

## Apa vol.2.1

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- Gravity **13.1 BLG**
- ABV ---
- IBU **25**
- SRM **3.9**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **42 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **50.6 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.14 liter(s) / kg**
- Mash size **32.7 liter(s)**
- Total mash volume **43.1 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **32.7 liter(s)** of strike water to **74.5C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **28.3 liter(s)** of **76C** water or to achieve **50.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilznieński	10 kg (96.2%)	81 %	4
Grain	Strzegom Karmel 30	0.1 kg (1%)	75 %	30
Grain	Pszeniczny	0.3 kg (2.9%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	mieszanka wlasna	8 g	45 min	5 %
Boil	Centennial	40 g	45 min	6 %
Aroma (end of boil)	Cascade	50 g	15 min	3.5 %
Aroma (end of boil)	Cascade	50 g	5 min	3.5 %
Aroma (end of boil)	loral	30 g	5 min	12.9 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Safale
Safale S-04	Ale	Dry	11.5 g	Safale