

## pils 3

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- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **32**
- SRM **3.4**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **10 %**
- Size with trub loss **24.2 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **29.5 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

### Steps

- Temp **53 C**, Time **10 min**
- Temp **64 C**, Time **20 min**
- Temp **72 C**, Time **35 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **10 min** at **53C**
- Keep mash **20 min** at **64C**
- Keep mash **35 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **19.5 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4.5 kg (90%)	80 %	4
Grain	Bestmalz Carmel Pils	0.2 kg (4%)	75 %	5
Grain	Pszeniczny	0.3 kg (6%)	85 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka (goryczkowy)	30 g	60 min	8.8 %
Boil	Sybilla	15 g	15 min	7 %
Boil	Sybilla	15 g	5 min	7 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M84 Bohemian Lager	Lager	Slant	100 ml	Mangrove Jack's