

Altbier

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **34**
- SRM **13.5**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **10 %**
- Size with trub loss **46 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **55.2 liter(s)**

Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **32.6 liter(s)**
- Total mash volume **43.5 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **50 min**
- Temp **76 C**, Time **2 min**

Mash step by step

- Heat up **32.6 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **50 min** at **72C**
- Keep mash **2 min** at **76C**
- Sparge using **33.5 liter(s)** of **76C** water or to achieve **55.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------|----------------|--------|-----|
| Grain | Briess - Munich Malt 10L | 10 kg (91.9%) | 77 % | 20 |
| Grain | CaraMunich Type 2 - Weyermann | 0.8 kg (7.4%) | 71.7 % | 120 |
| Grain | Weyermann - Dehusked Carafa II | 0.08 kg (0.7%) | 70 % | 837 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------|--------|--------|------------|
| Boil | Hallertau | 140 g | 60 min | 4.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------------|------|--------|--------|------------|
| WLP029 - German Ale/Kölsch Yeast | Ale | Liquid | 100 ml | White Labs |