

## Pils GRU

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- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **29**
- SRM **6.9**
- Style **Bohemian Pilsener**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **8 %/h**
- Boil size **28.5 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.9 liter(s)**
- Total mash volume **25.6 liter(s)**

### Steps

- Temp **52 C**, Time **15 min**
- Temp **72 C**, Time **20 min**
- Temp **100 C**, Time **10 min**
- Temp **70 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **19.9 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **30 min** at **70C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Keep mash **10 min** at **100C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **28.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	3.5 kg (61.4%)	81 %	4
Grain	Strzegom Monachijski typ I	2 kg (35.1%)	79 %	16
Grain	Słód Caramunich Typ II Weyermann	0.2 kg (3.5%)	73 %	120

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	7.4 %
Boil	Tettnang	30 g	30 min	3 %
Aroma (end of boil)	Tettnang	30 g	5 min	3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Slant	500 ml	Fermentum Mobile