

## Polskie Pale Ale (Crystal)

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **53**
- SRM **6.1**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **3 %**
- Size with trub loss **20.5 liter(s)**
- Boil time **70 min**
- Evaporation rate **2 %/h**
- Boil size **21.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

### Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **14.4 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **11.8 liter(s)** of **76C** water or to achieve **21.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Malt Malteurop	3.1 kg (64.6%)	79 %	6
Grain	Viking Munich Malt	0.9 kg (18.7%)	78 %	18
Grain	Caramel/Crystal Malt - 20L	0.2 kg (4.2%)	75 %	39
Grain	Barley, Raw	0.2 kg (4.2%)	60.9 %	4
Grain	Wheat, Raw	0.2 kg (4.2%)	60.9 %	4
Grain	Oat, Raw	0.2 kg (4.2%)	60.9 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	22 g	70 min	10.7 %
(granulat)				
Boil	Magnat	22 g	15 min	7.2 %
(szyszki własne z ogrodu)				
Boil	lunga	22 g	15 min	10.7 %
(granulat)				
Aroma (end of boil)	Sybilla	13 g	0 min	3.5 %

(szyszki własne z ogrodu)				
Dry Hop	Crystal	150 g	3 day(s)	2.4 %
Bardzo intensywne wydzielanie CO2 podczas chmielenia na zimno				

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	100 ml	Fermentis