

ppa3

- Gravity **14.7 BLG**
- ABV ---
- IBU **42**
- SRM **12.7**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.8 liter(s)**
- Total mash volume **25 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **18.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|--------------|-------|-----|
| Grain | Viking Pale Ale malt | 3 kg (48%) | 80 % | --- |
| Grain | Strzegom Pilzneński | 2 kg (32%) | 80 % | --- |
| Grain | Strzegom Monachijski typ I | 1 kg (16%) | 79 % | 150 |
| Grain | Karmelowy munich light | 0.25 kg (4%) | 80 % | 90 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil | Marynka | 40 g | 60 min | 10 % |
| Aroma (end of boil) | Amarillo | 10 g | 10 min | 9.5 % |
| Whirlpool | Cascade | 10 g | 0 min | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| us-05 | Ale | Dry | 11 g | fermentis |