

# Mandaryna single hop

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **34**
- SRM **6.7**
- 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 **45 min**
- Evaporation rate **10 %/h**
- Boil size **25.8 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.1 liter(s)**
- Total mash volume **22.8 liter(s)**

## Steps

- Temp **62 C**, Time **10 min**
- Temp **72 C**, Time **80 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **17.1 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **80 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **25.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2.5 kg (43.9%)	80 %	4
Grain	Strzegom Pale Ale	2.5 kg (43.9%)	79 %	6
Grain	Caramel/Crystal Malt - 20L	0.5 kg (8.8%)	75 %	39
Grain	Caramunich® typ I	0.2 kg (3.5%)	73 %	80

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Mandarina Bavaria	20 g	45 min	7.6 %
Boil	Mandarina Bavaria	30 g	20 min	7.6 %
Aroma (end of boil)	Mandarina Bavaria	10 g	15 min	7.6 %
Aroma (end of boil)	Mandarina Bavaria	10 g	10 min	7.6 %
Dry Hop	Mandarina Bavaria	80 g	7 day(s)	7.6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
us 4	Ale	Dry	11.5 g	---