

# gratis apa

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **58**
- SRM **4.4**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.4 liter(s)**
- Total mash volume **21.1 liter(s)**

## Steps

- Temp **66 C**, Time **70 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **16.4 liter(s)** of strike water to **72.6C**
- Add grains
- Keep mash **70 min** at **66C**
- Keep mash **10 min** at **78C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.5 kg (74.5%)	80 %	5
Grain	Viking Vienna Malt	1 kg (21.3%)	79 %	7
Grain	Karmelowy Jasny 30EBC	0.2 kg (4.3%)	75 %	30

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	30 g	60 min	12 %
Boil	Citra	15 g	30 min	12 %
Boil	Citra	10 g	5 min	12 %
Aroma (end of boil)	Amarillo	10 g	1 min	9.5 %
Dry Hop	Amarillo	60 g	5 day(s)	9.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

## Extras

Type	Name	Amount	Use for	Time
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Fining	whirlfloc	1 g	Boil	15 min
Other	łuska ryżowa	500 g	Mash	80 min