

## 4 Pines Pale Ale clone 45 IBU

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- 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 **BREWNESS.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 |