

Alt

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **27**
- SRM **11.3**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **19 liter(s)**

Mash information

- Mash efficiency **75 %**
- 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 **12.4 liter(s)** of **76C** water or to achieve **19 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Light Munich Malt	3 kg (90.9%)	82 %	14
Grain	Caraaroma	0.1 kg (3%)	78 %	400
Grain	Weyermann - Carawheat	0.2 kg (6.1%)	77 %	97

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Spalt	10 g	60 min	5.5 %
Boil	Tradition	10 g	60 min	5.5 %
Boil	Spalt	10 g	25 min	5.5 %
Boil	Tradition	10 g	15 min	5.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safbrew S-33	Ale	Dry	11.5 g	Fermentis