

# German Pils

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **35**
- SRM **2.9**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **0 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

## Mash information

- Mash efficiency **84 %**
- Liquor-to-grist ratio **3.65 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **21.4 liter(s)**

## Steps

- Temp **52 C**, Time **5 min**
- Temp **64 C**, Time **25 min**
- Temp **70 C**, Time **45 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **16.8 liter(s)** of strike water to **56.4C**
- Add grains
- Keep mash **5 min** at **52C**
- Keep mash **25 min** at **64C**
- Keep mash **45 min** at **70C**
- Keep mash **5 min** at **78C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Best Heidelberg Malt	4.6 kg (100%)	80.5 %	2.9

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum PL 2023	20 g	60 min	11 %
Boil	Tettnanger DE 2023	20 g	30 min	3.2 %
Boil	Hallertauer Mittelfruh DE 2023	20 g	15 min	4.8 %
Aroma (end of boil)	Tettnanger DE 2023	10 g	5 min	3.2 %
Aroma (end of boil)	Hallertauer Mittelfruh DE 2023	10 g	5 min	4.8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Fermentis Saflager W-34/70	Lager	Dry	23 g	Fermentis

## Extras

Type	Name	Amount	Use for	Time
Water Agent	Kwas Mlekowy 80%	4 g	Mash	---
Other	Witamina C	5 g	Primary	---
Other	Łuska Ryżowa	50 g	Mash	---
Fining	Whirlfloc T	1.25 g	Boil	10 min