

## pierwsze

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **44**
- SRM **3.6**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **23.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

### Steps

- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.9 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **14.5 liter(s)** of **76C** water or to achieve **23.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilsner (2 Row) Ger	4 kg (93%)	81 %	4
Grain	Bestmalz Carmel Pils	0.3 kg (7%)	75 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Lublin (Lubelski)	40 g	10 min	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	10 g	Fermentis

### Notes

- po 3 dniach zatrzymana ferm. refraktometr:8,5  
proba wznowienia  
1-2 dni powolna ferm  
po11 dniach : 4,5 blg  
12.04 butelkowanie bez cukru 34 butelki  
*Apr 12, 2018, 12:28 AM*