

# German pils `21

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- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **33**
- SRM **2.9**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **32.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.27 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **23.5 liter(s)**

## Steps

- Temp **63 C**, Time **50 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **18 liter(s)** of strike water to **69.6C**
- Add grains
- Keep mash **50 min** at **63C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **19.9 liter(s)** of **76C** water or to achieve **32.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński bruntal	5 kg (90.9%)	81 %	2.8
Grain	Weyermann - Carapils	0.5 kg (9.1%)	78 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	15 g	60 min	10 %
Boil	Hallertau Tradition	50 g	60 min	4.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Liquid	1200 ml	Fermentum Mobile