

## ppa3

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- Gravity **14.7 BLG**
- ABV ---
- IBU **42**
- SRM **12.7**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.8 liter(s)**
- Total mash volume **25 liter(s)**

### Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

### Mash step by step

- Heat up **18.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3 kg (48%)	80 %	---
Grain	Strzegom Pilzneński	2 kg (32%)	80 %	---
Grain	Strzegom Monachijski typ I	1 kg (16%)	79 %	150
Grain	Karmelowy munich light	0.25 kg (4%)	80 %	90

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	40 g	60 min	10 %
Aroma (end of boil)	Amarillo	10 g	10 min	9.5 %
Whirlpool	Cascade	10 g	0 min	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11 g	fermentis