

## Micro PA -5.1

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- 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

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
Wyeast - 1728 Scottish Ale	Ale	Liquid	100 ml	Wyeast Labs