

# Tomahawk Pale Ale

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- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **60**
- SRM **4.6**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **3 %**
- Size with trub loss **12.4 liter(s)**
- Boil time **45 min**
- Evaporation rate **10 %/h**
- Boil size **14.6 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **7.5 liter(s)**
- Total mash volume **10.5 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**

## Mash step by step

- Heat up **7.5 liter(s)** of strike water to **77.6C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **10.1 liter(s)** of **76C** water or to achieve **14.6 liter(s)** of wort

## Fermentables

| Type  | Name                | Amount         | Yield | EBC |
|-------|---------------------|----------------|-------|-----|
| Grain | Viking Munich Malt  | 0.5 kg (16.7%) | 78 %  | 18  |
| Grain | Viking Pilsner Malt | 2.5 kg (83.3%) | 82 %  | 3.5 |

## Hops

| Use for | Name                   | Amount | Time   | Alpha acid |
|---------|------------------------|--------|--------|------------|
| Boil    | Columbus/Tomahawk/Zeus | 20 g   | 40 min | 15.5 %     |
| Boil    | Columbus/Tomahawk/Zeus | 10 g   | 10 min | 15.5 %     |

## Yeasts

| Name  | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| us-05 | Ale  | Dry  | 5 g    | ---        |