

## #16 Bitter

- Gravity **8.8 BLG**
- ABV **3.4 %**
- IBU **27**
- SRM **8**
- Style **Standard/Ordinary Bitter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

### Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **15.4 liter(s)**

### Steps

- Temp **64 C**, Time **60 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **12 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **1 min** at **76C**
- Sparge using **16.9 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	3.2 kg (93.3%)	79 %	6
Grain	Weyermann - Dehusked Carafa III	0.03 kg (0.9%)	70 %	1024
Grain	Strzegom Karmel 150	0.2 kg (5.8%)	75 %	150

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	10.5 %
Boil	English Golding	30 g	1 min	5.2 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	---

### Extras

Type	Name	Amount	Use for	Time
Finning	Mech Irlandzki	5 g	Boil	15 min