

## #13.1 APA 4 smaki (Chmielenie)

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **32**
- SRM **5.1**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.8 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.03 liter(s) / kg**
- Mash size **12.5 liter(s)**
- Total mash volume **16.6 liter(s)**

### Steps

- Temp **67 C**, Time **90 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.5 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **90 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **22.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Rahr - Premium Pilsner Malt	3.13 kg (75.8%)	80 %	4
Grain	Carabelge	0.2 kg (4.8%)	80 %	30
Grain	Monachijski	0.39 kg (9.4%)	80 %	16
Grain	Pszeniczny	0.16 kg (3.9%)	85 %	4
Grain	Płatki owsiane	0.23 kg (5.6%)	85 %	3
Grain	Caraaroma	0.02 kg (0.5%)	78 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	10 g	60 min	11.8 %
Boil	Amarillo	5 g	60 min	8.9 %
Boil	Amarillo	5 g	15 min	8.9 %
Boil	Centennial	5 g	15 min	8.7 %
Boil	Cascade	5 g	15 min	5.8 %
Boil	Citra	5 g	15 min	11.8 %
Whirlpool	Amarillo	15 g	0 min	8.9 %
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Whirlpool	Centennial	15 g	0 min	8.7 %
Whirlpool	Cascade	15 g	0 min	5.8 %
Whirlpool	Citra	15 g	0 min	11.8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	9 g	Fermentis