

## # Alt

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **42**
- SRM **16.7**
- Style **Düsseldorf Altbier**

### Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **4 %**
- Size with trub loss **25 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29.6 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.6 liter(s)**
- Total mash volume **25.2 liter(s)**

### Steps

- Temp **55 C**, Time **20 min**
- Temp **65 C**, Time **40 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **19.6 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **20 min** at **55C**
- Keep mash **40 min** at **65C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **15.6 liter(s)** of **76C** water or to achieve **29.6 liter(s)** of wort

### Fermentables

| Type  | Name                   | Amount         | Yield | EBC  |
|-------|------------------------|----------------|-------|------|
| Grain | Malteurop Lager        | 4.5 kg (80.4%) | 82 %  | 3    |
| Grain | Weyermann Caramunich 3 | 1 kg (17.9%)   | 76 %  | 150  |
| Grain | fawcett chocolate      | 0.1 kg (1.8%)  | 60 %  | 1200 |

### Hops

| Use for | Name           | Amount | Time   | Alpha acid |
|---------|----------------|--------|--------|------------|
| Boil    | Magnum szyszka | 33 g   | 60 min | 13.5 %     |

### Yeasts

| Name                  | Type | Form  | Amount | Laboratory       |
|-----------------------|------|-------|--------|------------------|
| FM42 Stare Nadreńskie | Ale  | Slant | 200 ml | Fermentum Mobile |

### Notes

- Trzeba dać 40 g szyszki, bo program liczy jako granulát.  
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