

4P

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **34**
- SRM **4.3**
- 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 **75 min**
- Evaporation rate **10 %/h**
- Boil size **25.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **16 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **16 liter(s)** of strike water to **69.5C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **13.9 liter(s)** of **76C** water or to achieve **25.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słód Pilsner® 2,5-4,5 EBC Weyermann	3 kg (75%)	100 %	4
Grain	Strzegom Monachijski typ I	1 kg (25%)	100 %	16

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade PL	15 g	60 min	5.2 %
Boil	Marynka	15 g	60 min	10 %
Aroma (end of boil)	Chinook	25 g	15 min	6.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
W 34-70	Lager	Dry	11 g	---