

# Munich Helles

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **16**
- SRM **4.2**
- Style **Munich Helles**

## Batch size

- Expected quantity of finished beer **38 liter(s)**
- Trub loss **5 %**
- Size with trub loss **39.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **48.1 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **31.5 liter(s)**
- Total mash volume **42 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **31.5 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **78C**
- Sparge using **27.1 liter(s)** of **76C** water or to achieve **48.1 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	10 kg (95.2%)	80 %	4
Grain	Monachijski	0.5 kg (4.8%)	80 %	16

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	7.8 %
Boil	Hallertau Mittelfruh	25 g	60 min	3 %
Boil	Hallertau Mittelfruh	25 g	20 min	3 %
Boil	Hallertau Mittelfruh	50 g	0 min	3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast 2487 Hella Bock - PC	Lager	Liquid	2000 ml	Wyeast
W-34/70	Lager	Dry	23 g	Fermentis

## Extras

Type	Name	Amount	Use for	Time
Water Agent	Kwas mlekowy	20 g	Mash	60 min

Water Agent	CaCl <sub>2</sub>	10 g	Mash	60 min
Fining	Whirlfloc-T	2.5 g	Boil	10 min