

A2

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **40**
- SRM **13.9**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **9 liter(s)**
- Trub loss **10 %**
- Size with trub loss **9.9 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **13 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **8.3 liter(s)**
- Total mash volume **10.7 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **77 C**, Time **0 min**

Mash step by step

- Heat up **8.3 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **77C**
- Sparge using **7.1 liter(s)** of **76C** water or to achieve **13 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Bohemian Pilsner Malt	1.35 kg (57%)	81 %	4
Grain	Monachijski typ II 20-25 EBC Weyermann	0.75 kg (31.6%)	78 %	20
Grain	Weyermann - Caramunich II	0.1 kg (4.2%)	73 %	120
Grain	Weyermann - Carafa Special II	0.05 kg (2.1%)	65 %	1150
Grain	Viking Wheat Malt	0.12 kg (5.1%)	82 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Mittelfruh	24 g	60 min	4.6 %
Boil	lunga	4 g	60 min	10 %
Boil	Hallertau Mittelfruh	10 g	15 min	4.6 %
Whirlpool	Hallertau Mittelfruh	10 g	---	4.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
safale k-97	Ale	Dry	11.5 g	---