

# Grünhopfen Helles

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **17**
- SRM **3.3**
- Style **Munich Helles**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.7 liter(s)**
- Total mash volume **20.2 liter(s)**

## Steps

- Temp **55 C**, Time **10 min**
- Temp **63 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **15.7 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **45 min** at **63C**
- Keep mash **15 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **14.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilsner Malz Best	4.3 kg (95.6%)	81 %	3
Grain	Carapils Best	0.1 kg (2.2%)	75 %	5
Grain	Carahell Best	0.1 kg (2.2%)	75 %	30

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	10 g	60 min	9.7 %
Boil	Grünhopfen	40 g	15 min	3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - 2206 Bavarian Lager	Lager	Liquid	300 ml	Wyeast Labs

## Notes

- Nastepna warka min 20 IBU  
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