

# Bitter

- Gravity **10.7 BLG**
- ABV **4.3 %**
- IBU **41**
- SRM **9**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **22.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.6 liter(s)**
- Total mash volume **16.2 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **12.6 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **13.9 liter(s)** of **76C** water or to achieve **22.9 liter(s)** of wort

## Fermentables

| Type  | Name                          | Amount         | Yield | EBC |
|-------|-------------------------------|----------------|-------|-----|
| Grain | Weyermann - Pale Ale Malt     | 3.2 kg (88.9%) | 85 %  | 7   |
| Grain | Weyermann - Light Munich Malt | 0.25 kg (6.9%) | 82 %  | 14  |
| Grain | Caraaroma                     | 0.15 kg (4.2%) | 78 %  | 400 |

## Hops

| Use for | Name    | Amount | Time   | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil    | Comet   | 20 g   | 55 min | 8.3 %      |
| Boil    | Comet   | 10 g   | 10 min | 8.3 %      |
| Boil    | Warrior | 10 g   | 10 min | 15.5 %     |
| Boil    | Warrior | 20 g   | 5 min  | 15.5 %     |

## Yeasts

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