

# BITTER 1

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- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **71**
- SRM **9.6**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **0 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **24 liter(s)**

## Steps

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

## Mash step by step

- Heat up **18 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **76C**
- Sparge using **14.5 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

## Fermentables

| Type  | Name                | Amount        | Yield | EBC |
|-------|---------------------|---------------|-------|-----|
| Grain | Fawcett Maris Otter | 5 kg (83.3%)  | 81 %  | 6   |
| Grain | Strzegom Karmel 150 | 0.5 kg (8.3%) | 75 %  | 150 |
| Grain | płatki jęczmienne   | 0.5 kg (8.3%) | 70 %  | 4   |

## Hops

| Use for   | Name               | Amount | Time   | Alpha acid |
|-----------|--------------------|--------|--------|------------|
| Boil      | Warrior            | 40 g   | 60 min | 15 %       |
| Boil      | East Kent Goldings | 20 g   | 20 min | 5.4 %      |
| Boil      | East Kent Goldings | 10 g   | 7 min  | 5.4 %      |
| Whirlpool | East Kent Goldings | 20 g   | 30 min | 5.4 %      |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11 g   | ---        |

## Extras

| Type    | Name       | Amount | Use for | Time   |
|---------|------------|--------|---------|--------|
| Finning | whirlflock | 1.3 g  | Boil    | 10 min |