

## Bitter Polish Hops #3

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- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **30**
- SRM **8.2**
- Style **Special/Best/Premium Bitter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.6 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

### Steps

- Temp **64 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **12 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **1 min** at **78C**
- Sparge using **19.6 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Simpsons - Maris Otter	3.3 kg (82.5%)	81 %	6
Grain	Fawcett - Crystal	0.3 kg (7.5%)	70 %	160
Grain	Biscuit Malt	0.4 kg (10%)	79 %	45

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	15 g	60 min	10 %
Boil	Zula	10 g	20 min	9 %
Boil	Oktawia	10 g	10 min	8 %
Boil	Oktawia	20 g	5 min	8 %

### Yeasts

Name	Type	Form	Amount	Laboratory
WLP002 - English Ale Yeast	Ale	Slant	70 ml	White Labs