

# alterbier

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **40**
- SRM **14.9**
- Style **Düsseldorf Altbier**

## Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **14.2 liter(s)**

## Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.9 liter(s)**
- Total mash volume **13.2 liter(s)**

## Steps

- Temp **53 C**, Time **15 min**
- Temp **63 C**, Time **30 min**
- Temp **73 C**, Time **30 min**

## Mash step by step

- Heat up **9.9 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **15 min** at **53C**
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **73C**
- Sparge using **7.6 liter(s)** of **76C** water or to achieve **14.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	3.2 kg (97%)	80 %	16
Grain	Strzegom Karmel 600	0.1 kg (3%)	73 %	601

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	hallertau tradition	20 g	55 min	7.1 %
15min				
Boil	hallertau tradition	10 g	25 min	7.1 %
45min				
Boil	hallertau tradition	10 g	5 min	7.1 %
65min				

## Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11.5 g	fermentis