

## pale ale 2016

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- Gravity **14.3 BLG**
- ABV ---
- IBU **48**
- SRM **6.6**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **4 %**
- Size with trub loss **21.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **21.2 liter(s)**

### Steps

- Temp **65 C**, Time **60 min**
- Temp **78 C**, Time **15 min**

### Mash step by step

- Heat up **15.9 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **15 min** at **78C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner Mal	2.4 kg (45.3%)	80 %	5
Grain	Weyermann - Pale Ale Malt	1.5 kg (28.3%)	80 %	6.5
Grain	Weyermann - Light Munich Malt	0.45 kg (8.5%)	80 %	7
Grain	Carahell	0.8 kg (15.1%)	77 %	25
Grain	Abbey Castle	0.15 kg (2.8%)	75 %	45

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	12 g	60 min	13.5 %
Boil	Centennial	6 g	30 min	9.7 %
Boil	Columbus/Tomahawk/Zeus	7 g	30 min	16.8 %
Boil	Columbus/Tomahawk/Zeus	8 g	15 min	16.8 %
Boil	Centennial	9 g	15 min	9.7 %
Boil	Columbus/Tomahawk/Zeus	10 g	2 min	16.8 %
Boil	Centennial	10 g	2 min	9.7 %
Dry Hop	Columbus/Tomahawk/Zeus	100 g	5 day(s)	16.8 %

Dry Hop	Centennial	100 g	5 day(s)	9.7 %
Dry Hop	Cascade	100 g	5 day(s)	6 %

## Yeasts

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

## Extras

Type	Name	Amount	Use for	Time
Fining	mech irlandzki	5 g	Boil	15 min

## Notes

- wyszło przed fermentacją 21L ... 13,1 blg, celowałem w 12- 12,5 przy ilości gotowego piwa 22L.. na upartego wyszło by 22l brzezki nastawnej, ale złało by się trochę chmielin pewnie... drożdże zadane w 17stopniach.. pierwsze 2 dni z obawy przed gwałtownym startem fermentacji w 15 stopniach zewnętrznej temp. później spróbujemy 19st.  
*Feb 26, 2017, 10:32 PM*