

warka1

- Gravity **10.5 BLG**
- ABV **4.2 %**
- IBU **27**
- SRM **7**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **24.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **16 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **40 min**

Mash step by step

- Heat up **16 liter(s)** of strike water to **68.4C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **40 min** at **72C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **24.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Castle Pale Ale	3.8 kg (95%)	80 %	8
Grain	Strzegom Karmel 150	0.2 kg (5%)	75 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	chinook	20 g	60 min	8.5 %
Aroma (end of boil)	cascade	20 g	20 min	4 %

Yeasts

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