

Alt

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **30**
- SRM **9.1**
- Style **Northern German Altbier**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.9 liter(s)**
- Total mash volume **19.9 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **14.9 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	3 kg (60.6%)	82 %	4
Grain	Viking Munich Malt	1.5 kg (30.3%)	78 %	18
Grain	Karmelowy żytni Strzegom	0.41 kg (8.1%)	75 %	150
Grain	Viking Wheat Malt	0.06 kg (1%)	83 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Tradition	49.99 g	45 min	5 %
Boil	Hallertau Tradition	20.01 g	15 min	5 %
Aroma (end of boil)	Hallertau Tradition	5 g	1 min	5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.49 g	Fermentis