

Ale

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **28**
- SRM **3.7**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **29.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **19.1 liter(s)** of **76C** water or to achieve **29.1 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|--------------|-------|-----|
| Grain | Viking Pale Ale malt | 3.5 kg (70%) | 80 % | 5 |
| Grain | Rahr - Premium Pilsner Malt | 1.5 kg (30%) | 80 % | 4 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil | Marynka | 30 g | 40 min | 8 % |
| Aroma (end of boil) | Puławski | 20 g | 20 min | 3.5 % |
| Aroma (end of boil) | Lubelski | 10 g | 10 min | 4 % |

Yeasts

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