

## Pils

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **21**
- SRM **4.8**
- 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 **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.1 liter(s)**
- Total mash volume **18.8 liter(s)**

### Steps

- Temp **55 C**, Time **10 min**
- Temp **64 C**, Time **25 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **14.1 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **25 min** at **64C**
- Keep mash **45 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **17 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	3.5 kg (74.5%)	81 %	4
Grain	Cookie Viking Malt	0.3 kg (6.4%)	72 %	45
Grain	Weyermann - Pale Ale Malt	0.9 kg (19.1%)	85 %	7

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	gotowanie	0 g	90 min	1 %
Boil	Marynka	20 g	60 min	8 %
Aroma (end of boil)	Saaz (Czech Republic)	15 g	10 min	4.5 %
Whirlpool	Saaz (Czech Republic)	20 g	0 min	4.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
gozdawa pilsner	Lager	Dry	10 g	---

## Extras

Type	Name	Amount	Use for	Time
Water Agent	kwask mlekowy	1 g	Mash	---

## Notes

- Woda destylowana 2/3 - czyli 10l.  
Zakwasic troche wode w razie potrzeby!  
Wysladzanie 50/50 woda destylowana.  
Dodac pozywki do drozdzy.  
*Nov 6, 2020, 10:26 AM*