

# tomahawk apa

- Gravity **17.7 BLG**
- ABV ---
- IBU **105**
- SRM **14.4**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **22.5 liter(s)**
- Total mash volume **30 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**
- Temp **77 C**, Time **15 min**
- Temp **100 C**, Time **60 min**

## Mash step by step

- Heat up **22.5 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **15 min** at **77C**
- Keep mash **60 min** at **100C**
- Sparge using **11.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Malt (2 Row) US	6 kg (80%)	--- %	---
Grain	Weyermann pszeniczny jasny	1 kg (13.3%)	80 %	6
Grain	Caraaroma	0.5 kg (6.7%)	78 %	400

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	50 g	60 min	15.5 %
Boil	Ella (AUS)	25 g	30 min	14.6 %
Boil	Palisade	25 g	30 min	7.5 %
Boil	Azacca	25 g	1 min	14 %
Dry Hop	Ella (AUS)	25 g	7 day(s)	14.6 %
Dry Hop	Palisade	25 g	7 day(s)	7.5 %
Dry Hop	Azacca	25 g	7 day(s)	14 %

## Yeasts

Name	Type	Form	Amount	Laboratory
US-05	Ale	Dry	10 g	---