

# Bitter Viking Alt

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **118**
- SRM **4**
- 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 **70 min**
- Evaporation rate **10 %/h**
- Boil size **26.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**

## Mash step by step

- Heat up **20 liter(s)** of strike water to **69.5C**
- Add grains
- Keep mash **60 min** at **64C**
- Sparge using **11.8 liter(s)** of **76C** water or to achieve **26.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5 kg (100%)	80 %	5

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	25 g	60 min	13 %
Boil	Magnum	58 g	50 min	13.5 %
Boil	Puławski	20 g	5 min	8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	20 g	Fermentis