

A2

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **40**
- SRM **13.9**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **9 liter(s)**
- Trub loss **10 %**
- Size with trub loss **9.9 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **13 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **8.3 liter(s)**
- Total mash volume **10.7 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **77 C**, Time **0 min**

Mash step by step

- Heat up **8.3 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **77C**
- Sparge using **7.1 liter(s)** of **76C** water or to achieve **13 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--|-----------------|-------|------|
| Grain | Weyermann - Bohemian Pilsner Malt | 1.35 kg (57%) | 81 % | 4 |
| Grain | Monachijski typ II 20-25 EBC Weyermann | 0.75 kg (31.6%) | 78 % | 20 |
| Grain | Weyermann - Caramunich II | 0.1 kg (4.2%) | 73 % | 120 |
| Grain | Weyermann - Carafa Special II | 0.05 kg (2.1%) | 65 % | 1150 |
| Grain | Viking Wheat Malt | 0.12 kg (5.1%) | 82 % | 4 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|----------------------|--------|--------|------------|
| Boil | Hallertau Mittelfruh | 24 g | 60 min | 4.6 % |
| Boil | lunga | 4 g | 60 min | 10 % |
| Boil | Hallertau Mittelfruh | 10 g | 15 min | 4.6 % |
| Whirlpool | Hallertau Mittelfruh | 10 g | --- | 4.6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|-------------|-------------|---------------|-------------------|
| safale k-97 | Ale | Dry | 11.5 g | --- |