

# Rye APA

- Gravity **13.8 BLG**
- ABV **5.7 %**
- IBU **63**
- SRM **2.8**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **10 %**
- Size with trub loss **46 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **52.5 liter(s)**

## Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **30 liter(s)**
- Total mash volume **40 liter(s)**

## Steps

- Temp **64 C**, Time **70 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **30 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **70 min** at **64C**
- Keep mash **10 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **32.5 liter(s)** of **76C** water or to achieve **52.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	9 kg (90%)	80.5 %	2
Grain	Briess - Rye Malt	1 kg (10%)	80 %	7

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	70 g	60 min	15.5 %
Aroma (end of boil)	Amarillo	25 g	10 min	9.5 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	25 g	10 min	15.5 %
Aroma (end of boil)	Amarillo	25 g	0 min	9.5 %
Aroma (end of boil)	Amarillo	25 g	0 min	9.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	20 g	fermentis