

## Micro PA - 4

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- Gravity **10.7 BLG**
- ABV **4.3 %**
- IBU **39**
- SRM **4.6**
- 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 **75 min**
- Evaporation rate **10 %/h**
- Boil size **25.9 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 **68 C**, Time **60 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 **60 min** at **68C**
- Keep mash **1 min** at **76C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **25.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Best	3.5 kg (87.5%)	80 %	6
Grain	Wheat, Flaked	0.3 kg (7.5%)	77 %	4
Grain	Cara aroma (red)	0.2 kg (5%)	78 %	50

### Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Perle	1 g	60 min	9.7 %
Boil	Cascade	10 g	10 min	5.9 %
Boil	Nectaron	10 g	10 min	9.4 %
Boil	Centennial	10 g	10 min	10.1 %
Whirlpool	Cascade	30 g	20 min	5.9 %
Whirlpool	Nectaron	30 g	20 min	9.4 %
Whirlpool	Centennial	30 g	20 min	10.1 %

### Yeasts

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

## Extras

Type	Name	Amount	Use for	Time
Flavor	Laktoza	200 g	Boil	60 min