

# Pale Ale

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **21**
- SRM **4.9**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **30 liter(s)**
- Trub loss **0 %**
- Size with trub loss **30 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **33 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **23.1 liter(s)**
- Total mash volume **29.7 liter(s)**

## Steps

- Temp **65 C**, Time **60 min**

## Mash step by step

- Heat up **23.1 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **60 min** at **65C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **33 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner Malt	5 kg (75.8%)	81 %	5
Grain	Weyermann - Carapils	0.2 kg (3%)	78 %	4
Grain	Weyermann - Carahell	0.2 kg (3%)	77 %	26
Grain	Weyermann - Carared	0.2 kg (3%)	75 %	45
Grain	Wheat, Flaked	0.8 kg (12.1%)	77 %	4
Grain	Weyermann - Acidulated Malt	0.2 kg (3%)	80 %	6

## Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Amarillo	5 g	15 min	8.9 %
Aroma (end of boil)	Cascade	5 g	15 min	5.8 %
Aroma (end of boil)	Centennial	5 g	15 min	9.4 %
Aroma (end of boil)	Amarillo	10 g	10 min	8.9 %
Aroma (end of boil)	Cascade	10 g	10 min	5.8 %
Aroma (end of boil)	Centennial	10 g	10 min	9.4 %
Aroma (end of boil)	Amarillo	15 g	5 min	8.9 %

Aroma (end of boil)	Cascade	15 g	5 min	5.8 %
Aroma (end of boil)	Centennial	15 g	5 min	9.4 %
Aroma (end of boil)	Amarillo	20 g	1 min	8.9 %
Aroma (end of boil)	Centennial	20 g	1 min	9.4 %
Aroma (end of boil)	Cascade	20 g	1 min	5.8 %
Dry Hop	Amarillo	50 g	3 day(s)	8.9 %
Dry Hop	Cascade	50 g	3 day(s)	5.8 %
Dry Hop	Centennial	50 g	3 day(s)	9.4 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale