

# munich pils

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- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **48**
- SRM **6.5**
- Style **Munich Helles**

## Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **80 min**
- Evaporation rate **8 %/h**
- Boil size **23.8 liter(s)**

## Mash information

- Mash efficiency **96 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **11.4 liter(s)**
- Total mash volume **14.6 liter(s)**

## Steps

- Temp **51 C**, Time **15 min**
- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

## Mash step by step

- Heat up **11.4 liter(s)** of strike water to **55.4C**
- Add grains
- Keep mash **15 min** at **51C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Sparge using **15.7 liter(s)** of **76C** water or to achieve **23.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Bohemian Pilsner Malt	2 kg (61.5%)	81 %	4
Grain	Briess - Munich Malt 10L	1 kg (30.8%)	77 %	16
Grain	Słód Caramunich Typ II Weyermann	0.25 kg (7.7%)	73 %	120

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Premiant	10 g	60 min	9.9 %
Boil	Northern Brewer	10 g	60 min	9.3 %
Boil	Premiant	15 g	20 min	9.9 %
Boil	Northern Brewer	15 g	20 min	9.3 %
Boil	Hersbrucker	20 g	10 min	2.8 %