

APA

- Gravity **15 BLG**
- ABV ---
- IBU **37**
- SRM **4.8**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **10 %**
- Size with trub loss **24.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.3 liter(s)**
- Total mash volume **20.4 liter(s)**

Steps

- Temp **70 C**, Time **20 min**
- Temp **64 C**, Time **90 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **15.3 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **90 min** at **64C**
- Keep mash **20 min** at **70C**
- Keep mash **10 min** at **78C**
- Sparge using **17.6 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	2 kg (39.2%)	85 %	7
Grain	Pilsnerński	2 kg (39.2%)	85 %	4
Grain	Acid Malt	0.1 kg (2%)	58.7 %	6
Grain	Oats, Flaked	0.4 kg (7.8%)	80 %	2
Grain	Wheat, Flaked	0.6 kg (11.8%)	77 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Amarillo	15 g	60 min	8.9 %
Boil	Centennial	15 g	60 min	8.5 %
Boil	Amarillo	10 g	30 min	8.9 %
Boil	Centennial	10 g	30 min	8.5 %
Whirlpool	Centennial	10 g	60 min	8.5 %
Whirlpool	Amarillo	10 g	60 min	8.9 %

Yeasts

Name	Type	Form	Amount	Laboratory
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FM11 Wichrowe Wzgórze	Ale	Liquid	1000 ml	Fermentum Mobile
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Notes

- Drożdże to starter 1L
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