

bitter

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **41**
- SRM **11.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **27 liter(s)**

Steps

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

Mash step by step

- Heat up **21 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Sparge using **16.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------|---------------|-------|-----|
| Grain | Strzegom Pilzneński | 5 kg (83.3%) | 80 % | 4 |
| Grain | Pszeniczny | 0.5 kg (8.3%) | 85 % | 4 |
| Grain | Strzegom Karmel 300 | 0.5 kg (8.3%) | 70 % | 299 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Boil | lunga | 30 g | 60 min | 11 % |
| Boil | Sybilla | 20 g | 30 min | 6.9 % |
| Aroma (end of boil) | Sybilla | 30 g | 2 min | 6.9 % |

Yeasts

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