

# Pirotechnik

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **47**
- SRM **6.3**
- Style **American IPA**

## Batch size

- Expected quantity of finished beer **14 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **18.5 liter(s)**

## Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **18.5 liter(s)**

## Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **3 min**

## Mash step by step

- Heat up **14.4 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **10 min** at **72C**
- Keep mash **3 min** at **78C**
- Sparge using **8.2 liter(s)** of **76C** water or to achieve **18.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	3 kg (73.2%)	82 %	4
Grain	Monachijski	0.6 kg (14.6%)	80 %	16
Grain	Karmelowy Czerwony	0.15 kg (3.7%)	75 %	59
Grain	Weyermann - Carapils	0.2 kg (4.9%)	78 %	4
Grain	Weyermann - Carared	0.15 kg (3.7%)	75 %	45

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Warrior	15 g	45 min	15.5 %
Boil	Mosaic	15 g	15 min	10 %
Aroma (end of boil)	Mosaic	10 g	5 min	10 %
Dry Hop	Mosaic	20 g	3 day(s)	10 %
Dry Hop	Chinook	45 g	3 day(s)	13 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M44 US West Coast	Ale	Dry	10.06 g	---

### Extras

Type	Name	Amount	Use for	Time
Fining	Mech Irlandzki	4.38 g	Boil	10 min