

## Bitter v45L v.2

- Gravity **10.7 BLG**
- ABV ---
- IBU **44**
- SRM **9.7**
- 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 **62.8 liter(s)**

### Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **33.3 liter(s)**
- Total mash volume **42.8 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 **33.3 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 **39 liter(s)** of **76C** water or to achieve **62.8 liter(s)** of wort

### Fermentables

| Type  | Name                          | Amount        | Yield  | EBC |
|-------|-------------------------------|---------------|--------|-----|
| Grain | Briess - Pilsen Malt          | 8 kg (84.2%)  | 80.5 % | 2   |
| Grain | Pale Crystal - Thomas Fawcett | 0.4 kg (4.2%) | 74 %   | 75  |
| Grain | Jęczmień palony               | 0.1 kg (1.1%) | 55 %   | 985 |
| Grain | Briess - Wheat Malt, White    | 1 kg (10.5%)  | 85 %   | 5   |

### Hops

| Use for | Name       | Amount | Time   | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil    | Chinook    | 50 g   | 60 min | 11.6 %     |
| Boil    | Challenger | 30 g   | 30 min | 6.5 %      |
| Boil    | Fuggles    | 40 g   | 10 min | 5.2 %      |

### Yeasts

| Name                            | Type | Form | Amount | Laboratory |
|---------------------------------|------|------|--------|------------|
| Safale S-04                     | Ale  | Dry  | 11.5 g | ---        |
| Mangrove Jack's M07 British Ale | Ale  | Dry  | 10 g   | ---        |