

Papa

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **35**
- SRM **11.3**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **14.5 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.3 liter(s)**
- Total mash volume **12.4 liter(s)**

Steps

- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **20 min**

Mash step by step

- Heat up **9.3 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **30 min** at **72C**
- Keep mash **20 min** at **78C**
- Sparge using **8.3 liter(s)** of **76C** water or to achieve **14.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2 kg (64.5%)	80 %	5
Grain	Pale Malt (2 Row) UK	1 kg (32.3%)	78 %	6
Grain	karmelowy ciemny	0.1 kg (3.2%)	68 %	600

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade	10 g	50 min	6 %
Boil	Mandarina Bavaria	6 g	50 min	7.1 %
Boil	Chinook	5 g	50 min	13 %
Aroma (end of boil)	Mandarina Bavaria	10 g	5 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	5 g	Fermentis