

## Bitter #1

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **49**
- SRM **11**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

### Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **42 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **50.6 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **21.8 liter(s)**
- Total mash volume **30.5 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**

### Mash step by step

- Heat up **21.8 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **37.5 liter(s)** of **76C** water or to achieve **50.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	7.5 kg (86.2%)	80 %	5
Grain	Strzegom Karmel 150	0.8 kg (9.2%)	75 %	150
Grain	Barley, Flaked	0.3 kg (3.4%)	70 %	4
Grain	Fawcett - Pszeniczny Czekoladowy	0.1 kg (1.1%)	73 %	1001

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Herkules	50 g	60 min	17 %
Whirlpool	Phoenix	25 g	5 min	11 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale