

## PILS (centennial + tradition)

- Gravity **10 BLG**
- ABV **4 %**
- IBU **27**
- SRM **4.7**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4.5 liter(s) / kg**
- Mash size **19.6 liter(s)**
- Total mash volume **23.9 liter(s)**

### Steps

- Temp **52 C**, Time **10 min**
- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **60 min**
- Temp **78 C**, Time **3 min**

### Mash step by step

- Heat up **19.6 liter(s)** of strike water to **55.6C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **60 min** at **65C**
- Keep mash **60 min** at **72C**
- Keep mash **3 min** at **78C**
- Sparge using **10.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	3 kg (69%)	82 %	4
Grain	viking malt caramel 30	0.5 kg (11.5%)	7 %	30
Grain	Viking Vienna Malt	0.65 kg (14.9%)	79 %	7
Grain	Simpsons - Maris Otter	0.2 kg (4.6%)	81 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
Dry Hop	Centennial	25 g	7 day(s)	10.5 %
Boil	Tradition	49 g	30 min	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis

### Extras

Type	Name	Amount	Use for	Time
Other	łuska ryżowa	100 g	Mash	103 min
dodatek ułatwia późniejszą filtrację				