

## Bitter v45L v.2

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- Gravity **10.7 BLG**
- ABV ---
- IBU **44**
- SRM **9.7**
- Style **Special/Best/Premium Bitter**

### Batch size

- Expected quantity of finished beer **45 liter(s)**
- Trub loss **10 %**
- Size with trub loss **49.5 liter(s)**
- Boil time **65 min**
- Evaporation rate **15 %/h**
- Boil size **62.8 liter(s)**

### Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **33.3 liter(s)**
- Total mash volume **42.8 liter(s)**

### Steps

- Temp **65 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **33.3 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **30 min** at **65C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **39 liter(s)** of **76C** water or to achieve **62.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	8 kg (84.2%)	80.5 %	2
Grain	Pale Crystal - Thomas Fawcett	0.4 kg (4.2%)	74 %	75
Grain	Jęczmień palony	0.1 kg (1.1%)	55 %	985
Grain	Briess - Wheat Malt, White	1 kg (10.5%)	85 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	50 g	60 min	11.6 %
Boil	Challenger	30 g	30 min	6.5 %
Boil	Fuggles	40 g	10 min	5.2 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	---
Mangrove Jack's M07 British Ale	Ale	Dry	10 g	---