

Altbier

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **32**
- SRM **12.8**
- Style **Northern German Altbier**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **10 %**
- Size with trub loss **11 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **13.4 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.2 liter(s) / kg**
- Mash size **9.3 liter(s)**
- Total mash volume **12.2 liter(s)**

Steps

- Temp **65 C**, Time **45 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **9.3 liter(s)** of strike water to **72C**
- Add grains
- Keep mash **45 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **7 liter(s)** of **76C** water or to achieve **13.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|-----------------|-------|-----|
| Grain | Strzegom Monachijski typ I | 2.25 kg (77.6%) | 79 % | 16 |
| Grain | Strzegom Karmel 300 | 0.15 kg (5.2%) | 70 % | 299 |
| Grain | Viking Pale Ale malt | 0.5 kg (17.2%) | 80 % | 5 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|-----------|--------|--------|------------|
| Boil | Tradition | 25 g | 50 min | 5.5 % |
| Whirlpool | Perle | 10 g | 20 min | 7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------------------|------|------|--------|------------|
| Lallemand LalBrew Kölsch | Ale | Dry | 11 g | Lallemand |