

# Rye APA

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- 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  |