

# apa free

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- Gravity **6.6 BLG**
- ABV ---
- IBU **33**
- SRM **4**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **4.5 liter(s)**
- Total mash volume **6 liter(s)**

## Steps

- Temp **72 C**, Time **70 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **4.5 liter(s)** of strike water to **80.7C**
- Add grains
- Keep mash **70 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.2 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Malt (2 Row) Bel	0.8 kg (53.3%)	80 %	6
Grain	Rye Malt	0.5 kg (33.3%)	63 %	10
Grain	Rye, Flaked	0.2 kg (13.3%)	78.3 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	30 g	10 min	12 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	4 g	Safale