

# Improviza

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **38**
- SRM **4.3**
- Style **American IPA**

## Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **34.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **26.6 liter(s)**
- Total mash volume **34.2 liter(s)**

## Steps

- Temp **52 C**, Time **30 min**
- Temp **67 C**, Time **90 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **26.6 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **30 min** at **52C**
- Keep mash **90 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **15.2 liter(s)** of **76C** water or to achieve **34.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.8 kg (63.2%)	80 %	5
Grain	Viking Pilsner malt	1 kg (13.2%)	82 %	4
Grain	Pszeniczny	1.3 kg (17.1%)	85 %	4
Grain	Płatki owsiane	0.5 kg (6.6%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	18 g	60 min	13 %
Boil	Sticklebract	25 g	20 min	12 %
Aroma (end of boil)	WAI-ITI	25 g	5 min	4.1 %
Aroma (end of boil)	Sticklebract	25 g	5 min	12 %
Aroma (end of boil)	Sticklebract	25 g	0 min	12 %
Aroma (end of boil)	Sticklebract	25 g	0 min	12 %
Aroma (end of boil)	WAI-ITI	25 g	0 min	4.1 %
Aroma (end of boil)	Chinook	10 g	0 min	11 %
Whirlpool	Centennial	28 g	0 min	10.5 %

78 C dodano chmiel - cały czas chłodząc brzeczkę.

Whirlpool	Cascade	28 g	0 min	8.1 %
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### Yeasts

Name	Type	Form	Amount	Laboratory
FM54 Gorączka kalifornijska	Ale	Liquid	30 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
Water Agent	Gips piwowarski	4 g	Mash	120 min
Spice	Zest Pomarańcza	20 g	Boil	10 min