

# mandarina apa

- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **30**
- SRM **8.6**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **28.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **63 C**, Time **30 min**
- Temp **73 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **13.5 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **73C**
- Keep mash **1 min** at **78C**
- Sparge using **19.8 liter(s)** of **76C** water or to achieve **28.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2 kg (44.4%)	80 %	4
Grain	Fawcett - Crystal	0.3 kg (6.7%)	70 %	160
Grain	Viking Pale Ale malt	2 kg (44.4%)	80 %	5
Grain	Strzegom Karmel 150	0.2 kg (4.4%)	75 %	150

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	5 g	50 min	10 %
Boil	Mandarina Bavaria	20 g	15 min	10 %
Boil	Mandarina Bavaria	20 g	10 min	10 %
Boil	Mandarina Bavaria	25 g	5 min	10 %
Whirlpool	Cascade	25 g	0 min	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale