

## Bitter #1

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- Gravity **11.7 BLG**
- ABV ---
- IBU **38**
- SRM **8.9**
- Style **Standard/Ordinary Bitter**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.2 liter(s)**
- Total mash volume **18.9 liter(s)**

### Steps

- Temp **68 C**, Time **60 min**

### Mash step by step

- Heat up **14.2 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **22.2 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Malt Europe	4 kg (84.5%)	80 %	7
Grain	Karmelowy Strzegom	0.4 kg (8.4%)	80 %	30
Grain	Brown Malt (British Chocolate)	0.2 kg (4.2%)	70 %	150
Grain	Oats, Flaked	0.135 kg (2.9%)	80 %	2

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	13.5 %
Aroma (end of boil)	Fuggles	50 g	15 min	4.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM11 Wichrowe Wzgórza	Ale	Liquid	1000 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
Finning	Mech irlandzki	4 g	Boil	5 min