

# Alt

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **29**
- SRM **11.7**
- Style **Düsseldorf Altbier**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.9 liter(s)**
- Total mash volume **19.8 liter(s)**

## Steps

- Temp **66 C**, Time **90 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **14.9 liter(s)** of strike water to **73.6C**
- Add grains
- Keep mash **90 min** at **66C**
- Keep mash **5 min** at **78C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

## Fermentables

| Type  | Name                     | Amount         | Yield | EBC |
|-------|--------------------------|----------------|-------|-----|
| Grain | Viking Pilsner malt      | 3 kg (60.6%)   | 82 %  | 4   |
| Grain | Viking Munich Malt       | 1.5 kg (30.3%) | 78 %  | 18  |
| Grain | Karmelowy żytni Strzegom | 0.4 kg (8.1%)  | 75 %  | 150 |
| Grain | Barwiący                 | 0.05 kg (1%)   | 55 %  | 985 |

## Hops

| Use for | Name      | Amount | Time   | Alpha acid |
|---------|-----------|--------|--------|------------|
| Boil    | Hallertau | 50 g   | 60 min | 4.5 %      |
| Boil    | Hallertau | 20 g   | 15 min | 4.5 %      |
| Boil    | Hallertau | 5 g    | 0 min  | 4.5 %      |

## Yeasts

| Name                  | Type | Form | Amount | Laboratory       |
|-----------------------|------|------|--------|------------------|
| FM42 Stare Nadreńskie | Ale  | Dry  | 11 g   | Fermentum Mobile |