

## Bitter 1/2

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- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **25**
- SRM **4.3**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **12.3 liter(s)**

### Mash information

- Mash efficiency **63 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9 liter(s)**
- Total mash volume **12 liter(s)**

### Steps

- Temp **55 C**, Time **0 min**
- Temp **52 C**, Time **10 min**
- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

### Mash step by step

- Heat up **9 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **0 min** at **55C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **6.3 liter(s)** of **76C** water or to achieve **12.3 liter(s)** of wort

### Fermentables

| Type  | Name                              | Amount      | Yield | EBC |
|-------|-----------------------------------|-------------|-------|-----|
| Grain | Weyermann - Bohemian Pilsner Malt | 3 kg (100%) | 81 %  | 4   |

### Hops

| Use for | Name        | Amount | Time   | Alpha acid |
|---------|-------------|--------|--------|------------|
| Boil    | Sorachi Ace | 15 g   | 30 min | 10 %       |
| Boil    | Sorachi Ace | 15 g   | 0 min  | 10 %       |

### Yeasts

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

### Notes

- Piwo robione od godziny 18:00 dnia 8 grudnia 2018 r. Odwiedzili mnie wtedy przyjaciele i z ich pomocą piwo było warzone. Wyladzane do okolo 14 litrów, można było troszkę więcej. Piwo fermentuje od początku w piwnicy na podłodze. Fermentuje przy odszczelnionej pokrywie fermentora.  
*Dec 10, 2018, 2:50 PM*