

## apa

- Gravity **13.3 BLG**
- ABV ---
- IBU **40**
- SRM **3.8**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **28.9 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **24 liter(s)**

### Steps

- Temp **63 C**, Time **45 min**
- Temp **72 C**, Time **15 min**

### Mash step by step

- Heat up **18 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **45 min** at **63C**
- Keep mash **15 min** at **72C**
- Sparge using **16.9 liter(s)** of **76C** water or to achieve **28.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	6 kg (100%)	82 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	10 g	60 min	11 %
Boil	Citra	5 g	40 min	12 %
Boil	Cascade	5 g	40 min	8 %
Boil	Galaxy	5 g	40 min	15 %
Boil	Citra	5 g	20 min	12 %
Boil	Cascade	5 g	20 min	6 %
Boil	Galaxy	5 g	20 min	15 %
Boil	Citra	10 g	5 min	12 %
Boil	Cascade	10 g	5 min	6 %
Boil	Galaxy	10 g	5 min	15 %
Dry Hop	Citra	10 g	5 day(s)	12 %
Dry Hop	Cascade	10 g	5 day(s)	6 %
Dry Hop	Galaxy	10 g	5 day(s)	15 %
Dry Hop	Citra	10 g	2 day(s)	12 %

Dry Hop	Cascade	10 g	2 day(s)	6 %
Dry Hop	Galaxy	10 g	2 day(s)	15 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11.5 g	---