

Polski PILS

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **52**
- SRM **4.6**
- 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 **23 %/h**
- Boil size **28.3 liter(s)**

Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **13.5 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **19.3 liter(s)** of **76C** water or to achieve **28.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4 kg (88.9%)	80 %	4
Grain	Strzegom Karmel 30	0.5 kg (11.1%)	75 %	30

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	50 g	50 min	7.4 %
Aroma (end of boil)	Lublin (Lubelski)	50 g	15 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Liquid	1000 ml	Fermentum Mobile

Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc	0.5 g	Boil	15 min