

## APA zacier

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **42**
- SRM **4.4**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **34.2 liter(s)**

### Mash information

- Mash efficiency **97 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

### Steps

- Temp **51 C**, Time **15 min**
- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

### Mash step by step

- Heat up **17.5 liter(s)** of strike water to **55.4C**
- Add grains
- Keep mash **15 min** at **51C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Sparge using **21.7 liter(s)** of **76C** water or to achieve **34.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Castle Pale Ale	5 kg (100%)	80 %	8

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	10 g	30 min	10.5 %
Boil	Galaxy	10 g	10 min	13.6 %
Boil	Centennial	20 g	10 min	9.1 %
Boil	Topaz	20 g	10 min	17.6 %
Boil	Galaxy	10 g	5 min	13.6 %
Boil	Centennial	30 g	5 min	9.1 %
Boil	Topaz	30 g	5 min	17.6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Slant	200 ml	Fermentum Mobile