

Bitterek

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **38**
- SRM **6.7**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **13 %/h**
- Boil size **28 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

Steps

- Temp **69 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **12.9 liter(s)** of strike water to **77.2C**
- Add grains
- Keep mash **60 min** at **69C**
- Keep mash **10 min** at **78C**
- Sparge using **19.4 liter(s)** of **76C** water or to achieve **28 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------|-------------|-------|-----|
| Grain | Viking Pale Ale malt | 4 kg (93%) | 80 % | 5 |
| Grain | chateau crystal | 0.3 kg (7%) | 72 % | 150 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil | Sybilla | 30 g | 60 min | 6.8 % |
| Boil | Fuggles | 30 g | 30 min | 4.2 % |
| Boil | Sybilla | 20 g | 10 min | 6.8 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------------|------|------|--------|------------|
| lallemand windsor | Ale | Dry | 11 g | lallemand |