

## Tyskie klasyczne

- Gravity **12.4 BLG**
- ABV ---
- IBU **21**
- SRM **5.3**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **14 liter(s)**
- Trub loss **5 %**
- Size with trub loss **14.7 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **18 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **12.8 liter(s)**
- Total mash volume **16 liter(s)**

### Steps

- Temp **52 C**, Time **15 min**
- Temp **68 C**, Time **45 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **12.8 liter(s)** of strike water to **56C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **45 min** at **68C**
- Keep mash **5 min** at **78C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **18 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2.5 kg (78.1%)	80 %	4
Grain	Strzegom Wiedeński	0.5 kg (15.6%)	79 %	10
Grain	Strzegom Karmel 30	0.1 kg (3.1%)	75 %	30
Grain	Acid Malt	0.1 kg (3.1%)	58.7 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	6 g	60 min	10 %
Boil	lunga	6 g	30 min	11 %
Boil	Lublin (Lubelski)	10 g	10 min	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M76 Bavarian Lager	Lager	Dry	10 g	Mangrove Jack's

### Extras

Type	Name	Amount	Use for	Time
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Fining	mech irlandzki	3 g	Boil	60 min
Water Agent	chlorek wapnia	4 g	Mash	---