

# Bitter

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **29**
- SRM **6.9**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **28.6 liter(s)**

## Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **15 min**

## Mash step by step

- Heat up **13.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **76C**
- Sparge using **19.6 liter(s)** of **76C** water or to achieve **28.6 liter(s)** of wort

## Fermentables

| Type  | Name                 | Amount         | Yield | EBC |
|-------|----------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt | 3.7 kg (82.2%) | 80 %  | 5   |
| Grain | Biscuit Malt         | 0.35 kg (7.8%) | 79 %  | 45  |
| Grain | Caramunich® typ I    | 0.45 kg (10%)  | 73 %  | 80  |

## Hops

| Use for | Name       | Amount | Time   | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil    | First Gold | 25 g   | 60 min | 8 %        |
| Boil    | First Gold | 15 g   | 20 min | 8 %        |
| Boil    | First Gold | 10 g   | 5 min  | 8 %        |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 7 g    | Fermentis  |