

Pale Ale 15L

- Gravity **11.7 BLG**
- ABV ---
- IBU **50**
- SRM **5.6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **16 liter(s)**
- Trub loss **10 %**
- Size with trub loss **17.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **20 %/h**
- Boil size **23 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **11.7 liter(s)**
- Total mash volume **15.1 liter(s)**

Steps

- Temp **63 C**, Time **75 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **15 min**

Mash step by step

- Heat up **11.7 liter(s)** of strike water to **69.2C**
- Add grains
- Keep mash **75 min** at **63C**
- Keep mash **15 min** at **72C**
- Keep mash **15 min** at **78C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **23 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2 kg (59.7%)	80 %	4
Grain	Weyermann pszeniczny jasny	0.5 kg (14.9%)	80 %	6
Grain	Monachijski	0.2 kg (6%)	80 %	16
Grain	Strzegom Karmel 150	0.05 kg (1.5%)	75 %	150
Grain	Rye, Flaked	0.4 kg (11.9%)	78.3 %	4
Grain	Oats, Flaked	0.2 kg (6%)	80 %	2

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	10 g	45 min	13 %
Boil	Centennial	5 g	25 min	10.5 %
Boil	Chinook	5 g	25 min	13 %
Boil	Centennial	10 g	10 min	10.5 %
Boil	Chinook	5 g	10 min	13 %
Boil	Citra	10 g	10 min	12 %
Aroma (end of boil)	Centennial	10 g	5 min	10.5 %

Aroma (end of boil)	Citra	10 g	1 min	12 %
Whirlpool	Centennial	5 g	0 min	10.5 %
Whirlpool	Chinook	10 g	0 min	13 %
Whirlpool	Citra	10 g	0 min	12 %
Dry Hop	Citra	30 g	4 day(s)	12 %
Dry Hop	Amarillo	30 g	4 day(s)	9.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	300 ml	Fermentis