

American pale ale

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **34**
- SRM **8.1**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **12.8 liter(s)**
- Total mash volume **17.9 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **75 C**, Time **0 min**

Mash step by step

- Heat up **12.8 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **72C**
- Keep mash **0 min** at **75C**
- Sparge using **17.6 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	4 kg (78.4%)	80 %	6
Grain	Karmelowy Czerwony	0.2 kg (3.9%)	75 %	59
Grain	Strzegom Monachijski typ I	0.8 kg (15.7%)	79 %	16
Grain	Strzegom Karmel 300	0.1 kg (2%)	75 %	299

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	60 min	15.5 %
Aroma (end of boil)	Centennial	20 g	0 min	10.5 %
Dry Hop	Centennial	30 g	3 day(s)	10.5 %
Dry Hop	Ahtanum	30 g	3 day(s)	5 %
Dry Hop	Willamette	30 g	3 day(s)	5 %

Yeasts

Name	Type	Form	Amount	Laboratory
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us-05	Ale	Dry	11.5 g	---
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