

Tomahawk Pale Ale

- 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 | --- |