

## Alt

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **36**
- SRM **13.9**
- Style **Düsseldorf Altbier**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **23.4 liter(s)**

### Steps

- Temp **63 C**, Time **20 min**
- Temp **82 C**, Time **40 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **17.5 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **0 min** at **78C**
- Keep mash **40 min** at **82C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

| Type  | Name                        | Amount         | Yield | EBC  |
|-------|-----------------------------|----------------|-------|------|
| Grain | Viking Pilsner malt         | 3 kg (51.3%)   | 82 %  | 4    |
| Grain | Strzegom Monachijski typ II | 1 kg (17.1%)   | 79 %  | 22   |
| Grain | Strzegom Wiedeński          | 1 kg (17.1%)   | 79 %  | 10   |
| Grain | Strzegom Karmel 50          | 0.5 kg (8.5%)  | 75 %  | 50   |
| Grain | Viking red ale              | 0.25 kg (4.3%) | 75 %  | 70   |
| Grain | Weyermann - Carafa III      | 0.1 kg (1.7%)  | 70 %  | 1024 |

### Hops

| Use for             | Name                | Amount | Time   | Alpha acid |
|---------------------|---------------------|--------|--------|------------|
| First Wort          | Hallertau tradition | 50 g   | 60 min | 4.6 %      |
| Aroma (end of boil) | Hallertau tradition | 25 g   | 15 min | 4.6 %      |
| Aroma (end of boil) | Hallertau tradition | 25 g   | 5 min  | 4.6 %      |

### Yeasts

| Name       | Type | Form   | Amount  | Laboratory |
|------------|------|--------|---------|------------|
| German ale | Ale  | Liquid | 1000 ml | Fm         |