

#4_20_Patriot

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **40**
- SRM **5.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.3 liter(s)**
- Total mash volume **21 liter(s)**

Steps

- Temp **64 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.3 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **20 min** at **64C**
- Keep mash **40 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	2.5 kg (53.5%)	80.5 %	3
Grain	Munich Malt	0.9 kg (19.3%)	80 %	15
Grain	Briess - Vienna Malt	1 kg (21.4%)	77.5 %	9
Grain	Weyermann - Melanoiden Malt	0.27 kg (5.8%)	81 %	53

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Puławski	25 g	20 min	7.6 %
Boil	Izabella	20 g	20 min	5.1 %
Boil	Puławski	15 g	5 min	7.6 %
Whirlpool	Izabella	40 g	20 min	5.1 %
Whirlpool	Puławski	40 g	20 min	7.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis

Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc	1.5 g	Boil	10 min