

Alt

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **36**
- SRM **13.9**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **23.4 liter(s)**

Steps

- Temp **63 C**, Time **20 min**
- Temp **82 C**, Time **40 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **17.5 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **0 min** at **78C**
- Keep mash **40 min** at **82C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	3 kg (51.3%)	82 %	4
Grain	Strzegom Monachijski typ II	1 kg (17.1%)	79 %	22
Grain	Strzegom Wiedeński	1 kg (17.1%)	79 %	10
Grain	Strzegom Karmel 50	0.5 kg (8.5%)	75 %	50
Grain	Viking red ale	0.25 kg (4.3%)	75 %	70
Grain	Weyermann - Carafa III	0.1 kg (1.7%)	70 %	1024

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Hallertau tradition	50 g	60 min	4.6 %
Aroma (end of boil)	Hallertau tradition	25 g	15 min	4.6 %
Aroma (end of boil)	Hallertau tradition	25 g	5 min	4.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
German ale	Ale	Liquid	1000 ml	Fm