

Helles 4

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **24**
- SRM **3.1**
- 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 **14 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **53 C**, Time **1 min**
- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **14 liter(s)** of strike water to **57.7C**
- Add grains
- Keep mash **1 min** at **53C**
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilsner Malz Best	3.8 kg (95%)	81 %	3
Grain	Carapils Best	0.1 kg (2.5%)	75 %	5
Grain	Carahell Best	0.1 kg (2.5%)	75 %	30

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Marynka	5 g	60 min	7.3 %
Whirlpool	Nectaron	40 g	20 min	13.7 %

Yeasts

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