

Micro PA -5.1

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **30**
- SRM **2.8**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **55 C**, Time **1 min**
- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **14 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **1 min** at **55C**
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-------------------|----------------|-------|-----|
| Grain | Pilsner Malz Best | 3.5 kg (87.5%) | 81 % | 3 |
| Grain | Weizenmalz Best | 0.4 kg (10%) | 82 % | 4 |
| Grain | Carapils Best | 0.1 kg (2.5%) | 75 % | 5 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|------------|------------|--------|----------|------------|
| First Wort | El Dorado | 3 g | 60 min | 14 % |
| Whirlpool | Cascade | 30 g | 20 min | 5.9 % |
| Whirlpool | Amarillo | 30 g | 20 min | 7.4 % |
| Whirlpool | Centennial | 30 g | 20 min | 10.1 % |
| Dry Hop | Galaxy | 50 g | 5 day(s) | 14.5 % |
| Dry Hop | El Dorado | 50 g | 5 day(s) | 14 % |
| Dry Hop | Sabro | 50 g | 5 day(s) | 14.2 % |
| Dry Hop | Mosaic | 50 g | 5 day(s) | 12.3 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------------------------|-------------|-------------|---------------|-------------------|
| Wyeast - 1728 Scottish Ale | Ale | Liquid | 100 ml | Wyeast Labs |