

4 Pines Pale Ale clone 45 IBU

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **45**
- SRM **6.4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **62 min**
- Evaporation rate **10 %/h**
- Boil size **29.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **20.1 liter(s)**
- Total mash volume **25.9 liter(s)**

Steps

- Temp **67 C**, Time **60 min**

Mash step by step

- Heat up **20.1 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **29.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	4.5 kg (78.3%)	80 %	7
Grain	White Wheat Malt	0.5 kg (8.7%)	86 %	4
Grain	Munich Malt	0.5 kg (8.7%)	80 %	18
Grain	Caramel/Crystal Malt - 40L	0.25 kg (4.3%)	74 %	79

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Simcoe	25 g	40 min	13.2 %
Boil	Citra	25 g	10 min	12 %
Boil	Cascade	25 g	5 min	6 %
Boil	Amarillo	25 g	5 min	9.5 %
Whirlpool	Citra	10 g	30 min	12 %
Dry Hop	Citra	15 g	4 day(s)	12 %
Dry Hop	Cascade	15 g	4 day(s)	6 %

Yeasts

Name	Type	Form	Amount	Laboratory
US-05	Ale	Slant	200 ml	Safale

Extras

Recipe has been printed via **BREWNES.com** - a complex online solution for homebrewers to track brewing process easily.

Type	Name	Amount	Use for	Time
Water Agent	Whirlfloc Tablet	5 g	Mash	15 min