

altbier

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **25**
- SRM **13**
- Style **Northern German Altbier**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.7 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **4.5 liter(s) / kg**
- Mash size **22.5 liter(s)**
- Total mash volume **27.5 liter(s)**

Steps

- Temp **66 C**, Time **50 min**
- Temp **76 C**, Time **10 min**
- Temp **72 C**, Time **10 min**

Mash step by step

- Heat up **22.5 liter(s)** of strike water to **71.1C**
- Add grains
- Keep mash **50 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **10.2 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	karmelowy	0.4 kg (8%)	80 %	300
Grain	Pilzneński	0.6 kg (12%)	81 %	4
Grain	Strzegom Monachijski typ I	4 kg (80%)	79 %	15

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Spalt Select	50 g	50 min	3.9 %
Boil	Hallertau Mittelfruh	10 g	10 min	3.1 %
Boil	Cascade PL	10 g	50 min	5.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale K-97	Ale	Liquid	300 ml	Fermentis