

Bitter

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **24**
- SRM **9.4**
- 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 **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.8 liter(s)**
- Total mash volume **20.3 liter(s)**

Steps

- Temp **64 C**, Time **50 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **15.8 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **50 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **14 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Pilzneński | 2.6 kg (57.8%) | 81 % | 4 |
| Grain | Viking Munich Malt | 0.6 kg (13.3%) | 78 % | 18 |
| Grain | Weyermann - Melanoiden Malt | 1 kg (22.2%) | 81 % | 70 |
| Grain | caragold | 0.3 kg (6.7%) | 70 % | 30 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|-----------|--------|--------|------------|
| Boil | Tradition | 30 g | 60 min | 5.5 % |
| Aroma (end of boil) | Cascade | 20 g | 10 min | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
| ale | Ale | Dry | 11 g | --- |