

## pils

- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **30**
- SRM **3**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **44 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **52.8 liter(s)**

### Mash information

- Mash efficiency **82 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **25.4 liter(s)**
- Total mash volume **33.1 liter(s)**

### Steps

- Temp **45 C**, Time **0 min**
- Temp **52 C**, Time **15 min**
- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **90 min**

### Mash step by step

- Heat up **25.4 liter(s)** of strike water to **48.8C**
- Add grains
- Keep mash **0 min** at **45C**
- Keep mash **15 min** at **52C**
- Keep mash **40 min** at **62C**
- Keep mash **90 min** at **72C**
- Sparge using **35.1 liter(s)** of **76C** water or to achieve **52.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	7 kg (90.9%)	81 %	4
Grain	Cara-Pils/Dextrine	0.7 kg (9.1%)	72 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	60 min	10 %
Boil	Marynka	35 g	30 min	10 %
Aroma (end of boil)	Lublin (Lubelski)	30 g	0 min	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Saflager W 34/70	Lager	Dry	22 g	Fermentis