

WrogiePiwo

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **33**
- SRM **4.2**
- Style **German Pilsner (Pils)**

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 **16.9 liter(s)**
- Total mash volume **22.6 liter(s)**

Steps

- Temp **55 C**, Time **5 min**
- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.9 liter(s)** of strike water to **60.9C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **30 min** at **63C**
- Keep mash **40 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **17.8 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------|----------------|-------|-----|
| Grain | Strzegom Pilzneński | 5 kg (88.5%) | 80 % | 4 |
| Grain | Strzegom Wiedeński | 0.5 kg (8.8%) | 79 % | 10 |
| Grain | Karmelowy Jasny 30EBC | 0.1 kg (1.8%) | 75 % | 30 |
| Grain | Abbey Castle | 0.05 kg (0.9%) | 80 % | 45 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------------------|--------|--------|------------|
| Boil | Herkules | 15 g | 50 min | 17 % |
| Boil | Saaz (Czech Republic) | 20 g | 30 min | 4.5 % |
| Boil | Saaz (Czech Republic) | 20 g | 5 min | 4.5 % |
| Boil | Styrian Golding | 20 g | 5 min | 3.6 % |