

## #7 bitter browamator

- Gravity **9.8 BLG**
- ABV **3.8 %**
- IBU **42**
- SRM **8.5**
- 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 **60 min**
- Evaporation rate **13.5 %/h**
- Boil size **26.1 liter(s)**

### Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **4.7 liter(s) / kg**
- Mash size **16.9 liter(s)**
- Total mash volume **20.5 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **16.9 liter(s)** of strike water to **72C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **76C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **26.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.2 kg (88.9%)	85 %	7
Grain	Monachijski typ II 20-25 EBC Weyermann	0.25 kg (6.9%)	80 %	20
Grain	Caraaroma	0.15 kg (4.2%)	78 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Comet	20 g	60 min	8.3 %
Boil	Warrior	10 g	15 min	15.5 %
Boil	Comet	10 g	15 min	8.3 %
Boil	Warrior	20 g	5 min	15.5 %

### Yeasts

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

### Notes

- fermentacja 21 dni - 19-21C  
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