

## Bitter HB v45L

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- Gravity **9.6 BLG**
- ABV ---
- IBU **36**
- SRM **11**
- Style **Special/Best/Premium Bitter**

### Batch size

- Expected quantity of finished beer **45 liter(s)**
- Trub loss **10 %**
- Size with trub loss **49.5 liter(s)**
- Boil time **65 min**
- Evaporation rate **15 %/h**
- Boil size **57.5 liter(s)**

### Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **29.8 liter(s)**
- Total mash volume **38.3 liter(s)**

### Steps

- Temp **65 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **29.8 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **30 min** at **65C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **36.2 liter(s)** of **76C** water or to achieve **57.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	8 kg (94.1%)	80.5 %	2
Grain	Fawcett - Crystal	0.4 kg (4.7%)	70 %	160
Grain	Jęczmień palony	0.1 kg (1.2%)	55 %	985

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	42 g	60 min	7 %
Boil	Kent Goldings	60 g	15 min	5.5 %
Boil	Chinook	15 g	60 min	11.7 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	23 g	Safale