

Full Aroma Hops

- Gravity **12.1 BLG**
- ABV ---
- IBU **46**
- SRM **4**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

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 **64 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **22.2 liter(s)**

Steps

- Temp **40 C**, Time **20 min**
- Temp **62 C**, Time **10 min**
- Temp **72 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **16.6 liter(s)** of strike water to **43.3C**
- Add grains
- Keep mash **20 min** at **40C**
- Keep mash **10 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------|----------------|-------|-----|
| Grain | Pilzneński | 5.55 kg (100%) | 81 % | 4 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil | Magnum | 27 g | 90 min | 9 % |
| Boil | Lublin (Lubelski) | 40 g | 45 min | 4 % |
| Boil | Lublin (Lubelski) | 10 g | 5 min | 4 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 11.5 g | Safale |