

Altbier

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **49**
- SRM **9**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **32.2 liter(s)**

Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.1 liter(s)**
- Total mash volume **20.2 liter(s)**

Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **15.1 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **22.1 liter(s)** of **76C** water or to achieve **32.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------------|--------------------|-----------------|-------|------|
| Grain | Strzegom Wiedeński | 1.75 kg (34.7%) | 79 % | 10 |
| Od początku | | | | |
| Grain | Monachijski | 3.25 kg (64.5%) | 80 % | 16 |
| Od początku | | | | |
| Grain | Strzegom Barwiący | 0.038 kg (0.8%) | 68 % | 1300 |
| Przy 78C | | | | |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------|--------|--------|------------|
| Boil | Perle | 69 g | 60 min | 7 % |
| Boil | Hersbrucker | 25 g | 40 min | 3 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale K-97 | Ale | Dry | 11.5 g | Fermentis |

Extras

| Type | Name | Amount | Use for | Time |
|--------|-----------|--------|---------|--------|
| Fining | Whirflock | 2.5 g | Boil | 20 min |