

Helles?

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **19**
- SRM **3.5**
- Style **Munich Helles**

Batch size

- Expected quantity of finished beer **9 liter(s)**
- Trub loss **5 %**
- Size with trub loss **9.4 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **11.8 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **6.7 liter(s)**
- Total mash volume **8.6 liter(s)**

Steps

- Temp **66 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **6.7 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **30 min** at **66C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **7 liter(s)** of **76C** water or to achieve **11.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	1.7 kg (89.5%)	80 %	4
Grain	Weyermann - Light Munich Malt	0.1 kg (5.3%)	82 %	14
Grain	Weyermann - Acidulated Malt	0.1 kg (5.3%)	80 %	6

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Tradition	12 g	60 min	6.2 %
Aroma (end of boil)	Hallertau Tradition	10 g	0 min	6.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
wlp860 munich helles	Lager	Liquid	100 ml	White Labs