

Munich Lager Harmonie/Saaz nowe

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **40**
- SRM **3.9**
- Style **Bohemian Pilsener**

Batch size

- Expected quantity of finished beer **54 liter(s)**
- Trub loss **2 %**
- Size with trub loss **55.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **67.6 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **33 liter(s)**
- Total mash volume **44 liter(s)**

Steps

- Temp **63 C**, Time **20 min**
- Temp **65 C**, Time **20 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **33 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **20 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **45.6 liter(s)** of **76C** water or to achieve **67.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	9 kg (81.8%)	82 %	4
Grain	Viking Munich Malt	1 kg (9.1%)	78 %	18
Grain	Viking Carabody Malt	1 kg (9.1%)	78 %	8

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Harmonie	75 g	50 min	9 %
Aroma (end of boil)	Saaz (Czech Republic)	100 g	20 min	3.2 %
Whirlpool	Saaz (Czech Republic)	100 g	20 min	3.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - 2308 Munich Lager	Lager	Slant	700 ml	Wyeast

Extras

Type	Name	Amount	Use for	Time
Water Agent	Kwas fosforowy 75%	9 g	Mash	70 min
Water Agent	Chlorek wapnia ml	5 g	Mash	70 min
Water Agent	Gips piwowarski	14 g	Mash	70 min
Fining	Whirfloc	3 g	Boil	12 min