

## PILS 4 GERMAN

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- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **41**
- SRM **4.6**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **14 liter(s)**
- Trub loss **3 %**
- Size with trub loss **14.6 liter(s)**
- Boil time **75 min**
- Evaporation rate **12 %/h**
- Boil size **18.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.7 liter(s)**
- Total mash volume **15.6 liter(s)**

### Steps

- Temp **66 C**, Time **60 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **11.7 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **5 min** at **76C**
- Sparge using **10.3 liter(s)** of **76C** water or to achieve **18.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner	3.5 kg (89.7%)	81 %	4
Grain	Weyermann - Monachijski I	0.4 kg (10.3%)	80 %	16

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Tradition (DE)	40 g	60 min	4.3 %
Boil	Hallertau Tradition (DE)	40 g	20 min	4.3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Liquid	2000 ml	Fermentum Mobile

STATER 10 BLG FERMENTACJA W 15°C-POCZĄTEK 5 JAK RUSZYŁY 15 PSI

### Extras

Type	Name	Amount	Use for	Time
Fining	whirlfloc tabletki	1 g	Boil	10 min

Other	pożywka Wyeast	1.6 g	Boil	10 min
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## Notes

- Woda RO modyfikowana do wartości w PPM  
Ca-50  
Mg-5  
Na-15  
Cl-50  
S04-85  
HCO3-15  
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