

# Dusseldorf Altbier

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **43**
- SRM **14.2**
- Style **Düsseldorf Altbier**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **14.5 %/h**
- Boil size **28.6 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **23.3 liter(s)**

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner Malt	4 kg (68.6%)	81 %	5
Grain	Munich Malt	1 kg (17.2%)	80 %	25
Grain	Aromatic Malt	0.5 kg (8.6%)	78 %	51
Grain	Caramunich® typ I	0.24 kg (4.1%)	73 %	90
Grain	Weyermann - Carafa II	0.09 kg (1.5%)	70 %	1100

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	30 g	60 min	11.5 %
Boil	Tettnang	25 g	15 min	3.8 %
Boil	Tettnang	25 g	5 min	3.8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale K-97	Ale	Dry	11.5 g	Fermentis

## Extras

Type	Name	Amount	Use for	Time
Finning	irish moss	5 g	Boil	10 min

## Notes

- Malts added to 17.5 l of water at 72C  
Single Decoction:  
infusing for 50 minutes to Conversion Rest (total: 1h 45min)  
pulled 4l out of the mash, rested 70-72 for 15 min then boiled for 25 min  
added decoction and mashed out at 75 C  
bedded 3l for lautering, sparged with 15l (75C) - went down from 20 to 11.1 brix  
29l set for boiling for 90 min  
13.9 brix after boiling (13.4 blg)

8 brix after 20 days of fermentation in 16-18 C (7.7 b/g) => efficiency: 43%  
temp ramped up to 21 C for last week  
Final Gravity => 7.2 b/g, efficiency < 50%  
expected ABV => 4,0%  
carbonation 2.2 (110g per 21l)  
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