

## #04 - Bitter

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **40**
- SRM **14.9**
- Style **Special/Best/Premium Bitter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

### Steps

- Temp **66 C**, Time **50 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **16.8 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **50 min** at **66C**
- Keep mash **10 min** at **76C**
- Sparge using **14.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name                | Amount         | Yield | EBC |
|-------|---------------------|----------------|-------|-----|
| Grain | Strzegom Pale Ale   | 1.6 kg (28.6%) | 79 %  | 6   |
| Grain | Strzegom Pilzneński | 3.4 kg (60.7%) | 80 %  | 4   |
| Grain | Strzegom Karmel 300 | 0.6 kg (10.7%) | 70 %  | 299 |

### Hops

| Use for | Name               | Amount | Time   | Alpha acid |
|---------|--------------------|--------|--------|------------|
| Boil    | East Kent Goldings | 25 g   | 60 min | 6.3 %      |
| Boil    | Fuggles            | 25 g   | 60 min | 5.6 %      |
| Boil    | Fuggles            | 25 g   | 5 min  | 5.6 %      |
| Boil    | East Kent Goldings | 25 g   | 5 min  | 6.3 %      |

### Yeasts

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