Mash	60 min

## Notes

- 12 dni 18C  
7 dni 2C  
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